CONTADORES DE ENERGIA ELÉTRICA

Equipamento de Medição Inteligente, para pontos de BTN monofásicos / trifásicos

Complemento aos *standards* para modelo de dados e interfaces de comunicação

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HISTÓRICO DE EDIÇÕES DO DOCUMENTO

Edição	Data	Descrição de alterações
4ª	JUL 2020	- Alteração da designação de EDP Box para Equipamento de Medição Inteligente (EMI). - 5.1.1 Clientes: introdução de novos clientes em função do tipo de *firmware* (base e com extensão de cibersegurança) e dos perfis de comunicação/interfaces. - 5.1.2 Níveis de acesso: As permissões de acesso passam a ser definidas em função do tipo de *firmware*. - 5.2 Perfis de Comunicação: O perfil GPRS foi removido, e o detalhe dos objetos dos perfis de comunicação foi transferido para uma nova secção denominada "5.4 Objetos dos Perfis de Comunicação e Interfaces". - 5.3.2 Diagrama de cargas: secção removida, cujo detalhe foi transferido para a especificação funcional (DEF-C44-506/N). - 5.3.2.1.1 Grupos de eventos: adicionados os grupos de eventos de operações de segurança com sucesso e falhadas. - 5.3.2.1.2 Lista de eventos: o Adicionados novos eventos: *- Phase sequence inverted;* *- Phase sequence replaced;* *- QoS reset;* *- Threshold for neutral loss or overvoltage with consumption detection changed;* *- Threshold for neutral recovery or overvoltage with production detection changed;* *- Time threshold for neutral loss/overvoltage detection changed;* *- Time threshold for neutral recovery changed;* *- Time threshold for monitoring of overvoltage recovery changed;* *- Time threshold for timed manual connection changed;* *- Overvoltage monitoring disabled;* *- Overvoltage monitoring enabled without ICP triggering;* *- Overvoltage monitoring enabled with ICP triggering;* *- Timed manual connection enabled;* *- Timed manual connection disabled;* *- ICP export power control enabled;* *- ICP export power control disabled;* *- Exported power control disconnection;* *- Overvoltage disconnection;* *- Timed manual connection;* *- Overvoltage with consumption begin;* *- Overvoltage with production begin;* *- QoS – Overvoltage with consumption end ;* *- QoS – Overvoltage with production end;* *- Voltage in the output terminals with ICP disconnected period begin;* *- Voltage in the output terminals with ICP disconnected period end;* *- Casing open;* *- Casing close,* *- Unbalance current period begin;* *- Unbalance current period end;* *- RS485 (HDLC/DLMS) port communication start;*

Edição	Data	Descrição de alterações
		- RS485 (HDLC/DLMS) port communication end. o Alteração da designação de eventos: *- "Power control disconnection" para "Imported power control disconnection";* *- "HAN communication parameters changed" para "HAN address changed"* o Clarificação da descrição de eventos: *- ICP no trip current exceeded;* *- Long power failure;* *- QoS – Long power failure;* *- HAN communication parameters changed;* *- COM parameters changed.* - 5.3.2.2.13 Operações de segurança com sucesso: adicionado novo registo de eventos. - 5.3.2.2.14 Operações de segurança falhadas: adicionado novo registo de eventos. - 5.3.2.3 Tratamento de Erros: esclarecimento do registo de erros. - 5.3.2.4 Tratamento de Alarmes: adicionados novos alarmes: - Alarme de tensão na saída com o ICP aberto; - Alarme de segurança; - Alarme de sequência de fases invertida; - Alarme de ICP aberto por sobrentesão. - 5.3.2.5 Código de estado do Diagrama de Cargas: reformatação do código de estado, cujo detalhe foi transferido para a especificação funcional (DEF-C44-506/N). - 5.4 Objetos dos Perfis de Comunicação e Interfaces: nova secção para o detalhe dos objetos associados à configuração dos perfis de comunicação e interfaces. - 5.4.3 Interface série RS485: definição do endereço HDLC por defeito da porta RS485. - 5.5.1 Atribuição SAP, Associações LN, Security Setup, Frame counter, Nome do Dispositivo Lógico (COSEM): adicionados novos objetos: *- Association LN - Secure General Client Association;* *- Association LN - Secure Broadcast PLC Client Association;* *- Security Setup - Secure General Client;* *- Security Setup - Secure Broadcast PLC Client;* *- Frame Counter - GUEK Frame Count Secure General Client;* *- Frame Counter - GUEK Frame Counter Secure Broadcast PLC Client.* - 5.5.2 Registos de Identificação: *- Device ID 3: alteração do valor por defeito;* *- Device ID 8: novo* objecto. - 5.5.3 Relógio: *- Clock Time Shift Event Limit*: clarificação da funcionalidade do objeto. - 5.5.8 Tratamento de Eventos (Eventos e *Logs*): adicionados novos objetos: *- Event Object - "Correct Security Operations" Log;* *- "Correct Security Operations" Event Log;*

Edição	Data	Descrição de alterações
		- Event Object - "Failed Security Operations" Log; *- "Failed Security Operations " Event Log,* *- "Correct Security Operations" Event Log Filter;* *- "Failed Security Operation" Event Log Filter;* - 5.5.9 Controlo de Potência e respetivos registos: *- Maximum Apparent Power per phase (S_{PMF}):* novo objeto; *- ICP export power control Activation:* novo objeto; *- parameter Q - ICP:* alteração do valor por defeito; *- parameter k - ICP:* alteração do valor por defeito. - 5.5.10 Atualização de Firmware: *- Image Transfer:* definição de intervalo de valores para o atributo 2 (*image_block_size*), e alteração do nível de acesso para RW. - 5.5.14 Outros objetos abstratos: o Adicionados novos objetos: *- Secure Broadcast PLC Client GUEK ID;* *- Secure Broadcast PLC Client GAK ID;* *- Secure Broadcast PLC Client GBEK ID;* *- FW Update Public Key ID;* *- FW Update Public Key;* *- Timeout open session for Secure General client through Secure channel;* *- Timeout open session for Secure General client through Secure channel for current association;* *- Timeout open session for Secure Broadcast PLC client through PLC channel;* *- Timeout open session for Secure Broadcast PLC client through PLC channel for current - association;* *- Remote communication operation mode (anteriormente designado por "Utility Defined register 5");* *- Battery voltage;* *- DLMS association's counter - established through PLC PRIME interface;* *- DLMS association's counter - established through RS485 interface;* *- HAN request's counter.* o Outras alterações: *- Global Meter Reset:* Inclusão do método de *reset* aos registos de Qualidade de Serviço; *- HAN interface – communication speed:* este objeto passa a ser aplicável apenas a equipamentos com versões de FW sem HDLC/DLMS na porta série RS485; *- HAN interface – access profile: :* alteração do valor por defeito. - 5.6.1 Registos de Energia: o Adicionados novos objetos: *- Reactive energy QI (+Ri) L1;* *- Reactive energy QI (+Ri) L2;* *- Reactive energy QI (+Ri) L3;* *- Reactive energy QII (+Rc) L1;*

Edição	Data	Descrição de alterações
		- *Reactive energy QII (+Rc) L2;* - *Reactive energy QII (+Rc) L3;* - *Reactive energy QIII (-Ri) L1;* - *Reactive energy QIII (-Ri) L2;* - *Reactive energy QIII (-Ri) L3;* - *Reactive energy QIV (-Rc) L1;* - *Reactive energy QIV (-Rc) L2;* - *Reactive energy QIV (-Rc) L3;* - *Active energy import (+A) incremental (short);* - *Active energy export (−A) incremental (short);* - *Reactive energy QI (+Ri) incremental (short);* - *Reactive energy QII (+Rc) incremental (short);* - *Reactive energy QIII (-Ri) incremental (short);* - *Reactive energy QIV (-Rc) incremental (short);* - *Active energy import (+A) L1 incremental (short);* - *Active energy import (+A) L2 incremental (short);* - *Active energy import (+A) L3 incremental (short);* - *Active energy export (−A) L1 incremental (short);* - *Active energy export (−A) L2 incremental (short);* - *Active energy export (−A) L3 incremental (short);* - *Reactive energy QI (+Ri) L1 incremental (short);* - *Reactive energy QI (+Ri) L2 incremental (short);* - *Reactive energy QI (+Ri) L3 incremental (short);* - *Reactive energy QII (+Rc) L1 incremental (short);* - *Reactive energy QII (+Rc) L2 incremental (short);* - *Reactive energy QII (+Rc) L3 incremental (short);* - *Reactive energy QIII (-Ri) L1 incremental (short);* - *Reactive energy QIII (-Ri) L2 incremental (short);* - *Reactive energy QIII (-Ri) L3 incremental (short);* - *Reactive energy QIV (-Rc) L1 incremental (short);* - *Reactive energy QIV (-Rc) L2 incremental (short);* - *Reactive energy QIV (-Rc) L3 incremental (short).* ○ Outras alterações: - *Instantaneous Energy Values:* Alteração da estrutura do atributo 3 (*capture_objects*). - 5.6.2 Registos de Potência: ○ Adicionados novos objetos: - *Maximum Demand Register Active power+ L1 (QI+QIV);* - *Maximum Demand Register Active power+ L2 (QI+QIV);* - *Maximum Demand Register Active power+ L3 (QI+QIV);* - *Maximum Demand Register Active power– L1 (QII+QIII);* - *Maximum Demand Register Active power– L2 (QII+QIII);* - *Maximum Demand Register Active power– L3 (QII+QIII).* ○ Outras alterações: - *Maximum Demand Register Active power+ (QI+QIV):* Inclusão de método de *reset*; - *Maximum Demand Register Active power– (QII+QIII):* Inclusão de método de *reset*.

Edição	Data	Descrição de alterações
		- 5.6.3 Diagrama de Cargas: o Adicionados novos objetos: *- Last Average power factor (PF) register (short);* *- Last Average Voltage L1 register (short);* *- Last Average Voltage L2 register (short);* *- Last Average Voltage L3 register (short);* *- Last Average any phase voltage register (short).* o Outras alterações: *- Load profile with period 1:* Atualização da lista de grandezas que poderão ser configuradas no atributo 3 (*capture_objects*). - 5.6.4 Valores Instantâneos: adicionados novos objetos: *- Instantaneous apparent power + (L1);* *- Instantaneous apparent power - (L1);* *- Instantaneous apparent power + (L2);* *- Instantaneous apparent power - (L2);* *- Instantaneous apparent power + (L3);* *- Instantaneous apparent power - (L3);* *- Instantaneous apparent power + (Sum of all phases);* *- Instantaneous apparent power - (Sum of all phases).* - 5.6.5 Qualidade de Serviço (variações de tensão, perda de neutro e monitorização de sobretensões): adicionados novos objetos: *- Threshold for neutral loss (Δ_{PN}) or overvoltage with consumption detection;* *- Threshold for neutral recovery (Δ_{RN}) or overvoltage with production detection (Δ_{EP});* *- Time Threshold for neutral loss (T_{PN}) / overvoltage detection (T_{MS});* *- Time Threshold for neutral recovery (T_{RN});* *- Time Threshold for monitoring of overvoltage recovery (T_{MRS});* *- Time Threshold for timed manual connection (T_{RMT});* *- Overvoltage monitoring mode.* - ANEXO A ESPECIFICAÇÃO DE NOVAS CLASSES DLMS: anexo removido, cujo detalhe foi transferido para a especificação funcional (DEF-C44-506/N). - ANEXO B PLC PRIME (OFDM PRIME) CLASSES DE CONFIGURAÇÃO: anexo removido, cujo detalhe foi transferido para a secção 5.4.2. - ANEXO B MATRIZ DE APLICABILIDADE DO MODELO DE DADOS: separação dos equipamentos em monofásico e trifásico, e adição dos novos objetos

ÍNDICE

0 INTRODUÇÃO

O presente documento anula e substitui a edição anterior, elaborada em janeiro de 2013.

As principais alterações introduzidas, em relação à anterior versão, resultam da atualização do modelo de dados em conformidade com a revisão dos requisitos funcionais, nomeadamente a flexibilização das comunicações, onde a interface RS485 passa a funcionar não só como HAN mas também como interface remota para a ligação de um módulo de comunicação externo, e da extensão de cibersegurança (embora o detalhe seja remetido para documentos específicos).

O presente documento constitui um complemento às normas usadas pela solução de Redes Inteligentes da EDP Distribuição, no âmbito do modelo de dados e protocolos de comunicação, de modo a clarificar, detalhar ou fechar pontos opcionais nessas normas, para permitir a implementação de uma solução com equipamentos interoperáveis.

Os objetos do modelo de dados que não constem do presente documento, mas que se revelem necessários para a implementação da funcionalidade requerida para a solução, devem ser especificados em conjunto e com o acordo da EDP Distribuição. O mesmo se aplica a eventuais alterações que seja necessário efecuar ao modelo de dados especificado neste documento.

1 OBJETIVO

O objetivo deste documento é realizar a definição aberta, normalizada e sem ambiguidades de um modelo de dados e um conjunto de protocolos de comunicação, baseado no DLMS/COSEM, para a solução InovGrid da EDP Distribuição.

O presente documento tem como objetivo fechar, complementando face às normas, a definição funcional do modelo de dados e protocolo de comunicação para os Equipamentos de Medição Inteligente, para pontos de BTN monofásicos e trifásicos, utilizando os seguintes interfaces de comunicação:

- comunicação local com o equipamento através da porta ótica;
- comunicação local (HAN) e remota com o equipamento através da porta série RS485;
- comunicação entre o equipamento e o concentrador ou DTC através da LAN (conforme definida nestes equipamentos);
- transferência de informação entre os sistemas centrais (*Head End System*) e os DTCs.

2 CAMPO DE APLICAÇÃO

O presente documento aplica-se a Equipamentos de Medição Inteligente, para pontos de BTN monofásicos e trifásicos. Aplica-se igualmente a equipamentos com capacidade de comunicação remota para a Iluminação Pública - IP (ver ANEXO B do presente documento).

3 NORMAS E DOCUMENTOS DE REFERÊNCIA

O presente documento inclui disposições de outros documentos, referenciados nos locais apropriados do seu texto, os quais se encontram a seguir listados, com indicação das respetivas datas de edição.

Quaisquer alterações das referidas edições listadas só serão aplicáveis no âmbito do presente documento se forem objeto de inclusão específica, por modificação ou aditamento ao mesmo.

[1] 2011 *Companion standard for communication interfaces, versão 1.5 de 14 de Abril de 2011*

[2] 2011 *Draft Standard for PowerLine Intelligent Metering Evolution PRIME-R1.3.6*

[3] 2019 *DLMS UA 1000-1:2019 13th Ed.: Blue book, COSEM Identification System and Interface Classes*

[4] 2009 *DLMS UA 1000-2: 2009 7th Ed.: Green book, DLMS/COSEM Architecture and Protocols*

[5] 2019 *DLMS UA 1000-2: 2019 9th Ed.: Green book, DLMS/COSEM Architecture and Protocols*

[6] 1996 *IEC 61334-4-32: Distribution automation using distribution line carrier systems – Part 4: Data communication protocols – Section 32: LLC*

[7] 2006 *IEC 62056-47 Ed 1.0:2006: Electricity metering – Data exchange for meter reading, tariff and load control – Part 47: COSEM transport layer for IP networks*

[8] 2002 *IEC 62056-21 Ed 1.0:2002: Electricity metering – Data exchange for meter reading, tariff and load control – Part 21: Direct local data exchange*

[9] 2020 DEF-C44-506/N Contadores de energia elétrica. Equipamento de Medição Inteligente, para pontos de BTN monofásicos / trifásicos – Especificação funcional

[10] 2015 DEF-C44-508/N CONTADORES DE ENERGIA ELÉTRICA. Equipamentos de monitorização de rede, de telegestão e de contagem, estáticos, combinados, para pontos de medição de IP – Especificação funcional

[11] 2020 DEF-C44-512/N Equipamento de Medição Inteligente, para pontos de BTN monofásicos / trifásicos – *Security Functional Specification*

[12] 2020 DEF-C44-513/N Equipamento de Medição Inteligente, para pontos de BTN monofásicos / trifásicos – *DLMS/COSEM Profile Security Extension*

4 TERMOS E DEFINIÇÕES

4.1
DTC
equipamento para instalação num Posto de Transformação, que possibilita a supervisão de diversos equipamentos que se encontram instalados nos locais de consumo, e o posterior envio da informação para os sistemas a montante. Adicionalmente também poderá permitir a recolha de dados de sensores ao nível do Posto de Transformação assim como a automação do mesmo.

5 MODELO DE DADOS E PROTOCOLOS DE COMUNICAÇÃO

5.1 Dispositivos Lógicos e Associações (conceito)

No DLMS/COSEM um equipamento de contagem é modelizado em dispositivos físicos e dispositivos lógicos. O equipamento é um dispositivo físico, que pode conter um ou vários dispositivos lógicos.

No caso atual, foi decidido que só existe 1 dispositivo lógico (o *management logical device*).

5.1.1 Clientes

O equipamento lógico deve disponibilizar os clientes apresentados na tabela seguinte, em função do tipo de *firmware* (base e com extensão de cibersegurança) e dos perfis de comunicação/interfaces:

Cliente			***Firmware* base**			***Firmware* com extensão de cibersegurança**		
Tipo	**Sigla**	***Client ID***	**Ótica**	**PLC PRIME**	**Série RS485**	**Ótica**	**PLC PRIME**	**Série RS485**
Escrita (*Management*)	M	1	✓	✓	✓	✓		
Leitura (*Reading*)	R	2	✓	✓	✓	✓		
Firmware	F	3	✓	✓	✓	✓		
Secure General Client	SG	4					✓	✓

Cliente			*Firmware* base			*Firmware* com extensão de cibersegurança		
Tipo	**Sigla**	***Client ID***	**Ótica**	**PLC PRIME**	**Série RS485**	**Ótica**	**PLC PRIME**	**Série RS485**
Secure Broadcast Client	SB	5					✓	
Público (*Public*)	P	16	✓	✓	✓	✓	✓	✓

A disponibilidade e funcionalidade dos vários clintes, em particular para o *firmware* com extensão de cibersegurança, estão detalhados nos documentos [11] e [12].

5.1.1.1 Cliente Público

O cliente Público está definido para efeitos de teste. Devido ao facto deste cliente ter o menor nível de segurança, não é permitida a leitura de dados de contagem, nem a realização de qualquer tipo de programação. Este perfil só permite visualizar a estrutura interna do dispositivo físico.

Os serviços suportados são os seguintes:

- Transferências em bloco com *Get*;
- *Get*;
- Acesso seletivo.

5.1.1.2 Cliente de Leitura

O cliente de Leitura está definido para leitura de dados de contagem e configuração do equipamento. Este cliente tem um nível de segurança que requer um acesso protegido com palavra-chave/LLS.

Os serviços suportados são os seguintes:

- Transferências em bloco com *Get*;
- *Get*;
- Acesso seletivo.

5.1.1.3 Cliente de Escrita

O cliente de Escrita é utilizado para comunicação local e remota com o equipamento (neste último caso apenas para versões de *firmware* base) . Este cliente pode executar qualquer operação no equipamento, com exceção de atualizações de *firmware*. Este cliente tem um nível de segurança que requer um acesso protegido com palavra-chave/LLS.

Adicionalmente, este cliente é o destinatário dos eventos, pelo que implementa os serviços associados com a notificação de eventos (nas versões de *firmware* base).

Os serviços suportados são os seguintes:

- Transferências em bloco com *Get*;
- Transferências em bloco com *Set*;
- *Set*;
- *Get*;
- Acesso seletivo;
- Notificação de Eventos;
- *Action*.

5.1.1.4 Cliente de *Firmware*

O cliente de *Firmware* é utilizado para atualizações de *firmware*, só tendo disponível funções de atualização de *firmware*. Este cliente tem um nível de segurança que requer um acesso protegido com palavra-chave/LLS.

Os serviços suportados são os seguintes:

- Transferências em bloco com *Get*;
- Transferências em bloco com *Set*;
- *Set*;
- *Get*;
- Acesso seletivo;
- *Action*.

5.1.1.5 Cliente "*Secure General Client*"

O "*Secure General Client*" é utilizado exclusivamente para a comunicação remota com o equipamento, quer seja por PLC PRIME ou pela interface série RS485. Este cliente tem dois estágios diferentes, sem segurança ativada e com segurança ativada. O detalhe da funcionalidade e operação deste cliente é apresentado nos documentos [11] e [12].

Este cliente pode executar qualquer operação no equipamento, incluindo atualizações de *firmware*. Adicionalmente, este cliente é o destinatário dos eventos, pelo que implementa os serviços associados com a notificação de eventos (nas versões de *firmware* com extensão de cibersegurança).

Os serviços suportados são os seguintes:

- Transferências em bloco com *Get*;
- Transferências em bloco com *Set*;
- *Set*;
- *Get*;
- Acesso seletivo;
- Notificação de Eventos;
- *Action*.

5.1.1.6 Cliente "*Secure Broadcast Client*"

O "*Secure Broadcast Client*" é utilizado exclusivamente para a comunicação remota com o equipamento, por PLC PRIME. Este cliente apenas pode operar com o modo seguro ativado. O detalhe da funcionalidade e operação deste cliente é apresentado nos documentos [11] e [12].

O principal objetivo deste cliente é para a atualização de *firmware* para mais do que um equipamento simultaneamente, bem como para o envio dos comandos de Gestão da Procura.

Os serviços suportados são os seguintes:

- Transferências em bloco com *Get*;
- Transferências em bloco com *Set*;
- *Set*;
- *Get*;
- Acesso seletivo;
- *Action*.

5.1.2 Níveis de Acesso

Para cada cliente devem ser geridas as permissões de acesso a cada atributo de cada objeto definido neste documento. Isto aplica-se a *Get*, *Set* e permissões de acesso às *Actions*.

Conforme o cliente, um determinado atributo pode não estar acessível quer para *Set*, *Get* ou *Action*.

Quando um *Get*, *Set* ou *Action* não é gerido para um atributo, o resultado a retornar em caso de uma tentativa de acesso deve ser *read-write-denied*.

As permissões de acesso a cada atributo e/ou método encontram-se definidas na estrutura de cada objeto, em função do tipo de *firmware* e dos clientes existentes (de acordo com a secção 5.1.1):

- *Firmware* base (iguais para todos os perfis de comunicação/interfaces):
  - Escrita,
  - Leitura,
  - *Firmware;*
  - Público.
- *Firmware* com extensão de cibersegurança:
  - *Secure General Client* (PLC PRIME e Série RS485);
  - *Secure Broadcast Client* (PLC PRIME);
  - Escrita (interface ótica, nos moldes definidos para o *firmware* base);
  - Leitura (interface ótica, nos moldes definidos para o *firmware* base);
  - *Firmware* (interface ótica, nos moldes definidos para o *firmware* base);
  - Público (para todos os perfis de comunicação/interfaces).

5.2 Perfis de Comunicação

Existem 3 perfis de comunicação possíveis:

- Ótica;
- PLC PRIME;
- Série RS485.

O DLMS/COSEM utiliza apenas mecanismo "*PULL*" para a camada de aplicação.

O detalhe da configuração dos vários perfis de comunicação e interfaces está apresentado na secção 5.4.

5.3 Objetos DLMS/COSEM

O *Object Model* do equipamento está dividido em três partes:

- *Communication interfaces and profiles objects* (Secção 5.4 do presente documento);
- *Abstract objects* (Secção 5.5 do presente documento);
- *Electricity related objects* (Secção 5.6 do presente documento).

5.3.1 Tárifário

O tarifário é o conjunto de parâmetros que estruturam o tratamento das medidas elétricas para suportarem os acordos contratuais.

Os parâmetros de cada tarifário são:

- **Estação tarifária**: período de tempo durante o ano onde condições tarifárias são idênticas. Existirão 2 estações tarifárias. A estação tarifária é caracterizada por uma data de início e um **ciclo tarifário** a aplicar.

Uma estação tarifária termina quando a próxima inicia. Definições de estações tarifárias são armazenadas em tabelas do tipo *season*.

- **Ciclo tarifário:** período de tempo, definido para uma semana, onde as condições tarifárias são idênticas. A cada ciclo tarifário poderão estar associados um conjunto de dias especiais. Podem ser definidos até 10 **tipos de dias** distintos por cada ciclo tarifário. As definições de "Ciclo Tarifário" são armazenadas em tabelas do tipo *week profile*. As definições de "Dias Especiais" são armazenadas em tabelas do tipo *special day*.
- **Tipo de dia:** podem ser definidos até 10 tipos de dias, estando já alguns pré-definidos**:** i) segunda a sexta de verão, ii) segunda a sexta de inverno, iii) sábados de verão, iv) sábados de inverno, v) domingos todo o ano, e vi) feriados todo o ano.
- **Período horário:** discriminação do tempo ao longo do dia. Um período horário é caracterizado por um *array* de hora de início e posto tarifário a aplicar. Um período dura até ao próximo período iniciar. As definições de posto tarifário são armazenadas em tabelas do tipo *day profile*.
- **Posto tarifário:** período de tempo onde a mesma tarifa é aplicada. Haverá pelo menos 6 postos tarifários - o 1º identificado pelo número 1, o segundo pelo número 2, etc…

Devem existir pelo menos 2 tarifários. Só os tarifários configurados devem ser transmitidos. Um tarifário está definido se tiver pelo menos uma estação tarifária e ciclo tarifário.

O tarifário é utilizado para definir a atualização dos registos tarifários. Cada tarifário ativo tem um tarifário passivo.

O tarifário passivo é utilizado para alteração de parâmetros antes da data de ativação do tarifário. A data de ativação é aquela em que o equipamento passa a utilizar os parâmetros do tarifário passivo como tarifário ativo. Imediatamente antes da ativação de um tarifário, é realizado um fecho de faturação e o tarifário passivo será uma cópia do tarifário ativo com data/hora FF (não especificada).

O objeto "**Activity Calendar**" define cada tarifário e está descrito com mais detalhe no parágrafo "Abstract Objects" (ver secção 5.4 do presente documento).

Os objetos "**Data of billing period**" estão descritos em detalhe no parágrafo "**Abstract Objects**" (ver, abaixo, secção 5.4). De referir que estes objetos devem permitir a configuração da sua lista de objetos, permitindo a flexibilização dos dados guardados em históricos e recolhidos (válido para os 2 *billing periods* – mensal e diário).

5.3.2 Eventos, Alarmes e Tratamento de Erros

Esta secção apresenta o tratamento de eventos ou erros, baseado nos objetos DLMS para os equipamentos.
Todos os eventos são registados em vários registos de eventos. Os objetos DLMS associados são apresentados em detalhe na secção 0. Adicionalmente os eventos são utilizados para assinalar erros assim como para assinalar ou limpar alarmes.

5.3.2.1 Eventos

Existem 8 grupos de eventos, contendo 1 ou mais subgrupos cada, embora a aplicabilide de cada grupo dependa do tipo de equipamento (EMI ou EMI IP) e da versão de *firmware* (base ou com extensão de cibersegurança). Cada grupo tem o seu próprio registo de eventos. Cada evento tem um código unívoco que identifica a ação que o despoletou. Cada evento está associado a um registo de eventos e fica unicamente aí registado. Esta associação é permanente, não podendo ser alterada dinamicamente.

Qualquer evento pode despoletar o envio de um *EVENT-NOTIFICATION-Request APDU*. Os eventos que são afetados por este serviço são configuráveis através dos filtros dos eventos (ver secção 5.5.8 do presente documento).

5.3.2.1.1 Grupos de Eventos

Grupo de Eventos	Subgrupo de Eventos	Entradas Mínimas	Tipo de Evento	Descrição
1	10	100	*Standard*	Todos os eventos não incluídos nos restantes subgrupos.
	11	15	Potência contratada	Eventos relativos a alteração da potência contratada.
	12	15	*Firmware*	Eventos relativos a atualizações de *firmware.*
	13	15	Sincronização	Eventos associados a sincronizações de relógio.
	14	20	Configuração	Eventos associados à configuração do equipamento.
2	20	20	ICP	Eventos associados ao ICP.
3	31	15	Falhas de energia	Eventos associados a falhas de energia.
	32	15	Qualidade de serviço	Eventos associados à qualidade de serviço.
4	40	10	Antifraude	Eventos relativos à deteção de fraude e intrusão.
5	50	15	Gestão da procura	Eventos associados aos períodos de gestão da procura.
6	60	100	Ocorrência elevada	Eventos associados às comunicações locais e remotas.
7	70	50	Iluminação pública	Eventos associados ao controlo da Iluminação Pública (IP).
8	80	100	Operações de segurança com sucesso	Eventos relativos às operações de segurança realizadas com sucesso.
	81	30	Operações de segurança falhadas	Eventos relativos às operações de segurança falhadas.

5.3.2.1.2 Lista de Eventos

Na tabela seguinte apresenta-se a lista completa de eventos associada a equipamentos monofásicos e trifásicos do tipo EMI (cujas especificações funcionais estão descritas no documento DEF-C44-506/N) e do tipo EMI IP (cujas especificações funcionais estão descritas no documento DEF-C44-508/N). Na coluna "Aplicação" identifica-se, para cada um dos eventos, o tipo de equipamentos que o deverá gerar:

- Geral: evento gerado por todos os equipamentos;
- EMI: evento gerado apenas por equipamentos do tipo EMI;
- EMI IP: evento gerado apenas por equipamentos do tipo EMI IP;
- Trifásico: evento gerado apenas por equipamentos trifásicos.

A lista dos eventos do grupo 8, subgrupos 80 e 81, está detalhada no documento [12].

Nº Evento	Grupo de Eventos	Subgrupo de Eventos	Nome do Evento	Descrição do Evento	Aplicação
255	1,2,3, 4,5,6	10,11,12,13, 14,20,31,32, 40,50,60,70	*Event* Log Reset	*Reset* do log de eventos	Geral
1	1	10	*Reboot F*	Reinicialização do equipamento com falha de dados	Geral
2	1	10	Reboot	Reinicialização do equipamento sem falha de dados	Geral
3	1	10	*Power down*	Evento registado quando se verifica uma: - Monofásico: interrupção do fornecimento - Trifásico: interrupção de fornecimento nas três fases	Geral
4	1	10	*Power down L1*	Evento registado quando se verifica uma interrupção do fornecimento na fase L1	Trifásico
5	1	10	*Power down L2*	Evento registado quando se verifica uma interrupção do fornecimento na fase L2	Trifásico
6	1	10	*Power down L3*	Evento registado quando se verifica uma interrupção do fornecimento na fase L3	Trifásico
7	1	10	*Neutral loss*	Perda de neutro	Geral
8	1	10	*Low battery*	O evento é registado quando a reserva de marcha da pilha fica reduzida a 10%	Geral
9	1	10	*Critical internal error*	Evento registado quando ocorrem erros internos que estão associados à necessidade de substituição do equipamento	Geral
10-20	1	10	*Manufacturer other errors*	Reservado a outros erros	Geral
21	1	10	*Power up L1*	Evento registado quando se verifica o restabelecimento do fornecimento na fase L1	Trifásico
22	1	10	*Power up L2*	Evento registado quando se verifica o restabelecimento do fornecimento na fase L2	Trifásico
23	1	10	*Power up L3*	Evento registado quando se verifica o restabelecimento do fornecimento na fase L3	Trifásico
24	1	10	*Hour changed W_S*	Evento registado quando ocorre a mudança da hora legal numa das data/hora programadas (inverno--> verão)	Geral
25	1	10	*Hour changed S_W*	Evento registado quando ocorre a mudança da hora legal numa das data/hora programadas (verão--> inverno)	Geral
26	1	10	*Power up*	Evento registado quando se verifica: - Monofásico: o restabelecimento do fornecimento - Trifásico: o restabelecimento do fornecimento em pelo menos uma das três fases	Geral
27	1	10	*Neutral recovery*	Restabelecimento do neutro	Geral
28	1	10	*HAN address changed*	Alteração do endereço da porta HAN	EMI
29	1	10	*HAN access profile changed*	Alteração do perfil de acesso da porta HAN	EMI

Nº Evento	Grupo de Eventos	Subgrupo de Eventos	Nome do Evento	Descrição do Evento	Aplicação
30	1	10	*Other parameters changed*	Alteração de outros parâmetros para os quais não estejam discriminados eventos especifícos	Geral
31	1	10	COM parameters changed	Alteração de parâmetros de portas de comunicação (exceto do endereço e perfil de acesso da porta HAN)	Geral
32	1	10	Reading access password changed	Alteração de palavra-chave de leitura Aplicável para versões de *firmware* base.	Geral
33	1	10	*Management access password changed*	Alteração da palavra-chave de escrita Aplicável para versões de *firmware* base.	Geral
34	1	10	*FW access password changed*	Alteração da palavra-chave de firmware Aplicável para versões de *firmware* base.	Geral
35	1	10	*Battery charged*	O evento é registado quando num cenário de presença de alarme de falha de pilha, se verifica uma reserva de marcha de 50 %.	Geral
36	1	10	*DST changed*	Alteração da configuração da mudança automática da hora legal (DST - *Daylight Saving Time*)	Geral
37	1	10	*Not used*	Não utilizado	-
38	1	10	*Load Profile IP changed*	Alteração do período de integração do diagrama de carga	Geral
39	1	10	*Not used*	Não utilizado	-
40	1	10	*Not used*	Não utilizado	-
41	1	10	*Calendar name changed*	Alteração da identificação/descrição da configuração tarifária (calendar_name_active) do contrato 1	Geral
42-43	1	10	*Not used*	Não utilizado	-
44	1	10	*Closure command prompted contract 1*	Evento registado cada vez que ocorre um fecho mensal automático no tarifário 1	Geral
45	1	10	*Parameters contract 1 changed*	Evento registado quando é efetivada uma alteração na configuração do tarifário 1 (passagem de passivo para activo)	Geral
46	1	10	*Reserved for future use*	Evento reservado para utilização futura	-
47	1	10	*Special days table contract 1 passive changed*	Evento registado quando é realizada uma alteração na tabela de feriados do tarifário 1 passivo	Geral
48	1	10	*Contract 1 passive changed*	Evento registado quando é efetuada uma alteração na configuração tarifária do tarifário 1 passivo	Geral

Nº Evento	Grupo de Eventos	Subgrupo de Eventos	Nome do Evento	Descrição do Evento	Aplicação
49	1	10	*Contract 1 passive cleared*	Tarifário 1 passivo apagado	Geral
50	1	10	*Automatic billing end contract 1 passive changed*	Evento registado quando é realizada uma alteração da data/hora de fecho do período de faturação do tarifário 1 passivo	Geral
51	1	10	*Activation date contract 1 passive changed*	Evento registado quando é efetuada uma alteração a uma data de ativação do tarifário 1 passivo	Geral
52	1	10	*Closure command prompted contract 2*	Evento registado cada vez que ocorre um fecho mensal automático no tarifário 2	Geral
53	1	10	*Parameters contract 2 changed*	Evento registado quando é efetivada uma alteração na configuração do tarifário 2 (passagem de passivo para ativo)	Geral
54	1	10	*Special days table contract 2 passive changed*	Evento registado quando é realizada uma alteração na tabela de feriados do tarifário 2 passivo	Geral
55	1	10	*Contract 2 passive changed*	Evento registado quando é efetuada uma alteração na configuração tarifária do tarifário 2 passivo	Geral
56	1	10	*Contract 2 passive cleared*	Tarifário 2 passivo apagado	Geral
57	1	10	*Automatic billing end contract 2 passive changed*	Evento registado quando é realizada uma alteração da data/hora de fecho do período de faturação do tarifário 2 passivo	Geral
58	1	10	*Activation date contract 2 passive changed*	Evento registado quando é efetuada uma alteração a uma data de ativação do tarifário 2 passivo	Geral
59	1	10	*Phase sequence inverted*	Evento registado quando a sequência de fases está invertida	Trifásico
60	1	10	*Phase sequence replaced*	Evento registado quando a sequência de fases é reposta	Trifásico
61-89	1	10	*Reserved for future use*	Eventos reservados para utilização futura	-
90	1	10	*Time threshold for over/under voltage changed*	Alteração dos limites temporais para deteção de subtensões e sobretensões	Geral
91	1	10	*Time threshold for long power failures changed*	Alteração do limite temporal para deteção de interrupções longas de fornecimento	Geral

Nº Evento	Grupo de Eventos	Subgrupo de Eventos	Nome do Evento	Descrição do Evento	Aplicação
92	1	10	*Reference voltage changed*	Alteração do valor de referência da tensão	Geral
93	1	10	*Threshold for overvoltage changed*	Alteração do valor para a determinação das sobretensões	Geral
94	1	10	*Threshold for undervoltage changed*	Alteração do valor para a determinação das subtensões	Geral
95	1	10	*Threshold for long power failures changed*	Alteração do limite de tensão para a deteção de interrupções longas de fornecimento	Geral
96	1	11	*Contract power changed*	Evento registado quando é realizada uma alteração da potência contratada	EMI
97	1	12	*Firmware update*	Evento registado quando ocorre uma atualização do firmware aplicacional do equipamento	Geral
98	1	13	*Clock sync*	Evento registado quando ocorre um acerto/sincronização do relógio de tempo real	Geral
99	1	10	*Passwords reset*	Reset a todas as palavras-chave, assumindo os valores de fábrica Aplicável para versões de *firmware* base.	Geral
100	1	10	*Data reset*	Reset de dados, em que todos os parâmetros tomam os valores de fábrica e os registos de faturação e diagrama de carga são apagados	Geral
101	1	10	*Season changed contract 1*	Evento registado quando ocorre a mudança da estação tarifária do tarifário 1	Geral
102	1	10	*Season changed contract 2*	Evento registado quando ocorre a mudança da estação tarifária do tarifário 2	Geral
103	1	10	*QoS reset*	Reset dos registos de duração e quantidade de interrupções longas e variações de tensão	Geral
104	1	10	*Manual billing*	Evento registado cada vez que ocorre um fecho mensal manual em todos os tarifários	Geral
105-107	1	10	*Reserved for future use*	Eventos reservados para utilização futura	-
108	1	10	*Reset power max contract 1*	Evento associado ao reset dos registos de ponta máxima do tarifário 1	Geral
109	1	10	*Reset power max contract 2*	Evento associado ao reset dos registos de ponta máxima do tarifário 2	Geral
110	1	10	*Reset load profile*	Evento associado ao reset dos registos de diagramas de carga	Geral
111	1	10	*Overflow*	Evento registado quando algum registo totalizador ou tarifário atinge o seu valor limite	Geral
112-117	1	11	*Reserved for future use*	Eventos reservados para utilização futura	-

Nº Evento	Grupo de Eventos	Subgrupo de Eventos	Nome do Evento	Descrição do Evento	Aplicação
118	1	14	*ICP curve parameters changed*	Evento registado quando ocorrem alterações aos parâmetros da curva de disparo do ICP	EMI
119	1	12	*Firmware comm update*	Evento registado quando ocorre uma atualização do firmware do módulo de comunicações	EMI
120-121	1	13	*Reserved for future use*	Eventos reservados para utilização futura	-
122	1	14	*Load profile config*	Evento registado quando é realizada uma alteração da configuração dos canais do diagrama de carga	Geral
123	1	14	*Demand IP changed*	Evento registado quando é realizada uma alteração ao período de integração da potência	Geral
124	1	14	*Free registers*	Evento registado quando é efetuada uma alteração à configuração de pelo menos um dos registos livres	Geral
125	1	14	*Reserved for future use*	Evento reservado para utilização futura	-
126	1	14	*Auto scroll config*	Evento registado quando é realizada uma alteração da configuração do scroll automático do visor	Geral
127	1	14	*Manual scroll config*	Evento registado quando é realizada uma alteração da configuração do scroll manual do visor	Geral
128	1	14	*Reserved for future use*	Evento reservado para utilização futura	-
129	1	14	*Time expose auto scroll changed*	Evento registado quando é realizada uma alteração à configuração do tempo de exposição de cada função	Geral
130	1	14	*Return time to auto scroll changed*	Evento registado quando é realizada uma alteração no tempo de retorno ao scroll automático do visor	Geral
131	1	14	*Monthly billing config contract 1 changed*	Evento registado quando é realizada uma alteração à informação a reter nos fechos de faturação do tarifário 1	Geral
132	1	14	*Monthly billing config contract 2 changed*	Evento registado quando é realizada uma alteração à informação a reter nos fechos de faturação do tarifário 2	Geral
133	1	14	*Daily billing config contract 1 changed*	Evento registado quando é realizada uma alteração à informação a reter nos fechos diários do tarifário 1	Geral
134	1	14	*Daily billing config contract 2 changed*	Evento registado quando é realizada uma alteração à informação a reter nos fechos diários do tarifário 2	Geral

Nº Evento	Grupo de Eventos	Subgrupo de Eventos	Nome do Evento	Descrição do Evento	Aplicação
135	1	14	*Threshold for neutral loss or overvoltage with consumption detection changed*	Alteração do valor para a determinação de uma perda de neutro (Δ_{PN}) ou uma sobretensão com importação de energia ou marcha em vazio	EMI
136	1	14	*Threshold for neutral recovery or overvoltage with production detection changed*	Alteração do valor para a determinação de um restabelecimento de neutro (Δ_{RN}) ou de uma sobretensão com exportação de energia (Δ_{EP})	EMI
137	1	14	*Time threshold for neutral loss/overvoltage detection changed*	Alteração do limite temporal para ser considerada uma perda de neutro (T_{PN}) ou sobretensão (T_{MS})	EMI
138	1	14	*Time threshold for neutral recovery changed*	Alteração do limite temporal para ser considerado o restabelecimento de neutro (T_{RN})	EMI
139	1	14	*Time threshold for monitoring of overvoltage recovery changed*	Alteração do limite temporal para ser considerado o restabelecimento da sobretensão (T_{MRS})	EMI
140	1	14	*Time threshold for timed manual connection changed*	Alteração do tempo de rearme manual temporizado (T_{RMT})	EMI
141	1	14	*Overvoltage monitoring disabled*	Evento registado quando é desativada a função de monitorização de sobretensões	EMI
142	1	14	*Overvoltage monitoring enabled without ICP triggering*	Evento registado quando é ativada a função de monitorização de sobretensões com as transições do ICP desativadas	EMI
143	1	14	*Overvoltage monitoring enabled with ICP triggering*	Evento registado quando é ativada a função de monitorização de sobretensões com as transições do ICP ativadas	EMI
144	1	14	*Timed manual connection enabled*	Evento registado quando é ativado o rearme manual temporizado (alteração de 0 para outro valor diferente)	EMI

Nº Evento	Grupo de Eventos	Subgrupo de Eventos	Nome do Evento	Descrição do Evento	Aplicação
145	1	14	*Timed manual connection disabled*	Evento registado quando é desativado o rearme manual temporizado (valor igual a 0)	EMI
146-254	1		*Reserved for future use*	Eventos reservados para utilização futura	-
1	2	20	*Manual button connection*	Evento registado quando se verifica o rearme do ICP por atuação no botão	EMI
2	2	20	*Remote disconnection*	Evento registado quando verificada a abertura do ICP por comando remoto	EMI
3	2	20	*Remote connection*	Evento registado quando verificado o fecho do ICP por comando remoto	EMI
4	2	20	*Imported power control disconnection*	Evento registado quando se verifica a abertura do ICP por excesso de potência importada	EMI
5	2	20	*Manual DCP connection*	Evento registado quando se verifica o rearme do ICP por variação de impedância no circuito de saída do equipamento (por ação sobre o Disjuntor de Controlo de Potência)	EMI
6	2	20	*ICP no trip current exceeded*	Evento registado quando, esgotado o tempo de disparo (abertura) do ICP, a corrente atual ultrapassa a corrente estipulada de corte e/ou o poder de corte é insuficiente, e deixa de ser possível a interrupção do fornecimento	EMI
7	2	20	*Disconnect enabled*	Evento registado quando o modo de controlo do ICP é alterado do modo 0 para um outro diferente (transições permitidas)	EMI
8	2	20	*Disconnect disabled*	Evento registado quando o modo de controlo do ICP é colocado no modo 0 (transições não permitidas)	EMI
9	2	20	*Residual power disconnection*	Evento registado quando se verifica a abertura do ICP por ultrapassagem do valor residual de potência, num período de gestão da procura não crítico	EMI
10	2	20	*Not used*	Não utilizado	-
11	2	20	*Residual power connection*	Evento registado quando se verifica o rearme do ICP após a ultrapassagem do valor residual de potência, num período de gestão da procura não crítico	EMI
12	2	20	*Critical demand period disconnection*	Evento registado quando se verifica a abertura do ICP por ultrapassagem do valor limite de potência, num período de gestão da procura crítico	EMI
13	2	20	*Critical demand period connection*	Evento registado quando se verifica o fecho do ICP após a ultrapassagem do valor limite de potência, num período de gestão da procura crítico	EMI
14	2	20	*ICP control inhibition enabled*	Evento registado quando é inibida a função de controlo de potência do ICP	EMI

Nº Evento	Grupo de Eventos	Subgrupo de Eventos	Nome do Evento	Descrição do Evento	Aplicação
15	2	20	*ICP control inhibition disabled*	Evento registado quando é permitida a função de controlo de potência do ICP	EMI
16	2	20	*ICP control mode changed*	Evento registado quando é alterado o modo de controlo do ICP	EMI
17	2	20	*ICP export power control enabled*	Evento registado quando é ativado o controlo de potência exportada no ICP	EMI
18	2	20	*ICP export power control disabled*	Evento registado quando é desativado o controlo de potência exportada no ICP	EMI
19	2	20	*Exported power control disconnection*	Evento registado quando se verifica a abertura do ICP por excesso de potência exportada	EMI
20	2	20	*Overvoltage disconnection*	Evento registado quando se verifica a abertura do ICP por existência de uma sobretensão na rede	EMI
21	2	20	*Timed manual connection*	Evento registado quando se verifica o rearme do ICP depois da existência de uma sobretensão na rede, após o período de restabelecimento da sobretensão e tendo sido atingido o tempo de rearme manual temporizado	EMI
22-254	2		*Reserved for future use*	Eventos reservados para utilização futura	-
1	3	31	*Under limit voltage (phases average)*	Evento registado quando, num período ou no primeiro de uma sequência de períodos de T minutos: -Monofásico: o valor médio da tensão de fornecimento se situa abaixo do limite -Δ% de Un -Trifásico: a média dos valores médios das tensões de fornecimento das três fases se situa abaixo do limite -Δ% de Un	Geral
2	3	31	*Under limit voltage L1*	Evento registado quando, num período ou no primeiro de uma sequência de períodos de T minutos, o valor médio da tensão de fornecimento da fase L1 se situa abaixo do limite -Δ% de Un	Trifásico
3	3	31	*Under limit voltage L2*	Evento registado quando, num período ou no primeiro de uma sequência de períodos de T minutos, o valor médio da tensão de fornecimento da fase L2 se situa abaixo do limite -Δ% de Un	Trifásico
4	3	31	*Under limit voltage L3*	Evento registado quando, num período ou no primeiro de uma sequência de períodos de T minutos, o valor médio da tensão de fornecimento da fase L3 se situa abaixo do limite -Δ% de Un	Trifásico

Nº Evento	Grupo de Eventos	Subgrupo de Eventos	Nome do Evento	Descrição do Evento	Aplicação
5	3	31	*Over limit voltage (phases average)*	Evento registado quando, num período ou no primeiro de uma sequência de períodos de T minutos: -Monofásico: o valor médio da tensão de fornecimento se situa acima do limite +Δ% de Un -Trifásico: a média dos valores médios das tensões de fornecimento das três fases se situa acima do limite +Δ% de Un	Geral
6	3	31	*Over limit voltage L1*	Evento registado quando, num período ou no primeiro de uma sequência de períodos de T minutos, o valor médio da tensão de fornecimento da fase L1 se situa acima do limite +Δ% de Un	Trifásico
7	3	31	*Over limit voltage L2*	Evento registado quando, num período ou no primeiro de uma sequência de períodos de T minutos, o valor médio da tensão de fornecimento da fase L2 se situa acima do limite +Δ% de Un	Trifásico
8	3	31	*Over limit voltage L3*	Evento registado quando, num período ou no primeiro de uma sequência de períodos de T minutos, o valor médio da tensão de fornecimento da fase L3 se situa acima do limite +Δ% de Un	Trifásico
9	3	31	*Long power failure*	Evento registado no início de uma: -Monofásico: interrupção longa de fornecimento (após T minutos sem alimentação) -Trifásico: interrupção longa de fornecimento em todas as três fases (após T minutos sem alimentação)	Geral
10	3	31	*Long power failure L1*	Evento registado no início de uma interrupção longa de fornecimento na fase L1 (após T minutos sem alimentação)	Trifásico
11	3	31	*Long power failure L2*	Evento registado no início de uma interrupção longa de fornecimento na fase L2 (após T minutos sem alimentação)	Trifásico
12	3	31	*Long power failure L3*	Evento registado no início de uma interrupção longa de fornecimento na fase L3 (após T minutos sem alimentação)	Trifásico
13	3	32	*QoS – Under limit voltage (phases average)*	Evento registado quando, após um ou mais períodos de T minutos: -Monofásico: o valor médio da tensão de fornecimento num período se recompõe acima do limite -Δ% de Un -Trifásico: a média dos valores médios das tensões de fornecimento das três fases num período se recompõe acima do limite -Δ% de Un	Geral

Nº Evento	Grupo de Eventos	Subgrupo de Eventos	Nome do Evento	Descrição do Evento	Aplicação
14	3	32	*QoS – Under limit voltage L1*	Evento registado quando o valor médio da tensão de fornecimento da fase L1 se recompõe dentro da gama ±Δ% de Un após um ou mais períodos de T minutos abaixo do limite -Δ% de Un	Trifásico
15	3	32	*QoS – Under limit voltage L2*	Evento registado quando o valor médio da tensão de fornecimento da fase L2 se recompõe dentro da gama ±Δ% de Un após um ou mais períodos de T minutos abaixo do limite -Δ% de Un	Trifásico
16	3	32	*QoS – Under limit voltage L3*	Evento registado quando o valor médio da tensão de fornecimento da fase L3 se recompõe dentro da gama ±Δ% de Un após um ou mais períodos de T minutos abaixo do limite -Δ% de Un	Trifásico
17	3	32	*QoS – Over limit voltage (phases average)*	Evento registado quando, após um ou mais períodos de T minutos: -Monofásico: o valor médio da tensão de fornecimento num período se recompõe abaixo do limite +Δ% de Un -Trifásico: a média dos valores médios das tensões de fornecimento das três fases num período se recompõe abaixo do limite +Δ% de Un	Geral
18	3	32	*QoS – Over limit voltage L1*	Evento registado quando o valor médio da tensão de fornecimento da fase L1 se recompõe dentro da gama ±Δ% de Un após um ou mais períodos de T minutos acima do limite +Δ% de Un	Trifásico
19	3	32	*QoS – Over limit voltage L2*	Evento registado quando o valor médio da tensão de fornecimento da fase L2 se recompõe dentro da gama ±Δ% de Un após um ou mais períodos de T minutos acima do limite +Δ% de Un	Trifásico
20	3	32	*QoS – Over limit voltage L3*	Evento registado quando o valor médio da tensão de fornecimento da fase L3 se recompõe dentro da gama ±Δ% de Un após um ou mais períodos de T minutos acima do limite +Δ% de Un	Trifásico
21	3	32	*QoS – Long power failure*	Evento registado no fim de uma: -Monofásico: interrupção longa de fornecimento -Trifásico: interrupção longa de fornecimento, quando é restabelecida pelo menos uma das fases	Geral
22	3	32	*QoS – Long power failure L1*	Evento registado no fim de uma interrupção longa de fornecimento na fase L1	Trifásico

Nº Evento	Grupo de Eventos	Subgrupo de Eventos	Nome do Evento	Descrição do Evento	Aplicação
23	3	32	*QoS – Long power failure L2*	Evento registado no fim de uma interrupção longa de fornecimento na fase L2	Trifásico
24	3	32	*QoS – Long power failure L3*	Evento registado no fim de uma interrupção longa de fornecimento na fase L3	Trifásico
25	3	31	*Overvoltage with consumption begin*	Evento registado quando é detectada uma sobretensão (tensão de qualquer fase acima de Ur + Δ% durante um período de T_{MS} segundos) e existe importação de energia ou marcha em vazio	Geral
26	3	31	*Overvoltage with production begin*	Evento registado quando é detectada uma sobretensão (tensão de qualquer fase acima de Ur + Δ% durante um período de T_{MS} segundos) e existe exportação de energia	Geral
27	3	32	*QoS – Overvoltage with consumption end*	Evento registado quando a sobretensão é regularizada (tensão de todas as fases abaixo de Ur + Δ_{EP}% durante um período de T_{MRS} segundos) e existia importação de energia ou marcha em vazio no seu início	Geral
28	3	32	*QoS – Overvoltage with production end*	Evento registado quando a sobretensão é regularizada (tensão de todas as fases abaixo de Ur + Δ_{EP}% durante um período de T_{MRS} segundos) e existia exportação de energia no seu início	Geral
29-254	3		*Reserved for future use*	Eventos reservados para utilização futura	-
1	4	40	*Cover open*	O evento assinala a abertura da tampa de bornes	Geral
2	4	40	*Cover close*	O evento assinala o fecho da tampa de bornes	Geral
3	4	40	*Strong MF presence*	O evento assinala a deteção de um campo magnético superior ao valor aceitável (padrão)	Geral
4	4	40	*Strong MF absence*	O evento assinala o desaparecimento de um campo magnético superior ao valor aceitável (padrão)	Geral
5	4	40	*Current without voltage*	O evento é registado quando o equipamento deteta uma corrente mas não deteta tensão	Trifásico
6	4	40	*Communication Fraud detection*	O evento é registado quando é tentada uma comunicação com o equipamento com uma palavra-chave errada. Aplicável para versões de *firmware* base.	Geral
7	4	40	*Voltage in the output terminals with ICP disconnected period begin*	Evento registado no início de um período onde é detetada tensão nos terminais de saída do equipamento com o ICP aberto	EMI

Nº Evento	Grupo de Eventos	Subgrupo de Eventos	Nome do Evento	Descrição do Evento	Aplicação
8	4	40	*Voltage in the output terminals with ICP disconnected period end*	Evento registado no fim de um período onde foi detetada tensão nos terminais de saída do equipamento com o ICP aberto	EMI
9	4	40	*Casing open*	O evento assinala a abertura do invólucro do equipamento	Geral
10	4	40	*Casing close*	O evento assinala o fecho do invólucro do equipamento	Geral
11	4	40	*Unbalance current period begin*	Evento registado no início de um período onde é detetado um desequilíbrio na soma vetorial das correntes face ao neutro	Geral
12	4	40	*Unbalance current period end*	Evento registado no fim de um período onde foi detetado um desequilíbrio na soma vetorial das correntes face ao neutro	Geral
13-254	4	40	*Reserved for future use*	Eventos reservados para utilização futura	-
1	5	50	*Not used*	Não utilizado	-
2	5	50	*Reception order: subscribed power % decrease critical demand period*	Receção de ordem de início de período crítico de gestão da procura, por indicação da percentagem de redução sobre a potência contratada	EMI
3	5	50	*Reception order: absolute value critical demand period*	Receção de ordem de início de período crítico de gestão da procura, por indicação do valor absoluto da potência	EMI
4	5	50	*Reception order: residual power no critical demand period*	Receção de ordem de início de período não crítico de gestão da procura	EMI
5-12	5	50	*Not used*	Não utilizado	-
13	5	50	*Residual power changed*	Alteração do valor da potência residual	EMI
14	5	50	*Residual power no critical demand period begin*	Início de período de potência residual (período de gestão da procura não crítico)	EMI
15	5	50	*Residual power no critical demand period end*	Fim de período de potência residual (período de gestão da procura não crítico)	EMI

Nº Evento	Grupo de Eventos	Subgrupo de Eventos	Nome do Evento	Descrição do Evento	Aplicação
16	5	50	*Subscribed power % decrease critical demand period begin*	Início de período de redução de potência em % da potência contratada (período de gestão da procura crítico)	EMI
17	5	50	*Subscribed power % decrease critical demand period end*	Fim de período de redução de potência em % da potência contratada (período de gestão da procura crítico)	EMI
18	5	50	*Absolute value critical demand period begin*	Início de período de redução para o valor absoluto indicado (período de gestão da procura crítico)	EMI
19	5	50	*Absolute value critical demand period end*	Fim de período de redução para o valor absoluto indicado (período de gestão da procura crítico)	EMI
20	5	50	*Not used*	Não utilizado	-
21	5	50	*Power limit changed during active demand period*	Alteração do valor da potência limite durante o período de gestão da procura	EMI
22-254	5	50	*Reserved for future use*	Eventos reservados para utilização futura	-
1	6	60	*Remote port communication start*	Regista o início de uma comunicação remota	Geral
2	6	60	*Remote port communication end*	Regista o fim de uma comunicação remota	Geral
3	6	60	*Optical port communication start*	Regista o início de uma comunicação local pela porta ótica	Geral
4	6	60	*Optical port communication end*	Regista o fim de uma comunicação local pela porta ótica	Geral
5	6	60	*RS485 (HAN/Modbus) port communication start*	Regista o início de uma comunicação local pela interface RS485 (HAN/Modbus)	EMI
6	6	60	*RS485 (HAN/Modbus) port communication end*	Regista o fim de uma comunicação local pela interface RS485 (HAN/Modbus)	EMI
7	6	60	*RS485 (HDLC/DLMS) port communication start*	Registra o início de uma comunicação remota pela interface RS485 (HDLC/DLMS)	Geral

Nº Evento	Grupo de Eventos	Subgrupo de Eventos	Nome do Evento	Descrição do Evento	Aplicação
8	6	60	*RS485 (HDLC/DLMS) port communication end*	Registra o início de uma comunicação remota pela interface RS485 (HDLC/DLMS)	Geral
9-254	6	60	*Reserved for future use*	Eventos reservados para utilização futura	-
1	7	70	*IP_connected – output_relay_1*	Transição da 1ª saída de IP para o estado ligado	EMI IP
2	7	70	*IP_disconnected – output_relay_1*	Transição da 1ª saída de IP para o estado desligado	EMI IP
3	7	70	*IP operating mode changed to 0 – output_relay_1*	Alteração do modo de funcionamento do controlo da 1ª saída de IP para o estado "0" – IP desligada em modo permanente	EMI IP
4	7	70	*IP operating mode changed to 1 – output_relay_1*	Alteração do modo de funcionamento do controlo da 1ª saída de IP para o estado "1" – IP ligada em modo permanente	EMI IP
5	7	70	*IP operating mode changed to 2 – output_relay_1*	Alteração do modo de funcionamento do controlo da 1ª saída de IP para o estado "2" – Relógio astronómico	EMI IP
6	7	70	*IP operating mode changed to 3 – output_relay_1*	Alteração do modo de funcionamento do controlo da 1ª saída de IP para o estado "3" – Tabela de comutação	EMI IP
7	7	70	*IP time switching table changed – output_relay_1*	Alteração da tabela de comutação do estado da 1ª saída de IP	EMI IP
8	7	70	*IP offsets table changed – output_relay_1*	Alteração da tabela de *offsets* para o controlo da 1ª saída de IP	EMI IP
9	7	70	*GPS coordinates changed*	Alteração das coordenadas GPS, utilizadas como referência para o relógio astronómico	EMI IP
10	7	70	*No consumption when IP is connected*	Detetada ausência de potência de consumo no circuito de IP, quando a IP está no estado ligado	EMI IP
11	7	70	*Over consumption when IP is disconnected*	Detetada potência de consumo no circuito de IP superior ao valor definido como limite, quando a IP está no estado desligado	EMI IP
12	7	70	*IP consumption over maximum threshold*	Variação de potência de consumo no circuito de IP acima do limite máximo, quando a IP está no estado ligado	EMI IP

Nº Evento	Grupo de Eventos	Subgrupo de Eventos	Nome do Evento	Descrição do Evento	Aplicação
13	7	70	*IP consumption under minimum threshold*	Variação de potência de consumo no circuito de IP abaixo do limite mínimo, quando a IP está no estado ligado	EMI IP
14	7	70	*Direct command to connect IP – output_relay_1*	Comando direto para alteração da 1ª saída de IP para o estado ligado	EMI IP
15	7	70	*Direct command to disconnect IP – output_relay_1*	Comando direto para alteração da 1ª saída de IP para o estado desligado	EMI IP
16	7	70	*IP_connected – output_relay_2*	Transição da 2ª saída de IP para o estado ligado	EMI IP
17	7	70	*IP_disconnected – output_relay_2*	Transição da 2ª saída de IP para o estado desligado	EMI IP
18	7	70	*IP operating mode changed to 0 – output_relay_2*	Alteração do modo de funcionamento do controlo da 2ªsaída de IP para o estado "0" – IP desligada em modo permanente	EMI IP
19	7	70	*IP operating mode changed to 1 – output_relay_2*	Alteração do modo de funcionamento do controlo da 2ª saída de IP para o estado "1" – IP ligada em modo permanente	EMI IP
20	7	70	*IP operating mode changed to 2 – output_relay_2*	Alteração do modo de funcionamento do controlo da 2ª saída de IP para o estado "2" – Relógio astronómico	EMI IP
21	7	70	*IP operating mode changed to 3 – output_relay_2*	Alteração do modo de funcionamento do controlo da 2ª saída de IP para o estado "3" – Tabela de comutação	EMI IP
22	7	70	*IP time switching table changed – output_relay_2*	Alteração da tabela de comutação do estado da 2ª saída de IP	EMI IP
23	7	70	*IP offsets table changed – output_relay_2*	Alteração da tabela de *offsets* para o controlo da 2ªsaída de IP	EMI IP
24	7	70	*Direct command to connect IP – output_relay_2*	Comando direto para alteração da 2ª saída de IP para o estado ligado	EMI IP
25	7	70	*Direct command to disconnect IP – output_relay_2*	Comando direto para alteração da 2ª saída de IP para o estado desligado	EMI IP

Nº Evento	Grupo de Eventos	Subgrupo de Eventos	Nome do Evento	Descrição do Evento	Aplicação
26	7	70	*IP operating mode changed to 4 – output_relay_1*	Alteração do modo de funcionamento do controlo da 1ª saída de IP para o estado "4" – Combinado Relógio+Tabela	EMI IP
27	7	70	*IP operating mode changed to 4 – output_relay_2*	Alteração do modo de funcionamento do controlo da 2ª saída de IP para o estado "4" – Combinado Relógio+Tabela	EMI IP
28-255	7	70	*Reserved for future use*	Reservado para uso futuro	-

5.3.2.2 Registos de Eventos

O equipamento dispõe de vários registos de eventos, sendo que cada registo tem uma estrutura distinta.

5.3.2.2.1 *Standard* [0-0:99.98.0.255] (ver secção 5.5.8 do presente documento)

Contém todos os eventos não registados num registo específico. Os eventos de erro interno crítico são registados quando se verificam um ou mais dos seguintes erros: erro na memória de programa (*program memory error*), erro na memória RAM (*RAM memory error*), erro na memória não volátil (*NV memory error*), erro de *Watchdog* (*Watchdog error*), erro na componente metrológica (*measurement system error*).

Estrutura: {*Timestamp*, Código do evento}.
Tamanho mínimo: 100 entradas.

5.3.2.2.2 Potência contratada [0-0:99.98.3.255] (ver secção 5.5.8 do presente documento)

Contém todos os eventos relacionados com alterações contratuais.

Estrutura: {*Timestamp*, Código do evento, nova potência contratada, potência contratada anterior}.
Tamanho mínimo: 15 entradas.

5.3.2.2.3 *Firmware* [0-0:99.98.4.255] (ver secção 5.5.8 do presente documento)

Contém todos os eventos relacionados com alterações de *firmware*.

Estrutura: {*Timestamp*, Código do evento, versão atual do *firmware* metrológico, versão atual do *firmware* aplicacional, versão atual do *firmware* do módulo de comunicações, versão anterior do *firmware* aplicacional}.
Tamanho mínimo: 15 entradas.

5.3.2.2.4 Sincronização [0-0:99.98.8.255] (ver secção 5.5.8 do presente documento)

Contém todos os eventos relacionados com a sincronização do relógio.

Estrutura: {*Timestamp*, Código do evento, *Timestamp* (hora anterior do relógio)}.
Tamanho mínimo: 15 entradas.

5.3.2.2.5 Configuração [0-0:99.98.10.255] (ver secção 5.5.8 do presente documento)

Contém todos os eventos relacionados com alterações de configuração do equipamento.

Estrutura: {*Timestamp*, Código do evento}.
Tamanho mínimo: 20 entradas.

5.3.2.2.6 ICP [0-0:99.98.2.255] (ver secção 5.5.9 do presente documento)

Contém todos os eventos relacionados com o ICP.

Estrutura: {*Timestamp*, Código do evento, estado anterior do objeto *Disconnect control*, estado atual do objeto *Disconnect control,* potência limite atual, estado de inibição do controlo de potência do ICP}.
Tamanho mínimo: 20 entradas.

5.3.2.2.7 Falha de Energia [0-0:99.98.5.255] (ver secção 5.5.8 do presente documento)

Contém todos os eventos (de inicio) relacionados com falhas de energia, exemplo, tensão média num período abaixo ou acima de um determinado patamar. Estes eventos indiciam o início de uma eventual falha de qualidade de serviço, que caso se detete, será registada no *log* de Qualidade de Serviço.

Estrutura: {*Timestamp*, Código do evento}.
Tamanho mínimo: 15 entradas.

5.3.2.2.8 Qualidade de serviço [0-0:99.98.9.255] (ver secção 5.5.8 do presente documento)

Contém todos os eventos (de fim) relacionados com a Qualidade de Serviço, exemplo, tensão média num período abaixo ou acima de um determinado patamar.

Estrutura: {*Timestamp*, Código do evento, *Timestamp* de inicio do evento}.
Tamanho mínimo: 15 entradas.

5.3.2.2.9 Antifraude [0-0:99.98.1.255] (ver 5.5.8 do presente documento)

Contém todos os eventos relacionados com tentativas de fraude.

Estrutura: {*Timestamp*, Código do evento}.
Tamanho mínimo: 10 entradas.

5.3.2.2.10 Gestão da Procura [0-0:99.98.6.255] (ver 5.5.8 do presente documento)

Contém todos os eventos relacionados com a gestão da procura.

Estrutura: {*Timestamp*, Código do evento, potência limite atual}.
Tamanho mínimo: 15 entradas.

5.3.2.2.11 Ocorrência elevada [0-0:99.98.7.255] (ver 5.5.8 do presente documento)

Contém todos os eventos relacionados com comunicação local e remota.

Estrutura: {*Timestamp*, Código do evento}.
Tamanho mínimo: 100 entradas

5.3.2.2.12 Iluminação Pública [0-0:99.98.11.255] (ver 5.5.8 do presente documento)

Contém todos os eventos relacionados com comunicação local e remota.

Estrutura: {*Timestamp*, Código do evento}.
Tamanho mínimo: 50 entradas.

5.3.2.2.13 Operações de segurança com sucesso [0-0:99.98.12.255] (ver 5.5.8 do presente documento)

Contém todos os eventos relacionados com as operações de segurança realizadas com sucesso.

Estrutura: {*Timestamp*, Código do evento, *Client System Title*}.
Tamanho mínimo: 100 entradas.

5.3.2.2.14 Operações de segurança falhadas [0-0:99.98.13.255] (ver 5.5.8 do presente documento)

Contém todos os eventos relacionados com as operações de segurança falhadas.

Estrutura: {*Timestamp*, Código do evento, *Client System Title*}.
Tamanho mínimo: 30 entradas.

5.3.2.3 Tratamento de Erros

Um conjunto pré-definido de eventos ativam registos de erros. O registo de erros deve poder ser acedido e visualizado a qualquer momento.

Os erros devem ser apagados local ou remotamente (tendo sempre em conta as permissões de acesso das associações cliente-servidor que forem estabelecidas). Estes erros devem ser registados num dos Registos de Eventos.

A tabela abaixo apresenta a lista de erros e sua posição na estrutura.

Reservado								**Reservado**								**Erros Críticos**								**Erros Não Críticos**							
Byte 4								*Byte* 3								*Byte* 2								*Byte* 1							
7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0
not used	*not used*	*not used*	*not used*	*not used*	*not used*	*not used*	*not used*	*not used*	*not used*	*not used*	*not used*	*not used*	*not used*	*not used*	*not used*	*not used*	*not used*	*not used*	*Watchdog error*	*Measurement system error*	*NV Memory error*	*RAM error*	*Program memory error*	*not used*	*not used*	*not used*	*not used*	*not used*	*not used*	*Low battery*	*Clock invalid*

Tabela 1 - Códigos de Erros

5.3.2.4 Tratamento de Alarmes

Podem ser definidos os eventos que devem ser tratados como alarmes através de um filtro (*Alarm filter*). Se um destes eventos ocorre, o registo correspondente é ativado. Este deverá ser apagado quando o evento que lhe deu origem se extinguir, ou por ação externa ao equipamento (comando local ou remoto).

A tabela abaixo apresenta a lista de alarmes e a sua posição na estrutura.

Reservado								**Reservado**								**Alarmes Críticos**								**Alarmes Não Críticos**							
Byte 4								*Byte* 3								*Byte* 2								*Byte* 1							
7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0
not used	*not used*	*not used*	*not used*	*not used*	*not used*	*not used*	*not used*	*not used*	*not used*	*not used*	*not used*	*not used*	*not used*	*not used*	*not used*	Alarme de ICP aberto por sobretensão	Alarme de perda de neutro	Alarme de falha de fase	Alarme de sequência de fases invertida	*not used*	*not used*	Consumo em circuito de IP desligado	Ausência de consumo no circuito IP	*not used*	*not used*	Alarme de segurança	Alarme de tensão na saída com o ICP aberto	Alarme de variação de tensão	Alarme antifraude	Alarme de falha de pilha	*not used*

Tabela 2 - Códigos de Alarmes

Um filtro de alarmes [0-0:97.98.10.255] (ver secção 5.5.7 do presente documento) pode ser configurado para mascarar os alarmes que não são pretendidos.

5.3.2.5 Código do estado do Diagrama de Cargas

Associado a cada entrada do diagrama de carga deve estar associado um código de estado, tal como referido no requisito DC_04 do documento DEF--C44-506/N. O código tem o tamanho de 1 *byte* e é apresentado no formato hexadecimal. A tabela seguinte apresenta o detalhe de cada *bit* do código de estado associado ao diagrama de cargas.

Código de estado do diagrama de cargas							
Byte 1							
7	6	5	4	3	2	1	0
LI	**AR**	**OF**	**SR**	**AC**	**RD**	**FA**	**RA**
Leitura incompleta ou inexistente	Acerto do RTC	*Overflow*	Sincronização do RTC	Alteração da configuração do equipamento	*Reset* do diagrama de cargas	Falha da alimentação (*Power Down*)	Restabelecimento da alimentação (*Power Up*)

Tabela 3 – *Bits* de *status* associados ao diagrama de cargas

5.4 Objetos dos Perfis de Comunicação e Interfaces

5.4.1 Interface ótica

#	Object/Attribute	Class	Type	Value	Meaning	Comments	Access Rights - Base FW (M/R/F/P)	Access Rights - Secured FW (SG/SB/P)
	IEC HDLC setup - Optical port	23		0.0.22.0.0.255				
1	logical_name		octet-string[6]	0000160000FF			R-/R-/--/--	R-/--/--
2	comm_speed		enum	5	9600 baud		RW/R-/--/--	RW/--/--
3	window_size_transmit		unsigned	1			R-/R-/--/--	R-/--/--
4	window_size_receive		unsigned	1			R-/R-/--/--	R-/--/--
5	max_info_field_lenght_transmit		unsigned	128 minimum			R-/R-/--/--	R-/--/--
6	max_info_field_lenght_receive		unsigned	128 minimum			R-/R-/--/--	R-/--/--
7	inter_octet_time_out		long-unsigned	150	[ms]		R-/R-/--/--	R-/--/--
8	inactivity_time_out		long-unsigned	180	[s]		RW/R-/--/--	RW/--/--
9	device_address		long-unsigned	0x0010			RW/R-/--/--	RW/--/--

5.4.2 Interface PLC PRIME

#	Object/Attribute	Class	Type	Value	Meaning	Comments	Access Rights - Base FW (M/R/F/P)	Access Rights - Secured FW (SG/SB/P)
	61334-4-32 LLC SSCS setup	**80**		**0.0.28.0.0.255**				
1	logical_name		octet-string[6]	00001C0000FF			R-/R-/--/--	R-/--/--
2	service_node_address		long-unsigned				R-/R-/--/--	R-/--/--
3	base_node_address		long-unsigned				R-/R-/--/--	R-/--/--
1	reset						-W/--/--/--	-W/--/--
	PRIME NB OFDM PLC Physical layer counters	**81**		**0.0.28.1.0.255**				
1	logical_name		octet-string[6]	00001C0100FF			R-/R-/--/--	R-/--/--
2	phy_stats_crc_incorrect_count		long-unsigned				R-/R-/--/--	R-/--/--
3	phy_stats_crc_fail_count		long-unsigned				R-/R-/--/--	R-/--/--
4	phy_stats_tx_drop_count		long-unsigned				R-/R-/--/--	R-/--/--
5	phy_stats_rx_drop_count		long-unsigned				R-/R-/--/--	R-/--/--
1	reset						-W/--/--/--	-W/--/--
	PRIME NB OFDM PLC MAC setup	**82**		**0.0.28.2.0.255**				
1	logical_name		octet-string[6]	00001C0200FF			R-/R-/--/--	R-/--/--
2	mac_min_switch_search_time		unsigned				R-/R-/--/--	R-/--/--
3	mac_max_promotion_pdu		unsigned				R-/R-/--/--	R-/--/--
4	mac_promotion_pdu_tx_period		unsigned				R-/R-/--/--	R-/--/--
5	mac_beacons_per_frame		unsigned				R-/R-/--/--	R-/--/--
6	mac_scp_max_tx_attempts		unsigned				R-/R-/--/--	R-/--/--
7	mac_ctl_re_tx_timer		unsigned				R-/R-/--/--	R-/--/--
8	mac_max_ctl_re_tx		unsigned				R-/R-/--/--	R-/--/--
	PRIME NB OFDM PLC MAC functional parameters	**83**		**0.0.28.3.0.255**				
1	logical_name		octet-string[6]	00001C0300FF			R-/R-/--/--	R-/--/--
2	mac_LNID		long				R-/R-/--/--	R-/--/--

#	Object/Attribute	Class	Type	Value	Meaning	Comments	Access Rights - Base FW (M/R/F/P)	Access Rights - Secured FW (SG/SB/P)
3	mac_LSID		unsigned				R-/R-/--/--	R-/--/--
4	mac_SID		unsigned				R-/R-/--/--	R-/--/--
5	mac_SNA		octetstring				R-/R-/--/--	R-/--/--
6	mac_state		enum				R-/R-/--/--	R-/--/--
7	mac_scp_length		long				R-/R-/--/--	R-/--/--
8	mac_node_hierarchy_level		unsigned				R-/R-/--/--	R-/--/--
9	mac_beacon_slot_count		unsigned				R-/R-/--/--	R-/--/--
10	mac_beacon_rx_slot		unsigned				R-/R-/--/--	R-/--/--
11	mac_beacon_tx_slot		unsigned				R-/R-/--/--	R-/--/--
12	mac_beacon_rx_frequency		unsigned				R-/R-/--/--	R-/--/--
13	mac_beacon_tx_frequency		unsigned				R-/R-/--/--	R-/--/--
14	mac_capabilities		long-unsigned				R-/R-/--/--	R-/--/--
	PRIME NB OFDM PLC MAC counters	**84**		**0.0.28.4.0.255**				
1	logical_name		octet-string[6]	00001C0400FF			R-/R-/--/--	R-/--/--
2	mac_tx_data_pkt_count		double-long-unsigned				R-/R-/--/--	R-/--/--
3	mac_rx_data_pkt_count		double-long-unsigned				R-/R-/--/--	R-/--/--
4	mac_tx_ctrl_pkt_count		double-long-unsigned				R-/R-/--/--	R-/--/--
5	mac_rx_ctrl_pkt_count		double-long-unsigned				R-/R-/--/--	R-/--/--
6	mac_csma_fail_count		double-long-unsigned				R-/R-/--/--	R-/--/--
7	mac_csma_ch_busy_count		double-long-unsigned				R-/R-/--/--	R-/--/--

#	Object/Attribute	Class	Type	Value	Meaning	Comments	Access Rights - Base FW (M/R/F/P)	Access Rights - Secured FW (SG/SB/P)
1	reset						-W/--/--/--	-W/--/--
	PRIME NB OFDM PLC MAC network administration data	**85**		**0.0.28.5.0.255**				
1	logical_name		octet-string[6]	00001C0500FF			R-/R-/--/--	R-/--/--

2	mac_list_multicast_entries		array	mac_list_multicast_entries_type ::= array mac_list_multicast_entries_element
				mac_list_multicast_entries_element ::= structure
				{
				mcast_entry_LCID: integer, -- LCID of multicast group
				mcast_entry_members: long -- number of child nodes
				}
							R-/R-/--/--	R-/--/--

3	mac_list_switch_table		array	mac switch_table ::= array stbl_entry_LSID stbl_entry_LSID ::= long -- SID of attached Switch node			R-/R-/--/--	R-/--/--

4	mac_list_direct_table		array	mac_direct_table ::= array mac_direct_table_element
				mac_direct_table_element ::= structure
				{
				dconn_entry_src_SID: long,
				dconn_entry_src_LNID: long,
				dconn_entry_src_LCID: long,
				dconn_entry_dst_SID: long,
				dconn_entry_dst_LNID: long,
				dconn_entry_dst_LCID: long,
				dconn_entry_DID: octet-string (size 6 bytes)
				}
							R-/R-/--/--	R-/--/--

#	Object/Attribute	Class	Type	Value	Meaning	Comments	Access Rights - Base FW (M/R/F/P)	Access Rights - Secured FW (SG/SB/P)

5	mac_list_available_switches		array	mac_list_available_switches ::= array mac_list_available_switches_element
				mac_list_available_switches_element ::= structure
				{
				slist_entry_SNA: octet-string (size 6 bytes),
				slist_entry_LSID: long,
				slist_entry_level: integer,
				slist_entry_rx_level: integer,
				slist_entry_rx_snr: integer
				}
							R-/R-/--/--	R-/--/--

6	mac_list_phy_comm		array	mac_list_phy_comm ::= array phy_comm_element
				phy_comm_element ::= structure
				{
				phy_Comm_EUI: octet-string,
				phy_Comm_Tx_Pwr: integer,
				phy_Comm_Tx_Cod: integer,
				phy_Comm_Rx_Cod: integer,
				phy_Comm_Rx_Lvl: integer,
				phy_Comm_SNR: integer,
				phy_Comm_Tx_Pwr_Mod: integer,
				phy_Comm_Tx_Cod_Mod: integer,
				phy_Comm_Rx_Cod_Mod: integer
				}
							R-/R-/--/--	R-/--/--

1	reset						-W/--/--/--	-W/--/--
	PRIME NB OFDM PLC MAC address setup	**43**		**0.0.28.6.0.255**				
1	logical_name		octet-string[6]	00001C0600FF			R-/R-/--/--	R-/--/--
2	MAC_address		octet-string[6]				R-/R-/--/--	R-/--/--
	PRIME NB OFDM PLC Application identification	**86**		**0.0.28.7.0.255**				
1	logical_name		octet-string[6]	00001C0700FF			R-/R-/--/--	R-/--/--
2	firmware_version		octet-string				R-/R-/--/--	R-/--/--
3	vendor_Id		long-unsigned				R-/R-/--/--	R-/--/--
4	product_Id		long-unsigned				R-/R-/--/--	R-/--/--

5.4.3 Interface série RS485

#	Object/Attribute	Class	Type	Value	Meaning	Comments	Access Rights - Base FW (M/R/F/P)	Access Rights - Secured FW (SG/SB/P)
	IEC HDLC setup - Serial port	23		0.1.22.0.0.255				
1	logical_name		octet-string[6]	0001160000FF			R-/R-/--/--	R-/--/--
2	comm_speed		enum	5	9600 baud		RW/R-/--/--	RW/--/--
3	window_size_transmit		unsigned	1			R-/R-/--/--	R-/--/--
4	window_size_receive		unsigned	1			R-/R-/--/--	R-/--/--
5	max_info_field_lenght_transmit		unsigned	128 minimum			R-/R-/--/--	R-/--/--
6	max_info_field_lenght_receive		unsigned	128 minimum			R-/R-/--/--	R-/--/--
7	inter_octet_time_out		long-unsigned	150	[ms]		R-/R-/--/--	R-/--/--
8	inactivity_time_out		long-unsigned	180	[s]		RW/R-/--/--	RW/--/--
9	device_address		long-unsigned	0x1SSS	The default value should be dependent of EMI serial number. For a EMI with serial number (00000)AAXXXXXSSS (finished in SSS) the RS485 serial HDLC address should be 0x1SSS. Example: - EMI Serial number: (00000)2012345678 - RS484 serail HDLC address: 0x1678		RW/R-/--/--	RW/--/--

5.5 Objetos Abstratos

5.5.1 Atribuição SAP, Associações LN, *Security Setup*, *Frame counter*, Nome do Dispositivo Lógico (COSEM)

#	Object/Attribute	Class	Type	Value	Meaning	Comments	Access Rights - Base FW (M/R/F/P)	Access Rights - Secured FW (SG/SB/P)
	SAP Assignment	**17**		**0.0.41.0.0.255**				
1	logical_name		octet-string[6]	0000290000FF			R-/R-/--/R-	R-/--/R-
2	SAP_assignment_list		asslist_type		list of logical devices 1 logical device (management logical device) with at least 6 associations: - Management client (server address 1) - Reading Client (server address 2) - Firmware client (server address 3) - Secure General Client (server address 4) - only for Secured FW - Secure Broadcast Client (server address 5) - only for Secured FW - Public client (server address 16)		R-/R-/--/R-	R-/--/R-
	Association LN	**15**		**0.0.40.0.0.255**	**Current Association**			
1	logical_name		octet-string[6]	0000280000FF			R-/R-/R-/R-	R-/R-/R-
2	object_list		object_list_type		list of all objects		R-/R-/R-/R-	R-/R-/R-
3	associated_partners_id		associated_partners_type				R-/R-/R-/R-	R-/R-/R-
4	application_context_name		application_context_name				R-/R-/R-/R-	R-/R-/R-
5	xDLMS_context_info		xDLMS_context_type				R-/R-/R-/R-	R-/R-/R-
6	authentication_mechanism_name		mechanism_name				R-/R-/R-/R-	R-/R-/R-
7	LLS_secret		octet-string[8]				--/--/--/--	-W/--/--
8	association_status		enum				R-/R-/R-/R-	R-/R-/R-
9	security_setup_reference		octet-string				--/--/--/--	R-/R-/R-
	Association LN	**15**		**0.0.40.0.1.255**	**Public Client Association**			
1	logical_name		octet-string[6]	0000280001FF			R-/--/--/R-	R-/--/R-
2	object_list		object_list_type		list of objects		R-/--/--/R-	R-/--/R-

#	Object/Attribute	Class	Type	Value	Meaning	Comments	Access Rights - Base FW (M/R/F/P)	Access Rights - Secured FW (SG/SB/P)
3	associated_partners_id		associated_partners_type		Management logical device (1) – Public client (16)		R-/--/--/R-	R-/--/R-
4	application_context_name		application_context_name				R-/--/--/R-	R-/--/R-
5	xDLMS_context_info		xDLMS_context_type				R-/--/--/R-	R-/--/R-
6	authentication_mechanism_name		mechanism_name				R-/--/--/R-	R-/--/R-
7	LLS_secret		octet-string[8]				--/--/--/--	--/--/--
8	association_status		enum				R-/--/--/R-	R-/--/R-
	Association LN	**15**		**0.0.40.0.2.255**	**Reading Client Association**			
1	logical_name		octet-string[6]	0000280002FF			R-/R-/--/--	R-/--/--
2	object_list		object_list_type		list of objects		R-/R-/--/--	R-/--/--
3	associated_partners_id		associated_partners_type		Management logical device (1) – Reading client (2)		R-/R-/--/--	R-/--/--
4	application_context_name		application_context_name				R-/R-/--/--	R-/--/--
5	xDLMS_context_info		xDLMS_context_type				R-/R-/--/--	R-/--/--
6	authentication_mechanism_name		mechanism_name				R-/R-/--/--	R-/--/--
7	LLS_secret		octet-string[8]				--/--/--/--	-W/--/--
8	association_status		enum				R-/R-/--/--	R-/--/--
	Association LN	**15**		**0.0.40.0.3.255**	**Management Client Association**			
1	logical_name		octet-string[6]	0000280003FF			R-/--/--/--	R-/--/--
2	object_list		object_list_type		list of objects		R-/--/--/--	R-/--/--
								R-/--/--
3	associated_partners_id		associated_partners_type		Management logical device (1) – Management client (1)		R-/--/--/--	R-/--/--
4	application_context_name		application_context_name				R-/--/--/--	R-/--/--
5	xDLMS_context_info		xDLMS_context_type				R-/--/--/--	R-/--/--
6	authentication_mechanism_name		mechanism_name				R-/--/--/--	R-/--/--
7	LLS_secret		octet-string[8]				--/--/--/--	-W/--/--
8	association_status		enum				R-/--/--/--	R-/--/--

#	Object/Attribute	Class	Type	Value	Meaning	Comments	Access Rights - Base FW (M/R/F/P)	Access Rights - Secured FW (SG/SB/P)
	Association LN	**15**		**0.0.40.0.4.255**	**Firmware Update Client Association**			
1	logical_name		octet-string[6]	0000280004FF			--/--/R-/--	R-/--/--
2	object_list		object_list_type		list of objects		--/--/R-/--	R-/--/--
3	associated_partners_id		associated_partners_type		Management logical device (1) – Firmware Update client (3)		--/--/R-/--	R-/--/--
4	application_context_name		application_context_name				--/--/R-/--	R-/--/--
5	xDLMS_context_info		xDLMS_context_type				--/--/R-/--	R-/--/--
6	authentication_mechanism_name		mechanism_name				--/--/R-/--	R-/--/--
7	LLS_secret		octet-string[8]				--/--/--/--	-W/--/--
8	association_status		enum				--/--/R-/--	R-/--/--
	Association LN	**15**		**0.0.40.0.5.255**	**Secure General Client Association**	Only applicable to EMIs with cibersecurity extension FW		
1	logical_name		octet-string[6]	0000280005FF			--/--/--/--	R-/--/--
2	object_list		object_list_type		list of objects		--/--/--/--	R-/--/--
3	associated_partners_id		associated_partners_type		Management logical device (1) – Secure General client (4)		--/--/--/--	R-/--/--
4	application_context_name		application_context_name				--/--/--/--	R-/--/--
5	xDLMS_context_info		xDLMS_context_type				--/--/--/--	R-/--/--
6	authentication_mechanism_name		mechanism_name				--/--/--/--	R-/--/--
7	LLS_secret		octet-string[8]				--/--/--/--	-W/--/--
8	association_status		enum				--/--/--/--	R-/--/--
9	security_setup_reference		octet-string	00002B0005FF			--/--/--/--	R-/--/--
	Association LN	**15**		**0.0.40.0.6.255**	**Secure Broadcast PLC Client Association**	Only applicable to EMIs with cibersecurity extension FW		
1	logical_name		octet-string[6]	0000280006FF			--/--/--/--	--/R-/--
2	object_list		object_list_type		list of objects		--/--/--/--	--/R-/--

#	Object/Attribute	Class	Type	Value	Meaning	Comments	Access Rights - Base FW (M/R/F/P)	Access Rights - Secured FW (SG/SB/P)
3	associated_partners_id		associated_partners_type		Management logical device (1) – Secured General Broadcast PLC client (5)		--/--/--/--	--/R-/--
4	application_context_name		application_context_name				--/--/--/--	--/R-/--
5	xDLMS_context_info		xDLMS_context_type				--/--/--/--	--/R-/--
6	authentication_mechanism_name		mechanism_name				--/--/--/--	--/R-/--
7	LLS_secret		octet-string[8]				--/--/--/--	-W/--/--
8	association_status		enum				--/--/--/--	--/R-/--
9	security_setup_reference		octet-string	00002B0006FF			--/--/--/--	--/R-/--
	Security setup	**64**		**0.0.43.0.5.255**	**Security Setup for Secure General Client Association**	Only applicable to EMIs with cibersecurity extension FW		
1	logical_name		octet-string[6]	00002B0005FF			--/--/--/--	R-/--/R-
2	security_policy		enum	0 or 3	0 - After Reset , 3 - Working state		--/--/--/--	R-/--/R-
3	security_suite		enum	0	AES128 authenticatd encryption and AES128 key wrapping		--/--/--/--	R-/--/--
4	client_system_title		octet-string[8]				--/--/--/--	R-/--/--
5	server_system_title		octet-string[8]				--/--/--/--	R-/--/--
1	security_activate		enum	3	3 - to Force Security	OTHER-REASON returned for any error (bad value, missing keys, etc …)	--/--/--/--	-W/--/--
2	global_key_transfer		Array of Key Data		0 - Global Unicast Key 2 - Authentication Key 3 - Master Key	One Key per action	--/--/--/--	-W/--/--
	Security setup	**64**		**0.0.43.0.6.255**	**Security Setup for Secure Broadcast PLC Client Association**	Only applicable to EMIs with cibersecurity extension FW		
1	logical_name		octet-string[6]	00002B0006FF			--/--/--/--	R-/R-/R-
2	security_policy		enum	0 or 3	0 - After Reset , 3 - Working state		--/--/--/--	R-/R-/R-
3	security_suite		enum	0	AES128 authenticatd encryption and AES128 key wrapping		--/--/--/--	R-/R-/--

#	Object/Attribute	Class	Type	Value	Meaning	Comments	Access Rights - Base FW (M/R/F/P)	Access Rights - Secured FW (SG/SB/P)
4	client_system_title		octet-string[8]				--/--/--/--	R-/R-/--
5	server_system_title		octet-string[8]				--/--/--/--	R-/R-/--
1	security_activate		enum	3	3 - to Force Security	OTHER-REASON returned for any error (bad value, missing keys, etc ...)	--/--/--/--	-W/--/--
2	global_key_transfer		Array of Key Data		0 - Global Unicast Key 1 - Broadcasat Key 2 - Authentication Key	One Key per action	--/--/--/--	-W/--/--
	Frame Counter	**1**		**0.0.43.1.5.255**	**GUEK Frame Counter Secure General Client**	Only applicable to EMIs with cibersecurity extension FW		
1	logical_name		octet-string[6]	00002B0105FF			--/--/--/--	--/--/R-
2	Value		Double-long-unsinged		32 bits Frame Counter GUEK		--/--/--/--	--/--/R-
	Frame Counter	**1**		**0.0.43.1.6.255**	**GUEK Frame Counter Secure Broadcast PLC Client**	Only applicable to EMIs with cibersecurity extension FW		
1	logical_name		octet-string[6]	00002B0106FF			--/--/--/--	--/--/R-
2	Value		Double-long-unsinged		32 bits Frame Counter GUEK Broadcast		--/--/--/--	--/--/R-
	COSEM Logical device name	**1**		**0.0.42.0.0.255**				
1	logical_name		octet-string[6]	00002A0000FF			R-/R-/--/R-	R-/R-/R-
2	Value		octet-string[16]		unique identification of the logical device	Handled by the manufacturer	R-/R-/--/R-	R-/R-/R-

5.5.2 Registos de Identificação

#	Object/Attribute	Class	Type	Value	Meaning	Comments	Access Rights - Base FW (M/R/F/P)	Access Rights - Secured FW (SG/SB/P)
	Device ID 1	**1**		**0.0.96.1.0.255**				
1	logical_name		octet-string[6]	0000600100FF			R-/R-/R-/R-	R-/R-/R-
2	value		octet-string[10]	AAxxxxxxxx	Device Serial Number Values: AA: manufacturing year xxxxxxxx: 8 digits for serial number, to be decided by the manufacturer	Meter serial number.	R-/R-/R-/R-	R-/R-/R-
	Device ID 2	**1**		**0.0.96.1.1.255**				
1	logical_name		octet-string[6]	0000600101FF			R-/R-/R-/R-	R-/R-/R-
2	value		octet-string[6]	manuf_code[2]+ model code[2]+manuf_year[2]	Device equipment identifier, with manufacturer code + model code + manufacturing's year. Values: **manuf_code[2]**: hexadecimal representation of EDP's manufacturer code. To be provided by EDP to each manufacturer. **model code[2]**:representation of equipment typology and communication type. To be provided by EDP for each equipment type. **manuf_year[2]**: hexadecimal representation of manufacturing year (eg: "07E4" for 2020);		R-/R-/R-/R-	R-/R-/R-
	Device ID 3	**1**		**0.0.96.1.2.255**				
1	logical_name		octet-string[6]	0000600102FF			R-/R-/R-/R-	R-/R-/R-
2	value		octet-string[18]	Equipment_type[10]+Protocol_ID[8] Default value: "meterDLMS0200 "	Equipment type identifier, with equipment type="meter" + protocol identifier ("DLMS"+protocol version).	Protocol version 2.0 Value = "meter"+"DLMS"+"0200"+" "	R-/R-/R-/R-	R-/R-/R-

#	Object/Attribute	Class	Type	Value	Meaning	Comments	Access Rights - Base FW (M/R/F/P)	Access Rights - Secured FW (SG/SB/P)
				Remark: at the end there are 5 " " to fit the remaining digits.				
	Device ID 4	**1**		**0.0.96.1.3.255**				
1	logical_name		octet-string[6]	0000600103FF			R-/R-/R-/R-	R-/R-/R-
2	value		octet-string[20]		Tariff Contract Profile Number [10]+ calendar schedules identifier[10]		RW/R-/R-/R-	RW/R-/R-
	Device ID 5	**1**		**0.0.96.1.4.255**				
1	logical_name		octet-string[6]	0000600104FF			R-/R-/R-/R-	R-/R-/R-
2	value		octet-string[13]		FLAG_ID (meter manufacturer)[3] + E-meter serial number[10]. General communications unique identifier.	Handled by utility.	R-/R-/R-/R-	R-/R-/R-
	Device ID 6	**1**		**0.0.96.1.5.255**				
1	logical_name		octet-string[6]	0000600105FF			R-/R-/R-/R-	R-/R-/R-
2	value		octet-string[24]		multicast communications identifier		RW/R-/R-/R-	RW/R-/R-
	Device ID 7	**1**		**0.0.96.1.6.255**				
1	logical_name		octet-string[6]	0000600106FF			R-/R-/R-/R-	R-/R-/R-
2	value		octet-string[5]		Former application firmware version	Format: see the object "active application firmware identifier"	R-/R-/R-/R-	R-/R-/R-
	Device ID 8	**1**		**0.0.96.1.7.255**				
1	logical_name		octet-string[6]	0000600107FF			R-/R-/R-/R-	R-/R-/R-
2	value		octet-string[27]	Utility_Property_ID[1] + JUMP_ID[8] + Utility_ Manufacturer _ID[3] + Meter_Serial_Number[15]	Utility serial JUMP code Example: - Utility_Property_ID[1]=0; - JUMP_ID[8]=12345678; - Utility_ Manufacturer _ID[3]=999; - Meter Serial Number=00000AAxxxxxxxx -> Device ID 8 =		R-/R-/R-/R-	R-/R-/R-

#	Object/Attribute	Class	Type	Value	Meaning	Comments	Access Rights - Base FW (M/R/F/P)	Access Rights - Secured FW (SG/SB/P)
					01234567899900000AAxxxxxxxx Utility_Property_ID, JUMP_ID and Utility_Manufacter_ID to be defined by EDP for each equipment type and manufacturer.			
	Device ID 9	**1**		**0.0.96.1.8.255**	**Active Calendar name**			
1	logical_name		octet-string[6]	0000600108FF			R-/R-/R-/R-	R-/R-/R-
2	value		octet-string[20]	Meter Model [18] + Meter Year[2]	Device identifier, model code + manufacturing's year		R-/R-/R-/R-	R-/R-/R-
	Device ID 10	**1**		**0.0.96.1.9.255**	**Active Calendar name**			
1	logical_name		octet-string[6]	0000600109FF			R-/R-/R-/R-	R-/R-/R-
2	value		octet-string[22]	Utility_activity_sector[2] + Utility_Type_Equipment_ID[6] + Utility_ Manufacturer _ID[3] + Utility_Property_ID[1] + Meter_Serial_Number[10]	Utility serial number code Example: - Utility_activity_sector[2]=01; - Utility_Type_Equipment_ID[6]=123456; - Utility_ Manufacturer _ID[3]=999; - Utility_Property_ID[1]=0; - Meter_Serial_Number[10]=AAxxxxxxxx -> Device ID 10 = 011234569990AAxxxxxxxx Utility_activity_sector, Utility_Type_Equipament_ID, Utility_Manufacter_ID and Utility_Property_ID to be defined by EDP for each equipment type and manufacturer.		R-/R-/R-/R-	R-/R-/R-

5.5.3 Relógio

#	Object/Attribute	Class	Type	Value	Meaning	Comments	Access Rights - Base FW (M/R/F/P)	Access Rights - Secured FW (SG/SB/P)
	Clock	**8**		**0.0.1.0.0.255**				
1	logical_name		octet-string[6]	0000010000FF			R-/R-/--/R-	R-/--/R-
2	time		octet-string[12]		Contains the meter's local date and time, its deviation to UTC and the status.		RW/R-/--/R-	RW/--/R-
3	time_zone		Long				RW/R-/--/--	RW/--/--
4	status		Unsigned				R-/R-/--/--	R-/--/--
5	daylights_savings_begin		octet-string[12]		last Sunday in March at 01:00		RW/R-/--/--	RW/--/--
6	daylights_savings_end		octet-string[12]		last Sunday in October at 02:00		RW/R-/--/--	RW/--/--
7	daylights_savings_deviation		integer	60			RW/R-/--/--	RW/--/--
8	daylights_savings_enabled		boolean				RW/R-/--/--	RW/--/--
9	clock_base		enum	1	Internal crystal (by default)		RW/R-/--/--	RW/--/--
	Local Time	**1**		**1.0.0.9.1.255**	**For display and readout purposes, not for normal communcation**			
1	logical_name		octet-string[6]	0100000901FF			R-/R-/--/R-	R-/--/R-
2	value		octet-string[4]				R-/R-/--/R-	R-/--/R-
	Local Date	**1**		**1.0.0.9.2.255**	**For display and readout purposes, not for normal communcation**			
1	logical_name		octet-string[6]	0100000902FF			R-/R-/--/R-	R-/--/R-
2	value		octet-string[5]				R-/R-/--/R-	R-/--/R-
	Clock Synchronization	**1**		**0.0.96.2.12.255**				
1	logical_name		octet-string[6]	000060020CFF			R-/R-/--/--	R-/--/--
2	value		octet-string[12]		Date-time format		R-/R-/--/--	R-/--/--
	Clock Time Shift Event Limit	**3**		**1.0.0.9.11.255**				
1	logical_name		octet-string[6]	010000090BFF			R-/R-/--/--	R-/--/--
2	value		unsigned	30	Maximum allowed time shift for sincronization. Distinguishes synchronization from clock setting in the load profile's AMR profile status.		RW/R-/--/--	RW/--/--

#	Object/Attribute	Class	Type	Value	Meaning	Comments	Access Rights - Base FW (M/R/F/P)	Access Rights - Secured FW (SG/SB/P)
3	scaler_unit		scal_unit_type	{0,7}	scaler=0, unit=seconds		R-/R-/--/--	R-/--/--
	Clock Time Shift Invalid Limit	**3**		**1.1.94.35.1.255**				
1	logical_name		octet-string[6]	01015E2301FF			R-/R-/--/--	R-/--/--
2	value		long-unsigned	600	Maximum allowed time shift without setting LI measurement status to 1 (load profile)		RW/R-/--/--	RW/--/--
3	scaler_unit		scal_unit_type	{0,7}	scaler=0, unit=seconds		R-/R-/--/--	R-/--/--

5.5.4 Ciclos horários e dias especiais

#	Object/Attribute	Class	Type	Value	Meaning	Comments	Access Rights - Base FW (M/R/F/P)	Access Rights - Secured FW (SG/SB/P)
	Activity Calendar	20		0.0.13.0.x.255	time of use for tariff control			
1	logical_name		octet-string[6]	00000D00xxFF	x=1..2, tariff contract number		R-/R-/--/--	R-/--/--
2	calendar_name_active		octet-string[6]		Tariff scheme identifier (e.g.: “cd3t”, ”cs4t”, etc..)		R-/R-/--/--	R-/--/--
3	season_profile_active		array[12]		minimum of 2 seasons	Season_start is a DATE-TIME(OCTET-STRING [12]) Season_profile_name and week_name are defined as octect-string[1]	R-/R-/--/--	R-/--/--
4	week_profile_table_active		array[12]		minimum of 2 week profiles (1 week profile per season)	week_profile_name: octet-string[1]	R-/R-/--/--	R-/--/--
5	day_profile_table_active		array[24]		Minimum of 10 different day profiles, including: different weekdays in the same week profile (for each week profile); Saturday per week profile; Sunday per week profile. Every day profile can contain at least 24 entries (switching points). Implementation note: As no real scripts are implemented, script_selector value is used to define the entries (switching points)	Start_time is a TIME(OCTET-STRING[4]) where seconds and hundredths are not configurable (value 0x00). script_logical_name: octet-string[6], is a dummy script. Script_selector identifies directly the rate (0x01 means rate1, 0x02 means rate2, 0x03 rate3,…0x06 rate 6)	R-/R-/--/--	R-/--/--
6	calendar_name_passive		octet-string[6]		Tariff scheme identifier (e.g.: “cd3t”, ”cs4t”, etc..)		RW/R-/--/--	RW/--/--
7	season_profile_passive		array[12]			see above	RW/R-/--/--	RW/--/--
8	week_profile_table_passive		array[12]			see above	RW/R-/--/--	RW/--/--
9	day_profile_table_passive		array[24]			see above	RW/R-/--/--	RW/--/--

#	Object/Attribute	Class	Type	Value	Meaning	Comments	Access Rights - Base FW (M/R/F/P)	Access Rights - Secured FW (SG/SB/P)
#	activate_passive_calendar_time		octet-string[12]		immediate activation can be done by setting the activation date to a previous or the current date		RW/R-/--/--	RW/--/--
	Special Days Table	**11**		**0.0.11.0.x.255**				
1	logical_name		octet-string[6]	00000B00xxFF	x=1..2, active tariff contract number		R-/R-/--/--	R-/--/--
2	entries		array[>=100]		special days	At least 100 special days (supporting fixed and variable dates)	R-/R-/--/--	R-/--/--
	Passive Special Days Table	**11**		**0.0.11.0.x.255**				
1	logical_name		octet-string[6]	00000B00xxFF	x=4..5, passive tariff contract number	Activation of the passive tariff by activate_passive_calendar_time in activity calendar	R-/R-/--/--	R-/--/--
2	entries		array[>=100]		special days	At least 100 special days (supporting fixed and variable dates)	RW/R-/--/--	RW/--/--
	Active Demand Control Threshold	**3**		**0.1.94.35.x.255**				
1	logical_name		octet-string[6]	00015E23xxFF	x=1..6. rates contract 1 (“1º Ciclo Tarifário”)		R-/R-/--/--	R-/--/--
2	value		double-long-unsigned	0; >0	Valid values: - [0, 13800] for single-phase meters, expressed in VA; - [0, 55200] for three-phase meters, expressed in VA; - with: - "0" = Function disabled; - "13800" as a result of 230V*60A; - "55200" as a result of 3*230V*80A		R-/R-/--/--	R-/--/--
3	scaler_unit		scal_unit_type	{0,28}	scaler=0, unit=VA resolution: 000.000 kVA		R-/R-/--/--	R-/--/--

#	Object/Attribute	Class	Type	Value	Meaning	Comments	Access Rights - Base FW (M/R/F/P)	Access Rights - Secured FW (SG/SB/P)
	Passive Demand Control Threshold	**3**		**0.1.94.35.x.255**				
1	logical_name		octet-string[6]	00015E23xxFF	x=11,..16. rates contract 1 (“1º Ciclo Tarifário”)	Activation by activate_passive_calendar_time in activity calendar	R-/R-/--/--	R-/--/--
2	value		double-long-unsigned	0; >0	Valid values: - [0, 13800] for single-phase meters, expressed in VA; - [0, 55200] for three-phase meters, expressed in VA; - with: - "0" = Function disabled; - "13800" as a result of 230V*60A; - "55200" as a result of 3*230V*80A		RW/R-/--/--	RW/--/--
3	scaler_unit		scal_unit_type	{0,28}	scaler=0, unit=VA resolution: 000.000 kVA		R-/R-/--/--	R-/--/--
	Currently active tariff	**1**		**0.0.96.14.x.255**				
1	logical_name		octet-string[6]	0000600ExxFF	x=1..2, tariff contract number		R-/R-/--/--	R-/--/--
2	value		unsigned	1..10	currently active tariff number. Read-only.		R-/R-/--/--	R-/--/--

5.5.5 Fechos mensais e diários – períodos e perfis

#	Object/Attribute	Class	Type	Value	Meaning	Comments	Access Rights - Base FW (M/R/F/P)	Access Rights - Secured FW (SG/SB/P)
	Predefined Scripts - MDI reset / end of billing period	**9**		**0.0.10.0.1.255**				
1	logical_name		octet-string[6]	00000A0001FF			R-/R-/--/--	R-/--/--
2	scripts		array				R-/R-/--/--	R-/--/--
1	execute		long-unsigned	Arguments: 1:Monthly Billing Reset Contract 1 2:Monthly Billing Reset Contract 2 7: Monthly Billing Reset all contracts		The activation of this scripts is performed by calling the execute() method to the script identifier of the corresponding script object.	-W/--/--/--	-W/--/--
	Active end of billing period 1	**22**		**0.0.15.1.x.255**		Single action scheduler for Stored Billing Values Profile		
1	logical_name		octet-string[6]	00000F0**1**xxFF	x=1..2, tariff contract number		R-/R-/--/--	R-/--/--
2	executed_script		script	0.0.10.0.1.255	billing period reset	MDI reset / end of billing period	R-/R-/--/--	R-/--/--
3	type		enum	1	fixed time, wildcard in date		R-/R-/--/--	R-/--/--
4	execution_time		array				R-/R-/--/--	R-/--/--
	Passive end of billing period 1	**1**		**0.0.94.35.x.255**	**Date/time of passive end of billing period for contract.**			
1	logical_name		octet-string[6]	00005E23xxFF	x = 41..42, Contract 1..2		R-/R-/--/--	R-/--/--
2	value		octet-string[12]		Date/time format		RW/R-/--/--	RW/--/--
	Data of billing period 1 Stored Billing Values Profile	**7**		**0.0.98.1.c.255**	**End of billing values**	Stored Billing Values Profile		
1	logical_name		octet-string[6]	00006201ccFF	**c**=1..2, tariff contract number		R-/R-/--/--	R-/--/--
2	buffer		array		selective access per range		R-/R-/--/--	R-/--/--

#	Object/Attribute	Class	Type	Value	Meaning	Comments	Access Rights - Base FW (M/R/F/P)	Access Rights - Secured FW (SG/SB/P)
3	capture_objects		array[60]	{8,0.0.1.0.0.255,2}; {3,1.0.1.8.0.255,2}; {3,1.0.1.8.x.255,2}; {3,1.0.1.8.y.255,2}; {3,1.0.1.8.w.255,2}; {3,1.0.1.8.z.255,2}; {4,1.0.1.6.e.255,2}; {4,1.0.1.6.e.255,5};	Clock; Energy total registers; Energy rated registers, dependent on contract. Object 0.0.98.1.1.255": only contract 1 related object apply; Object "0.0.98.1.2.255": only contract 2 related objects apply. x= 1 for tariff contract 1 x= 11 for tariff contract 2 y= 2 for tariff contract 1 y= 12 for tariff contract 2 w= 3 for tariff contract 1 w= 13 for tariff contract 2 z = 14 for tariff contract 2. This object only applies to tariff contract 2. Maximum demand register with timestamp: e= 10 for tariff contract 1 e= 20 for tariff contract 2	**By default, the array list is the defined.** **However it must be possible to define the list of values in the array.** **The values possible of being selected are the values defined in energy registers and maximum demand registers**	RW/R-/--/--	RW/--/--
4	capture_period		double-long-unsigned	0	triggered from single action scheduler with billing period 1		R-/R-/--/--	R-/--/--
5	sort_method		enum	1	unsorted (FIFO)		R-/R-/--/--	R-/--/--
6	sort_object		object definition	none	unsorted		R-/R-/--/--	R-/--/--
7	entries_in_use		double-long-unsigned				R-/R-/--/--	R-/--/--
8	profile_entries		double-long-unsigned	≥12	≥ 12 months		R-/R-/--/--	R-/--/--

#	Object/Attribute	Class	Type	Value	Meaning	Comments	Access Rights - Base FW (M/R/F/P)	Access Rights - Secured FW (SG/SB/P)
	Time stamp of billing period 1 last reset	**1**		**0.0.0.1.x.255**	**Date/time of the most recent billing period**			
1	logical_name		octet-string[6]	00000001xxFF	x = 11..12, tariff contract number 1 or 2		R-/R-/--/--	R-/--/--
2	value		octet-string[12]		Date/time format		R-/R-/--/--	R-/--/--
	End of billing period 2	**22**		**0.0.15.2.x.255**		Single action scheduler for Stored Billing Values Profile		
1	logical_name		octet-string[6]	00000F02xxFF	x=1..2, tariff contract number		R-/R-/--/--	R-/--/--
2	executed_script		script	0-0:10.0.1.255	billing period reset	MDI reset / end of billing period	R-/R-/--/--	R-/--/--
3	type		enum	1	fixed time, wildcard in date		R-/R-/--/--	R-/--/--
4	execution_time		array				R-/R-/--/--	R-/--/--
	Data of billing period 2 Stored Billing Values Profile	**7**		**0.0.98.2.c.255**	**daily billing values**	Stored Billing Values Profile		
1	logical_name		octet-string[6]	00006202ccFF	c=1..2, tariff contract number		R-/R-/--/--	R-/--/--
2	buffer		array		selective access per range		R-/R-/--/--	R-/--/--
3	capture_objects		array[60]	{8,0.0.1.0.0.255,2}; {3,1.0.1.8.0.255,2}; {3,1.0.1.8.x.255,2}; {3,1.0.1.8.y.255,2};	Clock; Energy total registers; Energy rated registers, dependent on contract. Object 0.0.98.1.1.255": only contract 1 related object apply; Object "0.0.98.1.2.255": only contract 2 related objects apply. x= 1 for tariff contract 1 x= 11 for tariff contract 2 y= 2 for tariff contract 1 y= 12 for tariff contract 2	**By default, the array list is the defined.** **However it must be possible to define the list of values in the array.** **The values possible of being selected are the values defined in energy registers** **and maximum demand registers**	RW/R-/--/--	RW/--/--

#	Object/Attribute	Class	Type	Value	Meaning	Comments	Access Rights - Base FW (M/R/F/P)	Access Rights - Secured FW (SG/SB/P)
				{3,1.0.1.8.w.255,2}; {3,1.0.1.8.z.255,2}; {4,1.0.1.6.e.255,2}; {4,1.0.1.6.e.255,5};	w= 3 for tariff contract 1 w= 13 for tariff contract 2 z = 14 for tariff contract 2. This object only applies to tariff contract 2. Maximum demand register with timestamp: e= 10 for tariff contract 1 e= 20 for tariff contract 2			
4	capture_period		double-long-unsigned	0	triggered from single action scheduler with billing period 2		R-/R-/--/--	R-/--/--
5	sort_method		enum	1	unsorted (FIFO)		R-/R-/--/--	R-/--/--
6	sort_object		object definition	none	unsorted		R-/R-/--/--	R-/--/--
7	entries_in_use		double-long-unsigned				R-/R-/--/--	R-/--/--
8	profile_entries		double-long-unsigned	>=45	>=45 days		R-/R-/--/--	R-/--/--

5.5.6 Interrupções de longa duração (duração, limites)

#	Object/Attribute	Class	Type	Value	Meaning	Comments	Access Rights - Base FW (M/R/F/P)	Access Rights - Secured FW (SG/SB/P)
	Time threshold for long power failure	**3**		**0.0.96.7.20.255**				
1	logical_name		octet-string[6]	0000600714FF			R-/R-/--/--	R-/--/--
2	value		long-unsigned	180	long power failures = more than 3 minutes Valid values: - >= 0 expressed in seconds; - "180" as default value;		RW/R-/--/--	RW/--/--
3	scaler_unit		scal_unit_type	{0,7}	scale=0, unit=seconds		R-/R-/--/--	R-/--/--
	Threshold for long power failure	**3**		**0.0.94.35.60.255**				
1	logical_name		octet-string[6]	00005E233CFF			R-/R-/--/--	R-/--/--
2	value		long-unsigned	5000	Valid values: - [0, 10000] expressed in % with scaler = -2; - "5000" (50,00 % of Vref) as default value;		RW/R-/--/--	RW/--/--
3	scaler_unit		scal_unit_type	{-2,56}	scaler=-2, unit=%	unit = nominal voltage percent (Reference voltage for PQ)	R-/R-/--/--	R-/--/--
	Duration of long power failures in all phases	**3**		**0.0.96.7.15.255**		Only polyphase meters		
1	logical_name		octet-string[6]	000060070FFF			R-/R-/--/--	R-/--/--
2	Value		Double-long-unsigned				R-/R-/--/--	R-/--/--
3	scaler_unit		scal_unit_type	{0,7}	scale=0, unit=seconds		R-/R-/--/--	R-/--/--
	Duration of long power failures in phase L1	**3**		**0.0.96.7.16.255**		Only polyphase meters		
1	logical_name		octet-string[6]	0000600710FF			R-/R-/--/--	R-/--/--
2	Value		Double-long-unsigned				R-/R-/--/--	R-/--/--
3	scaler_unit		scal_unit_type	{0,7}	scale=0, unit=seconds		R-/R-/--/--	R-/--/--

#	Object/Attribute	Class	Type	Value	Meaning	Comments	Access Rights - Base FW (M/R/F/P)	Access Rights - Secured FW (SG/SB/P)
	Duration of long power failures in phase L2	**3**		**0.0.96.7.17.255**		Only polyphase meters		
1	logical_name		octet-string[6]	0000600711FF			R-/R-/--/--	R-/--/--
2	Value		Double-long-unsigned				R-/R-/--/--	R-/--/--
3	scaler_unit		scal_unit_type	{0,7}	scale=0, unit=seconds		R-/R-/--/--	R-/--/--
	Duration of long power failures in phase L3	**3**		**0.0.96.7.18.255**		Only polyphase meters		
1	logical_name		octet-string[6]	0000600712FF			R-/R-/--/--	R-/--/--
2	value		Double-long-unsigned				R-/R-/--/--	R-/--/--
3	scaler_unit		scal_unit_type	{0,7}	scale=0, unit=seconds		R-/R-/--/--	R-/--/--
	Duration of long power failures in any phases	**3**		**0.0.96.7.19.255**		Single and polyphase meters		
1	logical_name		octet-string[6]	0000600713FF			R-/R-/--/--	R-/--/--
2	value		Double-long-unsigned				R-/R-/--/--	R-/--/--
3	scaler_unit		scal_unit_type	{0,7}	scale=0, unit=seconds		R-/R-/--/--	R-/--/--
	Number of long power failures in all phases	**1**		**0.0.96.7.5.255**		Only polyphase meters		
1	logical_name		octet-string[6]	0000600705FF			R-/R-/--/--	R-/--/--
2	value		long-unsigned				R-/R-/--/--	R-/--/--
	Number of long power failures in phase L1	**1**		**0.0.96.7.6.255**		Only polyphase meters		
1	logical_name		octet-string[6]	0000600706FF			R-/R-/--/--	R-/--/--
2	Value		long-unsigned				R-/R-/--/--	R-/--/--
	Number of long power failures in phase L2	**1**		**0.0.96.7.7.255**		Only polyphase meters		
1	logical_name		octet-string[6]	0000600707FF			R-/R-/--/--	R-/--/--
2	Value		long-unsigned				R-/R-/--/--	R-/--/--
	Number of long power failures in phase L3	**1**		**0.0.96.7.8.255**		Only polyphase meters		
1	logical_name		octet-string[6]	0000600708FF			R-/R-/--/--	R-/--/--
2	value		long-unsigned				R-/R-/--/--	R-/--/--

#	Object/Attribute	Class	Type	Value	Meaning	Comments	Access Rights - Base FW (M/R/F/P)	Access Rights - Secured FW (SG/SB/P)
	Number of long power failures in any phase	**1**		**0.0.96.7.9.255**		Single and polyphase meters		
1	logical_name		octet-string[6]	0000600709FF			R-/R-/--/--	R-/--/--
2	value		long-unsigned				R-/R-/--/--	R-/--/--

5.5.7 Tratamento de Erros e Alarmes (registo de Erros, registo de Alarmes)

#	Object/Attribute	Class	Type	Value	Meaning	Comments	Access Rights - Base FW (M/R/F/P)	Access Rights - Secured FW (SG/SB/P)
	Error Object	**3**		**0.0.97.97.0.255**	**error register**			
1	logical_name		octet-string[6]	0000616100FF			R-/R-/--/--	R-/--/--
2	value		double-long-unsigned		error code	See error&alarms	R-/R-/--/--	R-/--/--
3	scaler_unit		scal_unit_type	{0,255			R-/R-/--/--	R-/--/--
1	reset		integer	0			-W/--/--/--	-W/--/--
	Alarm Object	**3**		**0.0.97.98.0.255**	**alarm register**			
1	logical_name		octet-string[6]	0000616200FF			R-/R-/--/--	R-/--/--
2	value		double-long-unsigned		alarm code	See error&alarms	R-/R-/--/--	R-/--/--
3	scaler_unit		scal_unit_type	{0,255			R-/R-/--/--	R-/--/--
1	reset		integer	0			-W/--/--/--	-W/--/--
	Alarm Filter	**1**		**0.0.97.98.10.255**				
1	logical_name		octet-string[6]	000061620AFF			R-/R-/--/--	R-/--/--
2	value		double-long-unsigned		This filter defines, if an event is handled as an alarm when it appears bit mask with the same structure as the current value of the alarm object		RW/R-/--/--	RW/--/--

5.5.8 Tratamento de Eventos (Eventos e *Logs*)

#	Object/Attribute	Class	Type	Value	Meaning	Comments	Access Rights - Base FW (M/R/F/P)	Access Rights - Secured FW (SG/SB/P)
	Event Object - "Standard" Event Log	**1**		**0.0.96.11.0.255**				
1	logical_name		octet-string[6]	0000600B00FF			R-/R-/--/--	R-/--/--
2	value		unsigned		event number (0 to 255)		R-/R-/--/--	R-/--/--
	"Standard" Event Log	**7**		**0.0.99.98.0.255**	**"Standard" Event Log**			
1	logical_name		octet-string[6]	0000636200FF			R-/R-/--/--	R-/--/--
2	buffer		array		selective access per range		R-/R-/--/--	R-/--/--
3	capture_objects		array	{8,0.0.1.0.0.255,2,0} {1,0.0.96.11.0.255,2,0}	clock; event code		R-/R-/--/--	R-/--/--
4	capture_period		double-long-unsigned	0	asynchronously		R-/R-/--/--	R-/--/--
5	sort_method		enum	1	unsorted (FIFO)		R-/R-/--/--	R-/--/--
6	sort_object		object definition	none	unsorted		R-/R-/--/--	R-/--/--
7	entries_in_use		double-long-unsigned				R-/R-/--/--	R-/--/--
8	profile_entries		double-long-unsigned	≥100			R-/R-/--/--	R-/--/--
1	reset						-W/--/--/--	-W/--/--
	Event Object - "Anti-fraude" Event Log	**1**		**0.0.96.11.1.255**				
1	logical_name		octet-string[6]	0000600B01FF			R-/R-/--/--	R-/--/--
2	value		unsigned		event number (0 to 255)		R-/R-/--/--	R-/--/--
	"Anti-fraude" Event Log	**7**		**0.0.99.98.1.255**	**"Anti-fraude" Event Log**			
1	logical_name		octet-string[6]	0000636201FF			R-/R-/--/--	R-/--/--
2	buffer		array		selective access per range		R-/R-/--/--	R-/--/--
3	capture_objects		array	{8,0.0.1.0.0.255,2,0} {1,0.0.96.11.1.255,2,0}	clock; event code		R-/R-/--/--	R-/--/--
4	capture_period		double-long-unsigned	0	asynchronously		R-/R-/--/--	R-/--/--
5	sort_method		enum	1	unsorted (FIFO)		R-/R-/--/--	R-/--/--
6	sort_object		object definition	none	unsorted		R-/R-/--/--	R-/--/--

#	Object/Attribute	Class	Type	Value	Meaning	Comments	Access Rights - Base FW (M/R/F/P)	Access Rights - Secured FW (SG/SB/P)
7	entries_in_use		double-long-unsigned				R-/R-/--/--	R-/--/--
8	profile_entries		double-long-unsigned	≥10			R-/R-/--/--	R-/--/--
1	reset						-W/--/--/--	-W/--/--
	Event Object - "Falha de Energia" Event Log	**1**		**0.0.96.11.5.255**				
1	logical_name		octet-string[6]	0000600B05FF			R-/R-/--/--	R-/--/--
2	value		unsigned		event number (0 to 255)		R-/R-/--/--	R-/--/--
	"Falha de Energia" Event Log	**7**		**0.0.99.98.5.255**	**"Falha de Energia" Event Log**			
1	logical_name		octet-string[6]	0000636205FF			R-/R-/--/--	R-/--/--
2	buffer		array		selective access per range		R-/R-/--/--	R-/--/--
3	capture_objects		array	{8,0.0.1.0.0.255,2,0} {1,0.0.96.11.5.255,2,0}	clock; event code "Falha de Energia" log contains errors and alarms concerning mains parameters (under/over-voltages and long power failures)		R-/R-/--/--	R-/--/--
4	capture_period		double-long-unsigned	0	asynchronously		R-/R-/--/--	R-/--/--
5	sort_method		enum	1	unsorted (FIFO)		R-/R-/--/--	R-/--/--
6	sort_object		object definition	none	unsorted		R-/R-/--/--	R-/--/--
7	entries_in_use		double-long-unsigned				R-/R-/--/--	R-/--/--
8	profile_entries		double-long-unsigned	≥15			R-/R-/--/--	R-/--/--
1	reset						-W/--/--/--	-W/--/--
	Time trigger for voltage sags, for voltage swell or long power failure	**1**		**0.0.94.35.80.255**	Time trigger for "Qualidade de Serviço" log			
1	logical_name		octet-string[6]	00005E2350FF			R-/R-/--/--	R-/--/--
2	value		octet-string[12]		Date time format		R-/R-/--/--	R-/--/--
	Event Object – "Qualidade de Serviço" Log	**1**		**0.0.96.11.9.255**				
1	logical_name		octet-string[6]	0000600B09FF			R-/R-/--/--	R-/--/--

#	Object/Attribute	Class	Type	Value	Meaning	Comments	Access Rights - Base FW (M/R/F/P)	Access Rights - Secured FW (SG/SB/P)
2	value		unsigned		event number (0 to 255)		R-/R-/--/--	R-/--/--
	"Qualidade de Serviço" Event Log	**7**		**0.0.99.98.9.255**	**"Qualidade de Serviço" Event log**			
1	logical_name		octet-string[6]	0000636209FF			R-/R-/--/--	R-/--/--
2	buffer		array		selective access per range		R-/R-/--/--	R-/--/--
3	capture_objects		array	{8,0.0:1.0.0.255,2,0} {1,0.0.96.11.9.255,2,0}	clock; "Qualidade de Serviço" log contains errors and alarms concerning mains parameters (under/over-voltages and long power failures)		R-/R-/--/--	R-/--/--
				{1,0.0.94.35.80.255,2,0}	Timestamp begin of event			
4	capture_period		double-long-unsigned	0	asynchronously		R-/R-/--/--	R-/--/--
5	sort_method		enum	1	unsorted (FIFO)		R-/R-/--/--	R-/--/--
6	sort_object		object definition	none	unsorted		R-/R-/--/--	R-/--/--
7	entries_in_use		double-long-unsigned				R-/R-/--/--	R-/--/--
8	profile_entries		double-long-unsigned	≥15			R-/R-/--/--	R-/--/--
1	reset						-W/--/--/--	-W/--/--
	Event Object - "Alta Ocorrência" Event Log	**1**		**0.0.96.11.7.255**				
1	logical_name		octet-string[6]	0000600B07FF			R-/R-/--/--	R-/--/--
2	value		unsigned		event number (0 to 255)		R-/R-/--/--	R-/--/--
	"Alta Ocorrência" Event Log	**7**		**0.0.99.98.7.255**	**"Alta Ocorrência" Event Log**			
1	logical_name		octet-string[6]	0000636207FF			R-/R-/--/--	R-/--/--
2	buffer		array		selective access per range		R-/R-/--/--	R-/--/--
3	capture_objects		array	{8,0.0.1.0.0.255,2,0} {1,0.0.96.11.7.255,2,0}	Clock; Event code		R-/R-/--/--	R-/--/--
4	capture_period		double-long-unsigned	0	asynchronously		R-/R-/--/--	R-/--/--
5	sort_method		enum	1	unsorted (FIFO)		R-/R-/--/--	R-/--/--
6	sort_object		object definition	none	unsorted		R-/R-/--/--	R-/--/--

#	Object/Attribute	Class	Type	Value	Meaning	Comments	Access Rights - Base FW (M/R/F/P)	Access Rights - Secured FW (SG/SB/P)
7	entries_in_use		double-long-unsigned				R-/R-/--/--	R-/--/--
8	profile_entries		double-long-unsigned	≥100			R-/R-/--/--	R-/--/--
1	reset						-W/--/--/--	-W/--/--
	Event Object – "Potência contratada" Log	**1**		**0.0.96.11.3.255**				
1	logical_name		octet-string[6]	0000600B03FF			R-/R-/--/--	R-/--/--
2	value		unsigned		event number (0 to 255)		R-/R-/--/--	R-/--/--
	"Potência contratada" Event Log	**7**		**0.0.99.98.3.255**	**"Potência contratada" Event Log**			
1	logical_name		octet-string[6]	0000636203FF			R-/R-/--/--	R-/--/--
2	buffer		array		selective access per range		R-/R-/--/--	R-/--/--
3	capture_objects		array	{8,0.0.1.0.0.255,2,0} {1,0.0.96.11.3.255,2,0} {3,0.1.94.35.x.255,2,0} {3,0.1.94.35.y.255,2,0}	clock; event code x = 11…16 passive power contract (new) y = 1…6 power contract (former)		R-/R-/--/--	R-/--/--
4	capture_period		double-long-unsigned	0	asynchronously		R-/R-/--/--	R-/--/--
5	sort_method		enum	1	unsorted (FIFO)		R-/R-/--/--	R-/--/--
6	sort_object		object definition	none	unsorted		R-/R-/--/--	R-/--/--
7	entries_in_use		double-long-unsigned				R-/R-/--/--	R-/--/--
8	profile_entries		double-long-unsigned	≥15			R-/R-/--/--	R-/--/--
1	reset						-W/--/--/--	-W/--/--
	Event Object – "Firmware" Event Log	**1**		**0.0.96.11.4.255**				
1	logical_name		octet-string[6]	0000600B04FF			R-/R-/--/--	R-/--/--
2	value		unsigned		event number (0 to 255)		R-/R-/--/--	R-/--/--
	“Firmware” Event Log	**7**		**0.0.99.98.4.255**	**"Firmware" Event Log**			
1	logical_name		octet-string[6]	0000636204FF			R-/R-/--/--	R-/--/--
2	buffer		array		selective access per range		R-/R-/--/--	R-/--/--
3	capture_objects		array	{8,0.0.1.0.0.255,2,0}	clock;		R-/R-/--/--	R-/--/--

#	Object/Attribute	Class	Type	Value	Meaning	Comments	Access Rights - Base FW (M/R/F/P)	Access Rights - Secured FW (SG/SB/P)
				{1,0.0.96.11.4.255,2,0} {1,1.0.0.2.0.255,2,0} {1,1.1.0.2.0.255,2,0} {1,1.2.0.2.0.255,2,0} {1,0.0.96.1.6.255,2,0}	event code; active core firmware version; active application firmware version (if available); communication module firmware version (if available); former application firmware version (if available);			
4	capture_period		double-long-unsigned	0	asynchronously		R-/R-/--/--	R-/--/--
5	sort_method		enum	1	unsorted (FIFO)		R-/R-/--/--	R-/--/--
6	sort_object		object definition	none	unsorted		R-/R-/--/--	R-/--/--
7	entries_in_use		double-long-unsigned				R-/R-/--/--	R-/--/--
8	profile_entries		double-long-unsigned	≥15			R-/R-/--/--	R-/--/--
1	reset						-W/--/--/--	-W/--/--
	Event Object – "Sincronização" Event Log	**1**		**0.0.96.11.8.255**				
1	logical_name		octet-string[6]	0000600B08FF			R-/R-/--/--	R-/--/--
2	value		unsigned		event number (0 to 255)		R-/R-/--/--	R-/--/--
	"Sincronização" Event Log	**7**		**0.0.99.98.8.255**	**"Sincronização" Event Log**			
1	logical_name		octet-string[6]	0000636208FF			R-/R-/--/--	R-/--/--
2	buffer		array		selective access per range		R-/R-/--/--	R-/--/--
3	capture_objects		array	{8,0.0.1.0.0.255,2,0} {1,0.0.96.11.8.255,2,0} {1, 0.0.96.2.12.255,2,0}	clock; event code; former clock (from clock synchronization object)		R-/R-/--/--	R-/--/--
4	capture_period		double-long-unsigned	0	asynchronously		R-/R-/--/--	R-/--/--
5	sort_method		enum	1	unsorted (FIFO)		R-/R-/--/--	R-/--/--
6	sort_object		object definition	none	unsorted		R-/R-/--/--	R-/--/--
7	entries_in_use		double-long-unsigned				R-/R-/--/--	R-/--/--
8	profile_entries		double-long-unsigned	≥15			R-/R-/--/--	R-/--/--

#	Object/Attribute	Class	Type	Value	Meaning	Comments	Access Rights - Base FW (M/R/F/P)	Access Rights - Secured FW (SG/SB/P)
1	reset						-W/--/--/--	-W/--/--
	Event Object - "Configuração" Log	1		0.0.96.11.10.255				
1	logical_name		octet-string[6]	0000600B0AFF			R-/R-/--/--	R-/--/--
2	value		unsigned		event number (0 to 255)		R-/R-/--/--	R-/--/--
	"Configuração" Event Log	7		0.0.99.98.10.255	"Configuração" Event Log			
1	logical_name		octet-string[6]	000063620AFF			R-/R-/--/--	R-/--/--
2	buffer		array		selective access per range		R-/R-/--/--	R-/--/--
3	capture_objects		array	{8,0.0.1.0.0.255,2,0} {1,0.0.96.11.10.255,2,0}	Clock; Event code		R-/R-/--/--	R-/--/--
4	capture_period		double-long-unsigned	0	asynchronously		R-/R-/--/--	R-/--/--
5	sort_method		enum	1	unsorted (FIFO)		R-/R-/--/--	R-/--/--
6	sort_object		object definition	none	unsorted		R-/R-/--/--	R-/--/--
7	entries_in_use		double-long-unsigned				R-/R-/--/--	R-/--/--
8	profile_entries		double-long-unsigned	≥20			R-/R-/--/--	R-/--/--
1	reset						-W/--/--/--	-W/--/--
	Event Object - "Gestão da Procura" Log	1		0.0.96.11.06.255				
1	logical_name		octet-string[6]	0000600B06FF			R-/R-/--/--	R-/--/--
2	value		unsigned		event number (0 to 255)		R-/R-/--/--	R-/--/--
	"Gestão da Procura" Event Log	7		0.0.99.98.06.255	"Gestão da Procura" Event Log			
1	logical_name		octet-string[6]	0000636206FF			R-/R-/--/--	R-/--/--
2	buffer		array		selective access per range		R-/R-/--/--	R-/--/--
3	capture_objects		array	{8,0.0.1.0.0.255,2,0} {1,0.0.99.98.06.255,2,0} {3, 0.1.94.35.31.255,2,0}	Clock; Event code Currently Apparent Power Threshold		R-/R-/--/--	R-/--/--
4	capture_period		double-long-unsigned	0	asynchronously		R-/R-/--/--	R-/--/--
5	sort_method		enum	1	unsorted (FIFO)		R-/R-/--/--	R-/--/--

#	Object/Attribute	Class	Type	Value	Meaning	Comments	Access Rights - Base FW (M/R/F/P)	Access Rights - Secured FW (SG/SB/P)
6	sort_object		object definition	none	unsorted		R-/R-/--/--	R-/--/--
7	entries_in_use		double-long-unsigned				R-/R-/--/--	R-/--/--
8	profile_entries		double-long-unsigned	≥20			R-/R-/--/--	R-/--/--
1	reset						-W/--/--/--	-W/--/--
	Event Object - "Iluminação Pública" Log	**1**		**0.0.96.11.11.255**				
1	logical_name		octet-string[6]	0000600B0BFF			R-/R-/--/--	R-/--/--
2	value		unsigned		event number (0 to 255)		R-/R-/--/--	R-/--/--
	"Iluminação Pública" Event Log	**7**		**0.0.99.98.11.255**	**"Iluminação" Event Log**			
1	logical_name		octet-string[6]	000063620BFF			R-/R-/--/--	R-/--/--
2	buffer		array		selective access per range		R-/R-/--/--	R-/--/--
3	capture_objects		array	{8,0.0.1.0.0.255,2,0} {1,0.0.96.11.11.255,2,0}	Clock; Event code		R-/R-/--/--	R-/--/--
4	capture_period		double-long-unsigned	0	asynchronously		R-/R-/--/--	R-/--/--
5	sort_method		enum	1	unsorted (FIFO)		R-/R-/--/--	R-/--/--
6	sort_object		object definition	none	unsorted		R-/R-/--/--	R-/--/--
7	entries_in_use		double-long-unsigned				R-/R-/--/--	R-/--/--
8	profile_entries		double-long-unsigned	≥50			R-/R-/--/--	R-/--/--
1	reset						-W/--/--/--	-W/--/--
	Event Object - Correct Security Operations Log	**1**		**0.0.96.11.12.255**		Only applicable to EMIs with cibersecurity extension FW		
1	logical_name		octet-string[6]	0000600B0CFF			R-/R-/--/--	R-/--/--
2	value		unsigned		event number (0 to 255)		R-/R-/--/--	R-/--/--
	Correct Security Operations Event Log	**7**		**0.0.99.98.12.255**	**Correct Security Operations Event Log**	Only applicable to EMIs with cibersecurity extension FW		
1	logical_name		octet-string[6]	000063620CFF			R-/R-/--/--	R-/--/--

#	Object/Attribute	Class	Type	Value	Meaning	Comments	Access Rights - Base FW (M/R/F/P)	Access Rights - Secured FW (SG/SB/P)
2	buffer		array		selective access per range		R-/R-/--/--	R-/--/--
3	capture_objects		array	{8,0.0.1.0.0.255,2,0} {1,0.0.96.11.12.255,2,0} {64,0.0.43.0.5.255,4,0}	Clock; Event code Client System Title	The client system title should be the same at 64,0-0:43.0.5.255,4,0 and 64,0-0:43.0.6.255,4,0 Independently of association for General client or Broadcast client. Both object should have always the same value	R-/R-/--/--	R-/--/--
4	capture_period		double-long-unsigned	0	asynchronously		R-/R-/--/--	R-/--/--
5	sort_method		enum	1	unsorted (FIFO)		R-/R-/--/--	R-/--/--
6	sort_object		object definition	none	unsorted		R-/R-/--/--	R-/--/--
7	entries_in_use		double-long-unsigned				R-/R-/--/--	R-/--/--
8	profile_entries		double-long-unsigned	≥100			R-/R-/--/--	R-/--/--
1	reset						--/--/--/--	-W/--/--
	Event Object - Failed Security Operations Log	**1**		**0.0.96.11.13.255**		Only applicable to EMIs with cibersecurity extension FW		
1	logical_name		octet-string[6]	0000600B0DFF			R-/R-/--/--	R-/--/--
2	value		unsigned		event number (0 to 255)		R-/R-/--/--	R-/--/--
	Failed Security Operations Event Log	**7**		**0.0.99.98.13.255**	**Failed Security Operations Event Log**	Only applicable to EMIs with cibersecurity extension FW		
1	logical_name		octet-string[6]	000063620DFF			R-/R-/--/--	R-/--/--
2	buffer		array		selective access per range		R-/R-/--/--	R-/--/--
3	capture_objects		array	{8,0.0.1.0.0.255,2,0}	Clock;	The client system title should be the same at 64,0-0:43.0.5.255,4,0	R-/R-/--/--	R-/--/--

#	Object/Attribute	Class	Type	Value	Meaning	Comments	Access Rights - Base FW (M/R/F/P)	Access Rights - Secured FW (SG/SB/P)
				{1,0.0.96.11.13.255,2,0} {64,0.0.43.0.5.255,4,0}	Event code Client System Title	and 64,0-0:43.0.6.255,4,0 Independently of association for General client or Broadcast client. Both object should have always the same value		
4	capture_period		double-long-unsigned	0	asynchronously		R-/R-/--/--	R-/--/--
5	sort_method		enum	1	unsorted (FIFO)		R-/R-/--/--	R-/--/--
6	sort_object		object definition	none	unsorted		R-/R-/--/--	R-/--/--
7	entries_in_use		double-long-unsigned				R-/R-/--/--	R-/--/--
8	profile_entries		double-long-unsigned	≥30			R-/R-/--/--	R-/--/--
1	reset						--/--/--/--	-W/--/--
	Standard Event Log Filter	**1**		**0.1.94.35.105.255**	Standard event log Filter containing log activation and Event Notification activation			
1	logical_name		octet-string[6]	00015E2369FF			R-/R-/--/--	R-/--/--
2	value		Array [2] of Bit-string[256]	**Array[0]** = Default values: 1 for all bits (all events will be log into the buffer) **Array[1] =** Default value: 0 for all bits (no event will be sent as notification event), except "Neutral loss" and" Low battery" events that should be marked as 1	**Array[0]** = Mask filter for log of the event bit =0 NOT log bit=1 log **Array [1]** = Mask filter of events for being asynchronously sent from the server to the client	Example array[0]: If Bit0=0 => Event with value 0 is not log into the buffer. Bit18=1 Event with value 18 will be log Example array[1]	RW/R-/--/--	RW/--/--

#	Object/Attribute	Class	Type	Value	Meaning	Comments	Access Rights - Base FW (M/R/F/P)	Access Rights - Secured FW (SG/SB/P)
					bit=0 not sent bit=1 sent	Bit36=1 the event with value 36 will be sent as notification event		
	"Anti-fraude" Event Log Filter	**1**		**0.1.94.35.106.255**	"Anti-fraude" events Filter containing log activation and Event Notification activation			
1	logical_name		octet-string[6]	00015E236AFF			R-/R-/--/--	R-/--/--
2	value		Array [2] of Bit-string[256]	**Array[0]** = Default values: 1 for all bits (all events will be log into the buffer) **Array[1] =** Default value: 1 for all bits (all events will be sent as notification event)	**Array[0]** = Mask filter for log of the event bit =0 NOT log bit=1 log **Array [1]** = Mask filter of events for being asynchronously sent from the server to the client bit=0 not sent bit=1 sent	Example array[0]: If Bit0=0 => Event with value 0 is not log into the buffer. Bit18=1 Event with value 18 will be log Example array[1] Bit36=1 the event with value 36 will be sent as notification event	RW/R-/--/--	RW/--/--
	"Qualidade de serviço" Event Log Filter	**1**		**0.1.94.35.107.255**	"Qualidade de serviço" event log Filter containing log activation and Event Notification activation			
1	logical_name		octet-string[6]	00015E236BFF			R-/R-/--/--	R-/--/--
2	value		Array [2] of Bit-string[256]	**Array[0]** = Default values: 1 for all bits (all events will be log into the buffer) **Array[1] =** Default value: 0 for all bits (no event will be	**Array[0]** = Mask filter for log of the event bit =0 NOT log bit=1 log **Array [1]** =	Example array[0]: If Bit0=0 => Event with value 0 is not log into the buffer. Bit18=1 Event with value 18 will be log	RW/R-/--/--	RW/--/--

#	Object/Attribute	Class	Type	Value	Meaning	Comments	Access Rights - Base FW (M/R/F/P)	Access Rights - Secured FW (SG/SB/P)
				sent as notification event)	Mask filter of events for being asynchronously sent from the server to the client bit=0 not sent bit=1 sent	Example array[1] Bit36=1 the event with value 36 will be sent as notification event		
	"Falha de Energia" Event Log Filter	**1**		**0.1.94.35.108.255**	"Falha de Energia" event log Filter containing log activation and Event Notification activation	,		
1	logical_name		octet-string[6]	00015E236CFF			R-/R-/--/--	R-/--/--
2	value		Array [2] of Bit-string[256]	**Array[0]** = Default values: 1 for all bits (all events will be log into the buffer) **Array[1] =** Default value for single phase meters : 0 for all bits (no event will be sent as notification event) Default value for polyphase meters: 0 for all bits (no event will be sent as notification event), except "Long power failure L1", "Long power failure L2" and "Long power failure L3" events that should be marked as 1	**Array[0]** = Mask filter for log of the event bit =0 NOT log bit=1 log **Array [1]** = Mask filter of events for being asynchronously sent from the server to the client	Example array[0]: If Bit0=0 => Event with value 0 is not log into the buffer. Bit18=1 Event with value 18 will be log Example array[1]	RW/R-/--/--	RW/--/--

#	Object/Attribute	Class	Type	Value	Meaning	Comments	Access Rights - Base FW (M/R/F/P)	Access Rights - Secured FW (SG/SB/P)
					bit=0 not sent bit=1 sent	Bit36=1 the event with value 36 will be sent as notification event		
	"Configuração" Event Log Filter	**1**		**0.1.94.35.115.255**	"Configuração" event log Filter containing log activation and Event Notification activation			
1	logical_name		octet-string[6]	00015E2373FF			R-/R-/--/--	R-/--/--
2	value		Array [2] of Bit-string[256]	**Array[0]** = Default values: 1 for all bits (all events will be log into the buffer) **Array[1] =** Default value: 0 for all bits (no event will be sent as notification event), except "Monthly billing config contract 1 changed", "Monthly billing config contract 2 changed", "Daily billing config contract 1 changed" and "Daily billing config contract 2 changed" events that should be marked as 1	**Array[0]** = Mask filter for log of the event bit =0 NOT log bit=1 log **Array [1]** = Mask filter of events for being asynchronously sent from the server to the client bit=0 not sent bit=1 sent	Example array[0]: If Bit0=0 => Event with value 0 is not log into the buffer. Bit18=1 Event with value 18 will be log Example array[1] Bit36=1 the event with value 36 will be sent as notification event	RW/R-/--/--	RW/--/--
	"Gestão da Procura" Event Log Filter	**1**		**0.1.94.35.109.255**	"Gestão da Procura" event log Filter containing log activation and Event Notification activation			

#	Object/Attribute	Class	Type	Value	Meaning	Comments	Access Rights - Base FW (M/R/F/P)	Access Rights - Secured FW (SG/SB/P)
1	logical_name		octet-string[6]	00015E236DFF			R-/R-/--/--	R-/--/--
2	value		Array [2] of Bit-string[256]	**Array[0]** = Default values: 1 for all bits (all events will be log into the buffer) **Array[1] =** Default value: 0 for all bits (no event will be sent as notification event)	**Array[0]** = Mask filter for log of the event bit =0 NOT log bit=1 log **Array [1]** = Mask filter of events for being asynchronously sent from the server to the client bit=0 not sent bit=1 sent	Example array[0]: If Bit0=0 => Event with value 0 is not log into the buffer. Bit18=1 Event with value 18 will be log Example array[1] Bit36=1 the event with value 36 will be sent as notification event	RW/R-/--/--	RW/--/--
	"Alta Ocorrência" Event Log Filter	**1**		**0.1.94.35.110.255**	"Alta Ocorrência" Event log Filter containing log activation and Event Notification activation			
1	logical_name		octet-string[6]	00015E236EFF			R-/R-/--/--	R-/--/--
2	value		Array [2] of Bit-string[256]	**Array[0]** = Default values: 1 for all bits (all events will be log into the buffer) **Array[1] =** Default value: 0 for all bits (no event will be sent as notification event)	**Array[0]** = Mask filter for log of the event bit =0 NOT log bit=1 log **Array [1]** = Mask filter of events for being asynchronously sent from the server to the client bit=0 not sent	Example array[0]: If Bit0=0 => Event with value 0 is not log into the buffer. Bit18=1 Event with value 18 will be log Example array[1] Bit36=1 the event with value 36 will	RW/R-/--/--	RW/--/--

#	Object/Attribute	Class	Type	Value	Meaning	Comments	Access Rights - Base FW (M/R/F/P)	Access Rights - Secured FW (SG/SB/P)
					bit=1 sent	be sent as notification event		
	"Potência contratada" Event Log Filter	**1**		**0.1.94.35.111.255**	"Potência contratada" event log Filter containing log activation and Event Notification activation			
1	logical_name		octet-string[6]	00015E236FFF			R-/R-/--/--	R-/--/--
2	value		Array [2] of Bit-string[256]	**Array[0]** = Default values: 1 for all bits (all events will be log into the buffer) **Array[1] =** Default value: 0 for all bits (no event will be sent as notification event)	**Array[0]** = Mask filter for log of the event bit =0 NOT log bit=1 log **Array [1]** = Mask filter of events for being asynchronously sent from the server to the client bit=0 not sent bit=1 sent	Example array[0]: If Bit0=0 => Event with value 0 is not log into the buffer. Bit18=1 Event with value 18 will be log Example array[1] Bit36=1 the event with value 36 will be sent as notification event	RW/R-/--/--	RW/--/--
	"Firmware" Event Log Filter	**1**		**0.1.94.35.112.255**	"Firmware" event log Filter containing log activation and Event Notification activation			
1	logical_name		octet-string[6]	00015E2370FF			R-/R-/--/--	R-/--/--
2	value		Array [2] of Bit-string[256]	**Array[0]** = Default values: 1 for all bits (all events will be log into the buffer) **Array[1] =**	**Array[0]** = Mask filter for log of the event bit =0 NOT log bit=1 log	Example array[0]: If Bit0=0 => Event with value 0 is not log into the buffer.	RW/R-/--/--	RW/--/--

#	Object/Attribute	Class	Type	Value	Meaning	Comments	Access Rights - Base FW (M/R/F/P)	Access Rights - Secured FW (SG/SB/P)
				Default value: 0 for all bits (no event will be sent as notification event)	**Array [1]** = Mask filter of events for being asynchronously sent from the server to the client bit=0 not sent bit=1 sent	Bit18=1 Event with value 18 will be log Example array[1] Bit36=1 the event with value 36 will be sent as notification event		
	"Sincronização" Event Log Filter	**1**		**0.1.94.35.113.255**	"Sincronização" event log Filter containing log activation and Event Notification activation			
1	logical_name		octet-string[6]	00015E2371FF			R-/R-/--/--	R-/--/--
2	value		Array [2] of Bit-string[256]	**Array[0]** = Default values: 1 for all bits (all events will be log into the buffer) **Array[1] =** Default value: 0 for all bits (no event will be sent as notification event)	**Array[0]** = Mask filter for log of the event bit =0 NOT log bit=1 log **Array [1]** = Mask filter of events for being asynchronously sent from the server to the client bit=0 not sent bit=1 sent	Example array[0]: If Bit0=0 => Event with value 0 is not log into the buffer. Bit18=1 Event with value 18 will be log Example array[1] Bit36=1 the event with value 36 will be sent as notification event	RW/R-/--/--	RW/--/--
	"ICP" log Filter	**1**		**0.1.94.35.114.255**	"ICP" log Filter containing log activation and Notification event activation			
1	logical_name		octet-string[6]	00015E2372FF			R-/R-/--/--	R-/--/--

#	Object/Attribute	Class	Type	Value	Meaning	Comments	Access Rights - Base FW (M/R/F/P)	Access Rights - Secured FW (SG/SB/P)
2	value		Array [2] of Bit-string[256]	**Array[0]** = Default values: 1 for all bits (all events will be log into the buffer) **Array[1] =** Default value: 0 for all bits (no event will be sent as notification event)	**Array[0]** = Mask filter for log of the event bit =0 NOT log bit=1 log **Array [1]** = Mask filter of events for being asynchronously sent from the server to the client bit=0 not sent bit=1 sent	Example array[0]: If Bit0=0 => Event with value 0 is not log into the buffer. Bit18=1 Event with value 18 will be log Example array[1] Bit36=1 the event with value 36 will be sent as notification event	RW/R-/--/--	RW/--/--
	"Iluminação Pública" Event Log Filter	**1**		**0.1.94.35.116.255**	"Iluminação Pública" event log Filter containing log activation and Event Notification activation			
1	logical_name		octet-string[6]	00015E2374FF			R-/R-/--/--	R-/--/--
2	value		Array [2] of Bit-string[256]	**Array[0]** = Default values: 1 for all bits (all events will be log into the buffer) **Array[1] =** Default value: 0 for all bits (no event will be sent as notification event), except "No consumption when IP is connected" and "Over consumption when IP is disconnected" events that should be marked as 1	**Array[0]** = Mask filter for log of the event bit =0 NOT log bit=1 log **Array [1]** =	Example array[0]: If Bit0=0 => Event with value 0 is not log into the buffer. Bit18=1 Event with value 18 will be log	RW/R-/--/--	RW/--/--

#	Object/Attribute	Class	Type	Value	Meaning	Comments	Access Rights - Base FW (M/R/F/P)	Access Rights - Secured FW (SG/SB/P)
					Mask filter of events for being asynchronously sent from the server to the client bit=0 not sent bit=1 sent	Example array[1] Bit36=1 the event with value 36 will be sent as notification event		
	Correct Security Operations Event Log Filter	**1**		**0.1.94.35.117.255**	Correct Security Operations event log Filter containing log activation and Event Notification activation	Only applicable to EMIs with cibersecurity extension FW		
1	logical_name		octet-string[6]	00015E2375FF			R-/R-/--/--	R-/--/--
2	value		Array [2] of Bit-string[256]	**Array[0]** = Default values: 1 for all bits (all events will be log into the buffer) **Array[1] =** Default value: 0 for all bits (no event will be sent as notification event), except "Keys Reset" event that should be marked as 1	**Array[0]** = Mask filter for log of the event bit =0 NOT log bit=1 log **Array [1]** = Mask filter of events for being asynchronously sent from the server to the client bit=0 not sent bit=1 sent	Example array[0]: If Bit0=0 => Event with value 0 is not log into the buffer. Bit18=1 Event with value 18 will be log Example array[1] Bit36=1 the event with value 36 will be sent as notification event	R-/R-/--/--	RW/--/--
	Fault Security Operations Event Log Filter	**1**		**0.1.94.35.118.255**	Fault Security Operations event log Filter containing log activation and Event Notification activation	Only applicable to EMIs with cibersecurity extension FW		

#	Object/Attribute	Class	Type	Value	Meaning	Comments	Access Rights - Base FW (M/R/F/P)	Access Rights - Secured FW (SG/SB/P)
1	logical_name		octet-string[6]	00015E2376FF			R-/R-/--/--	R-/--/--
2	value		Array [2] of Bit-string[256]	**Array[0]** = Default values: 1 for all bits (all events will be log into the buffer) **Array[1] =** Default value: 0 for all bits (no event will be sent as notification event)	**Array[0]** = Mask filter for log of the event bit =0 NOT log bit=1 log **Array [1]** = Mask filter of events for being asynchronously sent from the server to the client bit=0 not sent bit=1 sent	Example array[0]: If Bit0=0 => Event with value 0 is not log into the buffer. Bit18=1 Event with value 18 will be log Example array[1] Bit36=1 the event with value 36 will be sent as notification event	R-/R-/--/--	RW/--/--

5.5.9 Controlo de Potência e respetivos registos

#	Object/Attribute	Class	Type	Value	Meaning	Comments	Access Rights - Base FW (M/R/F/P)	Access Rights - Secured FW (SG/SB/P)
	Disconnect control Scheduler	**22**		**0.0.15.0.1.255**				
1	Logical_name		octet-string[6]	00000F0001FF			R-/R-/--/--	R-/--/--
2	executed_script		Script	{0.0.10.0.106.255 ,x}		x represents the script identifier, by default x set to 0 -> no action triggered by default. x= 1 (1st script -> Disconnect x=2 (2nd script -> Reconnect)	RW/R-/--/--	RW/--/--
3	Type		Enum	1			R-/R-/--/--	R-/--/--
4	execution_time		array		Time;date		RW/R-/--/--	RW/--/--
	Disconnect Script Table	**9**		**0.0.10.0.106.255**				
1	logical_name		octet-string[6]	00000A006AFF			R-/R-/--/--	R-/--/--

2	scripts		array[2][1]	{
				{1,{2,70, 0.0.96.3.10.255,1 ,0}}, //disconnect script
				{2,{2,70, 0.0.96.3.10.255,2 ,0}} //reconnect script
				}
							R-/R-/--/--	R-/--/--

1	execute		Long-unsigned	0			-W/--/--/--	-W/--/--
	Disconnect Control	**70**		**0.0.96.3.10.255**	Controls the connection and disconnection of the premises of the consumer	Description see additional doc		
1	logical_name		octet-string[6]	000060030AFF			R-/R-/--/--	R-/--/--
2	output_state		boolean				R-/R-/--/--	R-/--/--
3	control_state		enum	0;1;2	(0): Disconnected (1): Connected		R-/R-/--/--	R-/--/--

#	Object/Attribute	Class	Type	Value	Meaning	Comments	Access Rights - Base FW (M/R/F/P)	Access Rights - Secured FW (SG/SB/P)
					(2):Ready for Re-connection (Manually)			
4	control_mode		enum	4	See Additional Docs	Reconnection from the household means manual reconnection .	RW/R-/--/--	RW/--/--
1	remote_disconnect						-W/--/--/--	-W/--/--
2	remote_connect						-W/--/--/--	-W/--/--
	Previous Disconnect Control	**70**		**0.1.94.35.20.255**	Controls the connection and disconnection of the premises of the consumer previous status			
1	logical_name		octet-string[6]	00015E2314FF			R-/R-/--/--	R-/--/--
2	output_state		boolean				R-/R-/--/--	R-/--/--
3	control_state		enum	0;1;2	(0): Disconnected (1): Connected (2):Ready for Re-connection (Manually)		R-/R-/--/--	R-/--/--
4	control_mode		enum		See Additional Docs		R-/R-/--/--	R-/--/--
	Event Object - "ICP" log	**1**		**0.0.96.11.2.255**				
1	logical_name		octet-string[6]	0000600B02FF			R-/R-/--/--	R-/--/--
2	value		unsigned		event number (0 to 255)		R-/R-/--/--	R-/--/--
	"ICP" log	**7**		**0.0.99.98.2.255**	Changes of the states related to the disconnect control are recorded (changing threshold, connect, disconnect)			
1	logical_name		octet-string[6]	0000636202FF			R-/R-/--/--	R-/--/--
2	buffer		array		selective access per range		R-/R-/--/--	R-/--/--
3	capture_objects		array	{8,0.0.1.0.0.255,2, 0} {1,0.0.96.11.2.255,2, 0} {70,0.1.94.35.20.255,3,0} {70,0.0.96.3.10.255,3,0}	clock; control event code; previous disconnect control status; current disconnect control status		R-/R-/--/--	R-/--/--

#	Object/Attribute	Class	Type	Value	Meaning	Comments	Access Rights - Base FW (M/R/F/P)	Access Rights - Secured FW (SG/SB/P)
				{3,0.1.94.35.31.255,2,0} {1,0.1.94.35.21.255,2,0}	currently apparent power threshold ICP power control Inhibition value			
4	capture_period		double-long-unsigned	0	asynchronously		R-/R-/--/--	R-/--/--
5	sort_method		enum	1	unsorted (FIFO)		R-/R-/--/--	R-/--/--
6	sort_object		object definition	none	unsorted		R-/R-/--/--	R-/--/--
7	entries_in_use		double-long-unsigned				R-/R-/--/--	R-/--/--
8	profile_entries		double-long-unsigned	≥20			R-/R-/--/--	R-/--/--
1	reset						-W/--/--/--	-W/--/--
2	capture				optional, has no meaning		-W/--/--/--	-W/--/--
	Apparent Power over threshold status	**1**		**0.1.94.35.30.255**				
1	logical_name		octet-string[6]	00015E231EFF			R-/R-/--/--	R-/--/--
2	value		boolean		True: Apparent power + is over threshold		R-/R-/--/--	R-/--/--
	Currently Apparent Power Threshold	**3**		**0.1.94.35.31.255**				
1	logical_name		octet-string[6]	00015E231FFF			R-/R-/--/--	R-/--/--
2	value		double-long-unsigned		Value of currently active power threshold		R-/R-/--/--	R-/--/--
3	scaler_unit		scal_unit_type	{0,28}	scaler=0, unit=VA resolution: 000.000 kVA		R-/R-/--/--	R-/--/--
	Maximum Apparent Power per phase (S_{PMF})	**3**		**0.1.94.35.32.255**		Only polyphase meters		
1	logical_name		octet-string[6]	00015E2320FF			R-/R-/--/--	R-/--/--
2	value		double-long-unsigned	0	Valid values: - [0, 55200] for three-phase meters, expressed in VA; - with: - "0" = Function disabled; - "55200" as a result of 3*230V*80A		RW/R-/--/--	RW/--/--
3	scaler_unit		scal_unit_type	{0,28}	scaler=0, unit=VA		R-/R-/--/--	R-/--/--

#	Object/Attribute	Class	Type	Value	Meaning	Comments	Access Rights - Base FW (M/R/F/P)	Access Rights - Secured FW (SG/SB/P)
					resolution: 000.000 kVA			
	parameter Q - ICP	1		0.0.128.30.1.255	parameter Q - ICP			
1	logical_name		octet-string[6]	0000801E01FF			R-/R-/--/--	R-/--/--
2	value		double-long-unsigned	50	Value of parameter Q of the ICP		RW/R-/--/--	RW/--/--
	parameter k - ICP	1		0.0.128.30.2.255	parameter k - ICP			
1	logical_name		octet-string[6]	0000801E02FF			R-/R-/--/--	R-/--/--
2	value		double-long-unsigned	120 (single-phase meter) 130 (three-phase meter)	Value of parameter Q of the ICP		RW/R-/--/--	RW/--/--
3	scaler_unit		scal_unit_type	{0,56}	scaler=0, unit=%		R-/R-/--/--	R-/--/--
	parameter Ic - ICP	1		0.0.128.30.3.255	parameter Ic - ICP			
1	logical_name		octet-string[6]	0000801E03FF			R-/R-/--/--	R-/--/--
2	value		double-long-unsigned		Value of parameter Ic of the ICP		R-/R-/--/--	R-/--/--
	ICP power control Inhibition	1		0.1.94.35.21.255				
1	logical_name		octet-string[6]	00015E2315FF			R-/R-/--/--	R-/--/--
2	value		enum	0;1 0 = default value	(0): All triggers associated with local_disconnect transition, in Disconnect control object, are enabled. (1): Trigger associated with "Currently Active Power Threshold" is inhibited. In this case, the local_disconnect transition due to active power limitation is inhibited.		RW/R-/--/--	RW/--/--
	ICP export power control Activation	1		0.1.94.35.22.255				
1	logical_name		octet-string[6]	00015E2316FF			R-/R-/--/--	R-/--/--
2	value		enum	0;1 0 = default value	(0): The power control is made only for imported power. (1): The power control is made for imported and exported power.		RW/R-/--/--	RW/--/--

5.5.10 Atualização de *Firmware*

#	Object/Attribute	Class	Type	Value	Meaning	Comments	Access Rights - Base FW (M/R/F/P)	Access Rights - Secured FW (SG/SB/P)
	Image Transfer	**18**		**0.0.44.0.0.255**	Allows transfer of Firmware Image(s) to COSEM servers			
1	logical_name		octet-string[6]	00002C0000FF			--/--/R-/--	R-/R-/--
2	image_block_size		double-long- unsigned	Between 64 and 128			--/--/RW/--	RW/RW/--
3	image_transferred_blocks_status		bit-string				--/--/R-/--	R-/R-/--
4	image_first_not_transferred_block_number		double-long-unsigned				--/--/R-/--	R-/R-/--
5	image_transfer_enabled		boolean				--/--/RW/--	RW/RW/--
6	image_transfer_status		enumerated				--/--/R-/--	R-/R-/R-
7	image_to_activate_info		array				--/--/R-/--	R-/R-/--
1	image_transfer_initiate						--/--/-W/--	-W/-W/--
2	image_block_transfer						--/--/-W/--	-W/-W/--
3	image_verify						--/--/-W/--	-W/-W/--
4	image_activate						--/--/-W/--	-W/-W/--
	Image Activation Scheduler	**22**		**0.0.15.0.2.255**	Activate new firmware			
1	logical_name		octet-string[6]	00000F0002FF			--/--/R-/--	R-/R-/--
2	Executed_script		script	0-0:10.0.107.255			--/--/R-/--	R-/R-/--
3	Type		enum	1:Fixed time			--/--/R-/--	R-/R-/--
4	Execution_time		array	Time; Date	Concrete time point for activation		--/--/RW/--	RW/RW/--
	Predefined Scripts – Image Activation	**9**		**0.0.10.0.107.255**				
1	logical_name		octet-string[6]	00000A006BFF			--/--/R-/--	R-/R-/--
2	scripts		array				--/--/R-/--	R-/R-/--
1	Execute					The activation of this scripts is performed by calling the	--/--/-W/--	-W/-W/--

#	Object/Attribute	Class	Type	Value	Meaning	Comments	Access Rights - Base FW (M/R/F/P)	Access Rights - Secured FW (SG/SB/P)
						execute() method to the script identifier of the corresponding script object		

5.5.11 Objetos do Visor

#	Object/Attribute	Class	Type	Value	Meaning	Comments	Access Rights - Base FW (M/R/F/P)	Access Rights - Secured FW (SG/SB/P)
	General Display Readout (Auto scroll sequence)	**7**		**0.0.21.0.1.255**	Defines the list of values in the display for Auto Scroll sequence			
1	logical_name		octet-string[6]	0000150001FF			R-/R-/--/--	R-/--/--
3	capture_objects		array	{1,1.0.0.9.1.255,2}; {1,1.0.0.9.2.255,2}; {20,0.0.13.0.1.255,2}; {3,1.0.1.8.1.255,2}; {3,1.0.1.8.2.255,2}; {3,1.0.1.8.3.255,2}; {1,1.0.0.2.0.255,2}	date; time; tariff scheme identifier (calendar_name_active); Energy rated registers("1º Ciclo Tarifário")(+A); active core firmware version	By default, the array list is the defined. However it must be possible to define the list of values in the array.	RW/R-/--/--	RW/--/--
4	capture_period		double-long-unsigned	0			R-/R-/--/--	R-/--/--
	Alternative Display Readout (Manual scroll sequence)	**7**		**0.0.21.0.2.255**	Defines the list of values in the display for Manual Scroll sequence			
1	logical_name		octet-string[6]	0000150002FF			R-/R-/--/--	R-/--/--
3	capture_objects		array	{1,0.0.96.1.0.255,2}; {1,1.0.0.9.1.255,2}; {1,1.0.0.9.2.255,2}; {20,0.0.13.0.1.255,2}; {3,1.0.1.8.1.255,2}; {3,1.0.1.8.2.255,2};	Device Identification 1; date; time; tariff scheme identifier (calendar_name_active); Energy rated registers("1º Ciclo Tarifário");	By default, the array list is the defined. However it must be possible to define the list of values in the array.	RW/R-/--/--	RW/--/--

#	Object/Attribute	Class	Type	Value	Meaning	Comments	Access Rights - Base FW (M/R/F/P)	Access Rights - Secured FW (SG/SB/P)
				{3,1.0.1.8.3.255,2}; {4,1.0.1.6.10.255,2}; {4,1.0.1.6.10.255,5}; {3,0.1.94.35.31.255,2}; {1,1.0.0.2.0.255,2} {1,1.1.0.2.0.255,2}; {1,1.2.0.2.0.255,2};	Maximum Demand Active Power (+A); Timestamp Maximum Demand Active Power (+A) (contract 1); currently apparent power threshold (does not apply to EMI IP) active core firmware version active application firmware version active communication firmware version (does not apply to EMI IP)			
4	capture_period		double-long-unsigned	0			R-/R-/--/--	R-/--/--
	Time for Scroll Display	**3**		**0.0.94.35.110.255**				
1	logical_name		octet-string[6]	00005E236EFF			R-/R-/--/--	R-/--/--
2	Value		Double-long-unsigned	5	Valid values: - >= 0 expressed in seconds; - "5" as default value;		RW/R-/--/--	RW/--/--
3	scaler_unit		scal_unit_type	{0,7}	scale=0, unit=seconds		R-/R-/--/--	R-/--/--
	Timeout for return to auto scroll mode	**3**		**0.0.94.35.111.255**				
1	logical_name		octet-string[6]	00005E236FFF			R-/R-/--/--	R-/--/--
2	Value		Double-long-unsigned	60	Valid values: - >= 0 expressed in seconds; - "60" as default value;		RW/R-/--/--	RW/--/--
3	scaler_unit		scal_unit_type	{0,7}	scale=0, unit=seconds		R-/R-/--/--	R-/--/--

5.5.12 Gestão da Procura

#	Object/Attribute	Class	Type	Value	Meaning	Comments	Access Rights - Base FW (M/R/F/P)	Access Rights - Secured FW (SG/SB/P)
	Demand Management Period Definition Object	**1**		**0.1.94.35.60.255**	-			
1	logical_name		octet-string[6]	00015E233CFF			R-/R-/--/--	R-/R-/--

2	value		array[1]
			{
			structure[5]
			{
			enum
			type_of_period
			octet-string[12]
			start_date_time
			octet-string[12]
			end_date_time
			integer
			decrease_percentage
			double-long-unsigned
			absolute_power_value
			}
			}
					-'**type_of_period**: defines the type of demand management period
					- 1 for non-critical period
					- 2 for critical period
					- Any other value must be rejected by the meter
					- **start_date_time**: defines the start date and time of the demand management period. Same format as attribute 2 of "Clock" object.
					- **end_date_time**: defines the end date and time of the demand management period. Same format as attribute 2 of "Clock" object.
					- **decrease_percentage**: integer ranging from 0 (for 0%) to 100 (for 100%), indicating the percentage of reduction of the contracted power to apply during critical periods. "0" means that the value is undefined.
					- **absolute_power_value**: indicates the absolute power value to use during critical periods, expressed in VA Should only accept the following values:
					- [0, 13800] for single-phase meters, expressed in VA;
					- [0, 55200] for three-phase meters, expressed in VA
					- with:
					- "0" means that the value is undefined;
					- "13800" as a result of 230V*60A;
							RW/R-/--/--	RW/RW/--

#	Object/Attribute	Class	Type	Value	Meaning	Comments	Access Rights - Base FW (M/R/F/P)	Access Rights - Secured FW (SG/SB/P)
					- "55200" as a result of 3*230V*80A;			
	Residual Power Threshold Object	**3**		**0.1.94.35.61.255**	-			
1	logical_name		octet-string[6]	00015E233DFF			R-/R-/--/--	R-/R-/--
2	value		double-long-unsigned		Defines the power threshold value to use when a non-critical demand management period is in progress. Should only accept the following values: - [0, 13800] for single-phase meters, expressed in VA; - [0, 55200] for three-phase meters, expressed in VA; - with: - "0" means that the value is undefined; - "13800" as a result of 230V*60A; - "55200" as a result of 3*230V*80A;		RW/R-/--/--	RW/RW/--
3	scaler_unit		scal_unit_type	{0, 28}	Scaler = 0, unit = VA		R-/R-/--/--	R-/R-/--
	Duration of Critical Demand Management Periods Object	**3**		**0.1.94.35.62.255**	-			
1	logical_name		octet-string[6]	00015E233EFF			R-/R-/--/--	R-/R-/--
2	value		double-long-unsigned		Contains the total cumulated duration of critical demand management periods, expressed in seconds		R-/R-/--/--	R-/R-/--
3	scaler_unit		scal_unit_type	{0, 7}	Scaler = 0, unit = seconds		R-/R-/--/--	R-/R-/--
	Duration of Non-Critical Demand Management Periods Object	**3**		**0.1.94.35.63.255**	-			
1	logical_name		octet-string[6]	00015E233FFF			R-/R-/--/--	R-/R-/--
2	value		double-long-unsigned		Contains the total cumulated duration of non-critical demand management periods, expressed in seconds		R-/R-/--/--	R-/R-/--
3	scaler_unit		scal_unit_type	{0, 7}	Scaler = 0, unit = seconds		R-/R-/--/--	R-/R-/--

#	Object/Attribute	Class	Type	Value	Meaning	Comments	Access Rights - Base FW (M/R/F/P)	Access Rights - Secured FW (SG/SB/P)
	Demand Management Status	1		0.1.94.35.64.255	-			
1	logical_name		octet-string[6]	00015E2340FF			R-/R-/--/--	R-/R-/--
2	value		enum	0;1;2	Returns the demand management period currently active: (0): No active period (1): Non-critical period (2): Critical period		R-/R-/--/--	R-/R-/--

5.5.13 Iluminação Pública (IP)

#	Object/Attribute	Class	Type	Value	Meaning	Comments	Access Rights - Base FW (M/R/F/P)	Access Rights - Secured FW (SG/SB/P)
	Output Relay Control 1	**70**		**0.1.96.3.10.255**				
1	logical_name		octet-string[6]	000160030AFF			R-/R-/--/--	R-/--/--
2	output_state		boolean				R-/R-/--/--	R-/--/--
3	control_state		enum	0;1	(0): Disconnected (1): Connected		R-/R-/--/--	R-/--/--
4	control_mode		enum	4			RW/R-/--/--	RW/--/--
1	remote_disconnect		integer				-W/--/--/--	-W/--/--
2	remote_connect		integer				-W/--/--/--	-W/--/--
	Output Relay Control 2	**70**		**0.2.96.3.10.255**				
1	logical_name		octet-string[6]	000260030AFF			R-/R-/--/--	R-/--/--
2	output_state		boolean				R-/R-/--/--	R-/--/--
3	control_state		enum	0;1	(0): Disconnected (1): Connected		R-/R-/--/--	R-/--/--
4	control_mode		enum	4			RW/R-/--/--	RW/--/--
1	remote_disconnect		integer				-W/--/--/--	-W/--/--
2	remote_connect		integer				-W/--/--/--	-W/--/--
	IP control – Output relay 1 operating mode configuration	**1**		**0.1.94.35.40.255**	**Operating mode configuration for output relay 1**			
1	logical_name		octet-string[6]	00015E2328FF			R-/R-/--/--	R-/--/--
2	value		Enum	(4): Clock+Table combined (default mode)	enum: defines the operating mode for the control of public lighting: (0): IP switch off - permanent state (1): IP switch on - permanent state (2): Astronomical clock (default mode) (3): Time switching table (4): Clock+Table combined (default mode)	(0): single action to execute remote_disconnect method; (1): single action to execute remote_connect method; (2), (3), (4): scheduled actions to execute remote_connect and remote_disconnect methods.	RW/R-/--/--	RW/--/--

#	Object/Attribute	Class	Type	Value	Meaning	Comments	Access Rights - Base FW (M/R/F/P)	Access Rights - Secured FW (SG/SB/P)
	IP control – Output relay 2 operating mode configuration	**1**		**0.1.94.35.140.255**	**Operating mode configuration for output relay 2**			
1	logical_name		octet-string[6]	00015E238CFF			R-/R-/--/--	R-/--/--
2	value		Enum	(4): Clock+Table combined (default mode)	enum: defines the operating mode for the control of public lighting: (0): IP switch off - permanent state (1): IP switch on - permanent state (2): Astronomical clock (default mode) (3): Time switching table (4): Clock+Table combined (default mode)	(0): single action to execute remote_disconnect method; (1): single action to execute remote_connect method; (2), (3), (4): scheduled actions to execute remote_connect and remote_disconnect methods.	RW/R-/--/--	RW/--/--
	IP control - Time switching table for output relay 1	**1**		**0.1.94.35.41.255**	**Time switching table for output relay 1**			
1	logical_name		octet-string[6]	00015E2329FF			R-/R-/--/--	R-/--/--

2	value		array[366]
			{
			structure[4]
			{
			begin_date: date
			end_date: date
			switch_OFF_time: time
			switch_ON_time: time
			}
				(Default value)
				array[1]
				structure
				{
				FFFFFFFFFF
				FFFFFFFFFF
				FFFFFFFF
				FFFFFFFF
					- **begin_date:** begin date of the period of time while the switch OFF and switch ON transitions are applied;
					- **end_date:** end date of the period of time while the switch OFF and switch ON transitions are applied;
					- **switch_OFF_time**: time trigger for public lighting switch OFF;
					- **switch_ON_time:** time trigger for public lighting switch ON.
							RW/R-/--/--	RW/--/--

#	Object/Attribute	Class	Type	Value	Meaning	Comments	Access Rights - Base FW (M/R/F/P)	Access Rights - Secured FW (SG/SB/P)
			}	}				
	IP control - Time switching table for output relay 2	**1**		**0.1.94.35.141.255**	**Time switching table for output relay 2**			
1	logical_name		octet-string[6]	00015E238DFF			R-/R-/--/--	R-/--/--

2	value		array[366]
			{
			structure[4]
			{
			begin_date: date
			end_date: date
			switch_OFF_time: time
			switch_ON_time: time
			}
			}
				(Default value)
				array[1]
				structure
				{
				FFFFFFFFFF
				FFFFFFFFFF
				FFFFFFFF
				FFFFFFFF
				}
					- begin_date: begin date of the period of time while the switch OFF and switch ON transitions are applied;
					- end_date: end date of the period of time while the switch OFF and switch ON transitions are applied;
					- **switch_OFF_time**: time trigger for public lighting switch OFF;
					- **switch_ON_time:** time trigger for public lighting switch ON;
							RW/R-/--/--	RW/--/--

	IP control - Astronomical clock information	**1**		**0.1.94.35.42.255**				
1	logical_name		octet-string[6]	00015E232AFF			R-/R-/--/--	R-/--/--

2	value		array[31]
			{
			structure[3]
			{
			calendar_date: date
			astro_sunrise_time: time
			astro_sunset_time: time
			}
			}
					Returns information about astronomical clock sunrise and sunset times for the present day and the next 30 days (reference date=current date).
					
					Table update according to FIFO method.
							R-/R-/--/--	R-/--/--

#	Object/Attribute	Class	Type	Value	Meaning	Comments	Access Rights - Base FW (M/R/F/P)	Access Rights - Secured FW (SG/SB/P)
	Public lighting circuit fault status	**1**		**0.1.94.35.43.255**				
1	logical_name		octet-string[6]	00015E232BFF			R-/R-/--/--	R-/--/--
2	value		Enum	0	Returns the current fault status of the public lighting circuit: (0)- No fault; (1)- No consumption in IP circuit with "IP control - current status" **connected.** (2)- Consumption higher then the configured threshold with"IP control - current status" **disconnected.** (3) - Consumption in IP circuit under the configured minimum threshold with "IP control - current status" **connected**. (4) - Consumption in IP circuit over the configured maximum threshold with "IP control - current status" **connected**. Remark: If the conditions to trigger status (1) and (3) are simultaneously present, the critical status (1) shall prevail.		R-/R-/--/--	R-/--/--
	Power threshold for over consumption verification - IP circuit disconnected state	**3**		**0.1.94.35.44.255**				
1	logical_name		octet-string[6]	00015E232CFF			R-/R-/--/--	R-/--/--
2	value		double-long-unsigned	0	Value of the power threshold for over consumption validation when the IP circuit status is disconnected Valid value: - [0, 55200] expressed in W		RW/R-/--/--	RW/--/--
3	scaler_unit		scal_unit_type	{0,27}	scaler=0, unit=W		R-/R-/--/--	R-/--/--
	Overall minimum power threshold for IP circuit	**3**		**0.1.94.35.45.255**				
1	logical_name		octet-string[6]	00015E232DFF			R-/R-/--/--	R-/--/--
2	value		double-long-unsigned	0	Value of the overall minimum power threshold for IP circuit Valid value: - [0, 55200] expressed in W		RW/R-/--/--	RW/--/--

#	Object/Attribute	Class	Type	Value	Meaning	Comments	Access Rights - Base FW (M/R/F/P)	Access Rights - Secured FW (SG/SB/P)
3	scaler_unit		scal_unit_type	{0,27}	scaler=0, unit=W		R-/R-/--/--	R-/--/--
	Overall maximum power threshold for IP circuit	**3**		**0.1.94.35.46.255**				
1	logical_name		octet-string[6]	00015E232EFF			R-/R-/--/--	R-/--/--
2	value		double-long-unsigned	55200	Value of the overall maximum power threshold for IP circuit Valid value: - [0, 55200] expressed in W		RW/R-/--/--	RW/--/--
3	scaler_unit		scal_unit_type	{0,27}	scaler=0, unit=W		R-/R-/--/--	R-/--/--
	IP control status - Output relay 1 last transition	**7**		**0.1.94.35.47.255**	**Information retaled to last transition of output relay 1**			
1	logical_name		octet-string[6]	00015E232FFF			R-/R-/--/--	R-/--/--
2	buffer		array				R-/R-/--/--	R-/--/--

3	capture_objects		array[1]
			
			{
			
			structure [3]
			
			{
			
			clock: date_time (octet-string)
			output_state: boolean
			last_transition_trigger: enum
			}
			}
				{8, 0.0.1.0.0.255, 2, 0}
				{70, 0.1.96.3.10.255, 2,0}
				{1, 0.1.94.35.40.255, 2, 0}
					The following information is captured:
					
					- **clock:** timestamp of last IP control status change;
					
					- **output_state:** indication of IP output status after the last change;
					
					- **last_transition_trigger:** feature that originated the last IP control status change.
							R-/R-/--/--	R-/--/--

4	capture_period		double-long-unsigned	0	Asynchronously	Triggered by any execution of the script to open or close relay	R-/R-/--/--	R-/--/--
5	sort_method		Enum	1	unsorted (FIFO)		R-/R-/--/--	R-/--/--
6	sort_object		capture object definition	None	none		R-/R-/--/--	R-/--/--
7	entries_in_use		double-long-unsigned				R-/R-/--/--	R-/--/--
8	profile_entries		double-long-unsigned	6				

#	Object/Attribute	Class	Type	Value	Meaning	Comments	Access Rights - Base FW (M/R/F/P)	Access Rights - Secured FW (SG/SB/P)
	IP control status - Output relay 2 last transition	**7**		**0.1.94.35.147.255**	**Information retaled to last transition of output relay 2**			
1	logical_name		octet-string[6]	00015E2393FF			R-/R-/--/--	R-/--/--
2	buffer		array				R-/R-/--/--	R-/--/--

3	capture_objects		array[1]
			{
			structure [3]
			{
			clock: date_time (octet-string)
			output_state: boolean
			last_transition_trigger: enum
			}
			}
				{8, 0.0.1.0.0.255, 2, 0}
				{70, 0.2.96.3.10.255, 2,0}
				{1, 0.1.94.35.140.255, 2, 0}
					The following information is captured:
					- **clock:** timestamp of last IP control status change;
					- **output_state:** indication of IP output status after the last change;
					- **last_transition_trigger:** feature that originated the last IP control status change.
							R-/R-/--/--	R-/--/--

4	capture_period		double-long-unsigned	0	Asynchronously	Triggered by any execution of the script to open or close relay	R-/R-/--/--	R-/--/--
5	sort_method		Enum	1	unsorted (FIFO)		R-/R-/--/--	R-/--/--
6	sort_object		capture object definition	None	none		R-/R-/--/--	R-/--/--
7	entries_in_use		double-long-unsigned				R-/R-/--/--	R-/--/--
8	profile_entries		double-long-unsigned	6				
	IP control – Output relay 1 time offsets table	**1**		**0.1.94.35.48.255**	**Time offsets for output relay 1**			
1	logical_name		octet-string[6]	00015E2330FF			R-/R-/--/--	R-/--/--
2	value		array[12] { structure[4] {	(Default value) array[1] structure	- **begin_date:** begin date of the period of time while the offsets are applied. - **end_date:** end of the period of time while the offsets are applied.		RW/R-/--/--	RW/--/--

#	Object/Attribute	Class	Type	Value	Meaning	Comments	Access Rights - Base FW (M/R/F/P)	Access Rights - Secured FW (SG/SB/P)

			begin_date: date
			end_date: date
			offset_OFF: long
			offset_ON: long
			}
			}
				{
				FFFFFFFFFF
				FFFFFFFFFF
				0
				0
				}
					- **offset_OFF:** offset to be applied to switch OFF transition. Default value 0 seconds.
					- **offset_ON:** offset to be applied to switch ON transition. Default value 0 seconds.			

	IP control – Output relay 2 time offsets table	**1**		**0.1.94.35.148.255**	**Time offsets for output relay 2**			
1	logical_name		octet-string[6]	00015E2394FF			R-/R-/--/--	R-/--/--

2	value		array[12]
			{
			structure[4]
			{
			begin_date: date
			end_date: date
			offset_OFF: long
			offset_ON: long
			}
			}
				(Default value)
				array[1]
				structure
				{
				FFFFFFFFFF
				FFFFFFFFFF
				0
				0
				}
					- **begin_date:** begin date of the period of time while the offsets are applied.
					- **end_date:** end of the period of time while the offsets are applied.
					- **offset_OFF:** offset to be applied to switch OFF transition. Default value 0 seconds.
					- **offset_ON:** offset to be applied to switch ON transition. Default value 0 seconds.
							RW/R-/--/--	RW/--/--

	IP control - general information status of output relay 1	**1**		**0.1.94.35.49.255**	**General information of output relay 1**			
1	logical_name		octet-string[6]	00015E2331FF			R-/R-/--/--	R-/--/--
2	value		structure { current_IP_output_state: boolean current_operating_mode: enum		Returns the the following aggregated information about the IP control: - **current_IP_output_state:** TRUE - IP Connected (Output relay closed) FALSE - IP Disconnected (Output relay opened)			

#	Object/Attribute	Class	Type	Value	Meaning	Comments	Access Rights - Base FW (M/R/F/P)	Access Rights - Secured FW (SG/SB/P)
			next_switch_OFF_transition: date_time next_switch_ON_transition: date_time }		- **current_operating_mode:** (0): IP switch off - permanent state (1): IP switch on - permanent state (2): Astronomical clock (3): Time switching table (4): Clock+Table combined - **next_switch_OFF_transition:** Date and time of the next switch OFF transition, accordingly to the current configuration (operanting mode and offsets) - **next_switch_ON_transition:** Date and time of the next switch ON transition, accordingly to the current configuration (operanting mode and offsets)		R-/R-/--/--	R-/--/--
	IP control - general information status of output relay 2	**1**		**0.1.94.35.149.255**	**General information of output relay 2**			
1	logical_name		octet-string[6]	00015E2395FF			R-/R-/--/--	R-/--/--

2	value		structure
			{
			current_IP_output_state: boolean
			current_operating_mode: enum
			next_switch_OFF_transition: date_time
			next_switch_ON_transition: date_time
			}
					Returns the the following aggregated information about the IP control:
					- **current_IP_output_state:**
					TRUE - IP Connected (Output relay closed)
					FALSE - IP Disconnected (Output relay opened)
					- **current_operating_mode:**
					(0): IP switch off - permanent state
					(1): IP switch on - permanent state
					(2): Astronomical clock
					(3): Time switching table			

#	Object/Attribute	Class	Type	Value	Meaning	Comments	Access Rights - Base FW (M/R/F/P)	Access Rights - Secured FW (SG/SB/P)
					(4): Clock+Table combined - **next_switch_OFF_transition:** Date and time of the next switch OFF transition, accordingly to the current configuration (operanting mode and offsets) - **next_switch_ON_transition:** Date and time of the next switch ON transition, accordingly to the current configuration (operanting mode and offsets)		R-/R-/--/--	R-/--/--
	IP control status - Output relay 1 last transition's trigger	**1**		**0.1.94.35.50.255**	**Origin for the last transtition of output relay 1**			
1	logical_name		octet-string[6]	00015E2332FF			R-/R-/--/--	R-/--/--
2	value		Enum		Defines the feature that originated the last transition of output relay 1: (0): IP switch off - permanent state (1): IP switch on - permanent state (2): Astronomical clock (3): Time switching table (4): Not used (255): Direct command Remark: When the current IP control operating mode is 4 (Clock+Table combined) this enum must specify if the last transition was originated from the astronomical clock algorithm (2) or a time switching table entry (3).		R-/R-/--/--	R-/--/--
	IP control status - Output relay 2 last transition's trigger	**1**		**0.1.94.35.150.255**	**Origin for the last transtition of output relay 2**			
1	logical_name		octet-string[6]	00015E2396FF			R-/R-/--/--	R-/--/--
2	value		Enum		Defines the feature that originated the last transition of output relay 2: (0): IP switch off - permanent state (1): IP switch on - permanent state (2): Astronomical clock (3): Time switching table (4): Not used (255): Direct command		R-/R-/--/--	R-/--/--

#	Object/Attribute	Class	Type	Value	Meaning	Comments	Access Rights - Base FW (M/R/F/P)	Access Rights - Secured FW (SG/SB/P)
					Remark: When the current IP control operating mode is 4 (Clock+Table combined) this enum must specify if the last transition was originated from the astronomical clock algorithm (2) or a time switching table entry (3).			

5.5.14 Outros objetos abstratos

#	Object/Attribute	Class	Type	Value	Meaning	Comments	Access Rights - Base FW (M/R/F/P)	Access Rights - Secured FW (SG/SB/P)
	Metering point ID	**1**		**0.0.96.1.10.255**				
1	logical_name		octet-string[6]	000060010AFF			R-/R-/--/--	R-/--/--
2	value		octet-string[22]	CPE[20]	Portuguese identificacion of client metering point(CPE)		RW/R-/--/--	RW/--/--
	Secure Broadcast PLC Client GUEK ID	**1**		**0.1.94.35.70.255**	Only applicable to EMIs with cibersecurity extension FW			
1	logical_name		octet-string[6]	00015E2346FF			--/--/--/--	R-/R-/--
2	value		Double-long-unsigned		First 32bits of (SHA256(GUEK Broadcast))		--/--/--/--	R-/R-/--
	Secure Broadcast PLC Client GAK ID	**1**		**0.1.94.35.71.255**	Only applicable to EMIs with cibersecurity extension FW			
1	logical_name		octet-string[6]	00015E2347FF			--/--/--/--	R-/R-/--
2	value		Double-long-unsigned		First 32bits of (SHA256(GAK Broadcast))		--/--/--/--	R-/R-/--
	Secure Broadcast PLC Client GBEK ID	**1**		**0.1.94.35.72.255**	Only applicable to EMIs with cibersecurity extension FW			
1	logical_name		octet-string[6]	00015E2348FF			--/--/--/--	R-/R-/--
2	value		Double-long-unsigned		First 32bits of (SHA256(GBEK Broadcast))		--/--/--/--	R-/R-/--
	Public Key Firmware Verification ID	**1**		**0.1.94.35.73.255**	Only applicable to EMIs with cibersecurity extension FW			
1	logical_name		octet-string[6]	00015E2349FF			R-/R-/R-/R-	R-/R-/R-
2	value		Double-long-unsigned		First 32bits of (SHA256(FW Update Public Key [ECPoint]))		R-/R-/R-/R-	R-/R-/R-
	Public Key Firmware Verification	**1**		**0.1.94.35.74.255**	Only applicable to EMIs with cibersecurity extension FW			
1	logical_name		octet-string[6]	00015E234AFF			--/--/--/--	R-/--/--

2	value		structure[4]
			{
			Octet String[12] IV
			Octet String[24] Ephemeral key
			Octet String[65] Public Key
			Octet String[12] Authentication Tag
			}
					Ephemeral key (wrapped with MK)
					
					IV for EC Point Pulick Key Encription
					
					Public Key is ECPoint ::= OCTET STRING as defined in SEC1:2009 (This value is ciphered with Ephemeral key using AES-GCM)
						Error should be OTHER_REASON for the two types of errors:
						- Decoding the ephemeral key
						- Verifying authentication tag
							--/--/--/--	-W/--/--

#	Object/Attribute	Class	Type	Value	Meaning	Comments	Access Rights - Base FW (M/R/F/P)	Access Rights - Secured FW (SG/SB/P)
					Authentication Tag resulting in AES-GCM of Public Key			
	Active core firmware identifier	**1**		**1.0.0.2.0.255**				
1	logical_name		octet-string[6]	0100000200FF			R-/R-/R-/R-	R-/R-/R-
2	value		octet-string[5]	Vvvxx	Firmware version (version + subversion)	Example: V1.3 Value = V0103	R-/R-/R-/R-	R-/R-/R-
	Active core firmware signature identifier	**1**		**1.0.0.2.8.255**				
1	logical_name		octet-string[6]	0100000208FF			R-/R-/R-/R-	R-/R-/R-
2	value		octet-string[5]		-		R-/R-/R-/R-	R-/R-/R-
	Active application firmware identifier	**1**		**1.1.0.2.0.255**				
1	logical_name		octet-string[6]	0101000200FF			R-/R-/R-/R-	R-/R-/R-
2	value		octet-string[5]	Vvvxx	Firmware version (version + subversion)	Example: V1.3 Value = V0103	R-/R-/R-/R-	R-/R-/R-
	Active application firmware signature identifier	**1**		**1.1.0.2.8.255**				
1	logical_name		octet-string[6]	0101000208FF			R-/R-/R-/R-	R-/R-/R-
2	value		octet-string[5]		-		R-/R-/R-/R-	R-/R-/R-
	Communication module active firmware identifier	**1**		**1.2.0.2.0.255**				
1	logical_name		octet-string[6]	0102000200FF			R-/R-/R-/R-	R-/R-/R-
2	value		octet-string[5]	Vvvxx	Firmware version (version + subversion)	Example: V1.3 Value = V0103	R-/R-/R-/R-	R-/R-/R-
	Communication module active firmware signature identifier	**1**		**1.2.0.2.8.255**				
1	logical_name		octet-string[6]	0102000208FF			R-/R-/R-/R-	R-/R-/R-
2	value		octet-string[5]		-		R-/R-/R-/R-	R-/R-/R-

#	Object/Attribute	Class	Type	Value	Meaning	Comments	Access Rights - Base FW (M/R/F/P)	Access Rights - Secured FW (SG/SB/P)
	Timeout open session for Reading client through PLC channel	**3**		**0.0.94.35.51.255**	Only applicable to EMIs with base FW			
1	logical_name		octet-string[6]	00005E2333FF			--/--/--	--/--/--
2	Value		Double-long-unsigned	180 by default	Valid values: - >= 0 expressed in seconds; - "180" as default value;		--/--/--	--/--/--
3	scaler_unit		scal_unit_type	{0,7}	scale=0, unit=seconds		--/--/--	--/--/--
	Timeout open session for Management client through PLC channel	**3**		**0.0.94.35.52.255**	Only applicable to EMIs with base FW			
1	logical_name		octet-string[6]	00005E2334FF			--/--/--	--/--/--
2	Value		Double-long-unsigned	180 by default	Valid values: - >= 0 expressed in seconds; - "180" as default value;		--/--/--	--/--/--
3	scaler_unit		scal_unit_type	{0,7}	scale=0, unit=seconds		--/--/--	--/--/--
	Timeout open session for Firmware update client through PLC channel	**3**		**0.0.94.35.53.255**	Only applicable to EMIs with base FW			
1	logical_name		octet-string[6]	00005E2335FF			--/--/--	--/--/--
2	Value		Double-long-unsigned	7200 by default	Valid values: - >= 0 expressed in seconds; - "7200" as default value;		--/--/--	--/--/--
3	scaler_unit		scal_unit_type	{0,7}	scale=0, unit=seconds		--/--/--	--/--/--
	Timeout open session for Secure General client through Secure channel	**3**		**0.0.94.35.54.255**	Only applicable to EMIs with cibersecurity extension FW			
1	logical_name		octet-string[6]	00005E2336FF			--/--/--/--	R-/--/--
2	Value		Double-long-unsigned	180 by default	Valid values: - >= 100 (minimun value) expressed in seconds; - "180" as default value;	180 Seconds are for managing and reading actions. This value is used when a new Secure General Client association is created.	--/--/--/--	RW/--/--
3	scaler_unit		scal_unit_type	{0,7}	scale=0, unit=seconds		--/--/--/--	R-/--/--

#	Object/Attribute	Class	Type	Value	Meaning	Comments	Access Rights - Base FW (M/R/F/P)	Access Rights - Secured FW (SG/SB/P)
	Timeout open session for Secure General client through Secure channel for current association	**3**		**0.0.94.35.55.255**	Only applicable to EMIs with cibersecurity extension FW			
1	logical_name		octet-string[6]	00005E2337FF			--/--/--/--	R-/--/--
2	Value		Double-long-unsigned	180 by default	At the beginning of the association the value should be the same as "Timeout open session for Secure General PLC Client	This timeout should be used at firmware update process, putting a value of 7200. If the value of "Timeout open session for Secure General Client" is changed at the current association, this timeout should not be updated.	--/--/--/--	RW/--/--
3	scaler_unit		scal_unit_type	{0,7}	scale=0, unit=seconds		--/--/--/--	R-/--/--
	Timeout open session for Secure Broadcast PLC client through PLC channel	**3**		**0.0.94.35.56.255**	Only applicable to EMIs with cibersecurity extension FW			
1	logical_name		octet-string[6]	00005E2338FF			--/--/--/--	R-/R--/--
2	Value		Double-long-unsigned	180 by default	Valid values: - >= 100 (minimun value) expressed in seconds; - "180" as default value;	180 Seconds are for managing and reading actions. This value is used when a new Secure Broadcast Client association is created. When firmware update process starts the client should update "Timeout open session for Secure Broadcast PLC Client for current association" to 7200.	--/--/--/--	RW/RW/--

#	Object/Attribute	Class	Type	Value	Meaning	Comments	Access Rights - Base FW (M/R/F/P)	Access Rights - Secured FW (SG/SB/P)
3	scaler_unit		scal_unit_type	{0,7}	scale=0, unit=seconds		--/--/--/--	R-/R-/--
	Timeout open session for Secure Broadcast PLC client through PLC channel for current association	**3**		**0.0.94.35.57.255**	Only applicable to EMIs with cibersecurity extension FW			
1	logical_name		octet-string[6]	00005E2339FF			--/--/--/--	--/R--/--
2	Value		Double-long-unsigned	180 by default	At the beginning of the association the value should be the same as "Timeout open session for Secure Broadcast PLC Client	This timeout should be used at firmware update process, putting a value of 7200. If the value of "Timeout open session for Secure Broadcast PLC Client" is changed at the current association, this timeout should not be updated.	--/--/--/--	--/RW/--
3	scaler_unit		scal_unit_type	{0,7}	scale=0, unit=seconds		--/--/--/--	--/R-/--
	Global Meter Reset	**9**		**0.0.10.0.0.255**	**Data and QoS registers reset**			
1	logical_name		octet-string[6]	00000A0000FF			R-/R-/--/--	R-/--/--
2	scripts		array				R-/R-/--/--	R-/--/--
1	execute		long-unsigned	Arguments: 1: Data and parametrization reset 2: Not used 3: QoS registers reset (long power failures, undervoltages and overvoltages number and duration)		The activation of this scripts is performed by calling the execute() method to the script identifier of the corresponding script object.	-W/--/--/--	-W/--/--

#	Object/Attribute	Class	Type	Value	Meaning	Comments	Access Rights - Base FW (M/R/F/P)	Access Rights - Secured FW (SG/SB/P)
	Time stamp for new calendar activation	**1**		**1.0.94.35.130.255**		Store the date/time of the new calendar activation. Passive calendar become to active calendar.		
1	logical_name		octet-string[6]	01005E2382FF			R-/R-/--/--	R-/--/--
2	Value		Array[2] of octet-string[12]		Array[x] Date&Time for contract x x =1..2		R-/R-/--/--	R-/--/--
	GPS Coordinates	**1**		**0.65.0.30.4.255**				
1	logical_name		octet-string[6]	0041001E04FF			R-/R-/--/--	R-/--/--

2	value		structure[2]
			{
			float64 Latitude
			float64 Longitude
			}
				Default value for EMI:
				- Latitude: 0
				- Longitude: 0
				
				Default value for EMI IP:
				- Latitude: 38.710389
				- Longitude: -9.186389
					GPS Coordinates	WGS decimal format	RW/R-/--/--	RW/--/--

	HAN interface – Modbus address	**1**		**0.65.0.30.5.255**				
1	logical_name		octet-string[6]	0041001E05FF			R-/R-/--/--	R-/--/--
2	Value		unsigned	1 by default	[1, 247]		RW/R-/--/--	RW/--/--
	HAN interface – communication speed	**1**		**0.65.0.30.6.255**		Only applicable to EMIs without HDLC/DLMS on RS485 serial interface (retrocompatible)		
1	logical_name		octet-string[6]	0041001E06FF			R-/R-/--/--	R-/--/--
2	Value		long-unsigned	9600 by default	Valid values (in bps): - 9600; - 19200; - Multiples of 19200 (if supported).	The communication speed of RS485 interface should be defined by the attribute 2 of "IEC	RW/R-/--/--	RW/--/--

#	Object/Attribute	Class	Type	Value	Meaning	Comments	Access Rights - Base FW (M/R/F/P)	Access Rights - Secured FW (SG/SB/P)
						HDLC setup - Serial port" object {23, 0.1.22.0.0.255, 2}. This object "HAN interface - communication speed" {1, 0.65.0.30.6.255, 2} will no longer take effect.		
	HAN interface – access profile	**1**		**0.65.0.30.7.255**				
1	logical_name		octet-string[6]	0041001E07FF			R-/R-/--/--	R-/--/--
2	value		bit-string [256]	Default value: - All bits = 0	0 = access disabled; 1 = access enabled; Example: bit-string[1] = object with index 1 (address 0x0001), as defined in the EMI – HAN protocol specification document.		RW/R-/--/--	RW/--/--
	Utility Defined register 4	**1**		**0.65.0.30.8.255**	**Utility Defined register 4**			
1	logical_name		octet-string[6]	0041001E08FF			R-/R-/--/--	R-/--/--
2	value		octet-string[20]				RW/R-/--/--	RW/--/--
	Utility Defined register 5	**1**		**0.65.0.30.9.255**	**Utility Defined register 5**			
1	logical_name		octet-string[6]	0041001E09FF			R-/R-/--/--	R-/--/--
2	value		octet-string[20]				RW/R-/--/--	RW/--/--
	Remote communication operation mode	**1**		**0.65.0.30.10.255**				
1	logical_name		octet-string[6]	0041001E0AFF			R-/R-/--/--	R-/--/--
2	value		Enum	(0) by default	Defines the operating mode of the remote communication: (0): DLMS communication active on the 2 remote communication interfaces (PLC PRIME and RS485); (1): DLMS communication only active on PLC PRIME interface;		RW/R-/--/--	RW/--/--

#	Object/Attribute	Class	Type	Value	Meaning	Comments	Access Rights - Base FW (M/R/F/P)	Access Rights - Secured FW (SG/SB/P)
					(2): DLMS communication only active on the RS485 interface, maintaining the PLC PRIME interface active in the lower layers (MAC and PHY). In this mode the device continues to function as a service node on the PLC PRIME network. (3): (Preferential) DLMS communication only active on the RS485 interface, and communication on the PLC PRIME interface is totally disabled.			
	Utility Defined register 7	**1**		**0.65.0.30.11.255**	**Utility Defined register 7**			
1	logical_name		octet-string[6]	0041001E0BFF			R-/R-/--/--	R-/--/--
2	value		octet-string[20]				RW/R-/--/--	RW/--/--
	Utility Defined register 8	**1**		**0.65.0.30.12.255**	**Utility Defined register 8**			
1	logical_name		octet-string[6]	0041001E0CFF			R-/R-/--/--	R-/--/--
2	value		octet-string[20]				RW/R-/--/--	RW/--/--
	Utility Defined register 9	**1**		**0.65.0.30.13.255**	**Utility Defined register 9**			
1	logical_name		octet-string[6]	0041001E0DFF			R-/R-/--/--	R-/--/--
2	value		octet-string[20]				RW/R-/--/--	RW/--/--
	Battery voltage	**4**		**0.0.96.6.3.255**				
1	logical_name		octet-string[6]	0000600603FF			R-/R-/--/--	R-/--/--
2	value		long-unsigned				R-/R-/--/--	R-/--/--
3	scaler_unit		scal_unit_type	{-2,35}	scaler=-2, unit=V resolution: 00.00 V		R-/R-/--/--	R-/--/--
4	status		null-data				R-/R-/--/--	R-/--/--
5	capture_time		octet-string[12]		Last timestamp of battery's voltage measurement		R-/R-/--/--	R-/--/--
	DLMS association's counter - established through PLC PRIME interface	**3**		**0.0.94.35.70.255**				
1	logical_name		octet-string[6]	00005E2346FF			R-/R-/--/--	R-/--/--
2	Value		long-unsinged			When the end of scale is reached the	R-/R-/--/--	R-/--/--

#	Object/Attribute	Class	Type	Value	Meaning	Comments	Access Rights - Base FW (M/R/F/P)	Access Rights - Secured FW (SG/SB/P)
						overflow must occur and the counter be initialized with 0.		
3	scaler_unit		scal_unit_type	{0,255}			R-/R-/--/--	R-/--/--
1	reset		integer	0			-W/--/--/--	-W/--/--
	DLMS association's counter - established through RS485 interface	**3**		**0.0.94.35.71.255**				
1	logical_name		octet-string[6]	00005E2347FF			R-/R-/--/--	R-/--/--
2	Value		long-unsinged			When the end of scale is reached the overflow must occur and the counter be initialized with 0.	R-/R-/--/--	R-/--/--
3	scaler_unit		scal_unit_type	{0,255}			R-/R-/--/--	R-/--/--
1	reset		integer	0			-W/--/--/--	-W/--/--
	HAN request's counter	**3**		**0.0.94.35.72.255**				
1	logical_name		octet-string[6]	00005E2348FF			R-/R-/--/--	R-/--/--
2	Value		Double-long-unsigned			When the end of scale is reached the overflow must occur and the counter be initialized with 0.	R-/R-/--/--	R-/--/--
3	scaler_unit		scal_unit_type	{0,255}			R-/R-/--/--	R-/--/--
1	reset		integer	0			-W/--/--/--	-W/--/--

5.6 Objetos relacionados com Eletricidade

5.6.1 Registos de Energia

#	Object/Attribute	Class	Type	Value	Meaning	Comments	Access Rights - Base FW (M/R/F/P)	Access Rights - Secured FW (SG/SB/P)
	Active energy import (+A)	**3**		**1.0.1.8.x.255**	**Absolute value**			
1	logical_name		octet-string[6]	01000108xxFF	x=0 Total x=1...6 Rates contract 1 x=10 Total rates contract 1 x=11...16 Rates contract 2 x=20 Total rates contract 2		R-/R-/--/--	R-/--/--
2	Value		double-long-unsigned				R-/R-/--/--	R-/--/--
3	scaler_unit		scal_unit_type	{0,30}	scaler=0, unit=Wh resolution: 000000.000 kWh		R-/R-/--/--	R-/--/--
	Active energy export (–A)	**3**		**1.0.2.8.x.255**	**Absolute value**			
1	logical_name		octet-string[6]	01000208xxFF	x=0 Total x=1...6 Rates contract 1 x=10 Total rates contract 1 x=11...16 Rates contract 2 x=20 Total rates contract 2		R-/R-/--/--	R-/--/--
2	Value		double-long-unsigned				R-/R-/--/--	R-/--/--
3	scaler_unit		scal_unit_type	{0,30}	scaler=0, unit=Wh resolution: 000000.000 kWh		R-/R-/--/--	R-/--/--
	Reactive energy QI (+Ri)	**3**		**1.0.5.8.x.255**	**Absolute value**			
1	logical_name		octet-string[6]	01000508xxFF	x=0 Total x=1...6 Rates contract 1 x=10 Total rates contract 1 x=11...16 Rates contract 2 x=20 Total rates contract 2		R-/R-/--/--	R-/--/--

#	Object/Attribute	Class	Type	Value	Meaning	Comments	Access Rights - Base FW (M/R/F/P)	Access Rights - Secured FW (SG/SB/P)
2	Value		double-long-unsigned				R-/R-/--/--	R-/--/--
3	scaler_unit		scal_unit_type	{0,32}	scaler=0, unit=varh resolution: 000000.000 kvarh		R-/R-/--/--	R-/--/--
	Reactive energy QII (+Rc)	**3**		**1.0.6.8.x.255**	**Absolute value**			
1	logical_name		octet-string[6]	01000608xxFF	x=0 Total x=1...6 Rates contract 1 x=10 Total rates contract 1 x=11...16 Rates contract 2 x=20 Total rates contract 2		R-/R-/--/--	R-/--/--
2	Value		double-long-unsigned				R-/R-/--/--	R-/--/--
3	scaler_unit		scal_unit_type	{0,32}	scaler=0, unit=varh resolution: 000000.000 kvarh		R-/R-/--/--	R-/--/--
	Reactive energy QIII (-Ri)	**3**		**1.0.7.8.x.255**	**Absolute value**			
1	logical_name		octet-string[6]	01000708xxFF	x=0 Total x=1...6 Rates contract 1 x=10 Total rates contract 1 x=11...16 Rates contract 2 x=20 Total rates contract 2		R-/R-/--/--	R-/--/--
2	Value		double-long-unsigned				R-/R-/--/--	R-/--/--
3	scaler_unit		scal_unit_type	{0,32}	scaler=0, unit=varh resolution: 000000.000 kvarh		R-/R-/--/--	R-/--/--
	Reactive energy QIV (-Rc)	**3**		**1.0.8.8.x.255**	**Absolute value**			
1	logical_name		octet-string[6]	01000808xxFF	x=0 Total x=1...6 Rates contract 1 x=10 Total rates contract 1 x=11...16 Rates contract 2 x=20 Total rates contract 2		R-/R-/--/--	R-/--/--

#	Object/Attribute	Class	Type	Value	Meaning	Comments	Access Rights - Base FW (M/R/F/P)	Access Rights - Secured FW (SG/SB/P)
2	Value		double-long-unsigned				R-/R-/--/--	R-/--/--
3	scaler_unit		scal_unit_type	{0,32}	scaler=0, unit=varh resolution: 000000.000 kvarh		R-/R-/--/--	R-/--/--
	Active energy import (+A) L1	**3**		**1.0.21.8.0.255**	**Absolute value**	Only polyphase meters		
1	logical_name		octet-string[6]	0100150800FF			R-/R-/--/--	R-/--/--
2	Value		double-long-unsigned				R-/R-/--/--	R-/--/--
3	scaler_unit		scal_unit_type	{0,30}	scaler=0, unit=Wh resolution: 00000.000 kWh		R-/R-/--/--	R-/--/--
	Active energy import (+A) L2	**3**		**1.0.41.8.0.255**	**Absolute value**	Only polyphase meters		
1	logical_name		octet-string[6]	0100290800FF			R-/R-/--/--	R-/--/--
2	Value		double-long-unsigned				R-/R-/--/--	R-/--/--
3	scaler_unit		scal_unit_type	{0,30}	scaler=0, unit=Wh resolution: 000000.000 kWh		R-/R-/--/--	R-/--/--
	Active energy import (+A) L3	**3**		**1.0.61.8.0.255**	**Absolute value**	Only polyphase meters		
1	logical_name		octet-string[6]	01003D0800FF			R-/R-/--/--	R-/--/--
2	Value		double-long-unsigned				R-/R-/--/--	R-/--/--
3	scaler_unit		scal_unit_type	{0,30}	scaler=0, unit=Wh resolution: 000000.000 kWh		R-/R-/--/--	R-/--/--
	Active energy export (–A) L1	**3**		**1.0.22.8.0.255**	**Absolute value**	Only polyphase meters		
1	logical_name		octet-string[6]	0100160800FF			R-/R-/--/--	R-/--/--
2	Value		double-long-unsigned				R-/R-/--/--	R-/--/--
3	scaler_unit		scal_unit_type	{0,30}	scaler=0, unit=Wh resolution: 000000.000 kWh		R-/R-/--/--	R-/--/--
	Active energy export (–A) L2	**3**		**1.0.42.8.0.255**	**Absolute value**	Only polyphase meters		
1	logical_name		octet-string[6]	01002A0800FF			R-/R-/--/--	R-/--/--

#	Object/Attribute	Class	Type	Value	Meaning	Comments	Access Rights - Base FW (M/R/F/P)	Access Rights - Secured FW (SG/SB/P)
2	Value		double-long-unsigned				R-/R-/--/--	R-/--/--
3	scaler_unit		scal_unit_type	{0,30}	scaler=0, unit=Wh resolution: 000000.000 kWh		R-/R-/--/--	R-/--/--
	Active energy export (–A) L3	**3**		**1.0.62.8.0.255**	**Absolute value**	Only polyphase meters		
1	logical_name		octet-string[6]	01003E0800FF			R-/R-/--/--	R-/--/--
2	Value		double-long-unsigned				R-/R-/--/--	R-/--/--
3	scaler_unit		scal_unit_type	{0,30}	scaler=0, unit=Wh resolution: 000000.000 kWh		R-/R-/--/--	R-/--/--
	Reactive energy QI (+Ri) L1	**3**		**1.0.25.8.0.255**	**Absolute value**	Only polyphase meters		
1	logical_name		octet-string[6]	0100190800FF			R-/R-/--/--	R-/--/--
2	Value		double-long-unsigned				R-/R-/--/--	R-/--/--
3	scaler_unit		scal_unit_type	{0,32}	scaler=0, unit=varh resolution: 000000.000 kvarh		R-/R-/--/--	R-/--/--
	Reactive energy QI (+Ri) L2	**3**		**1.0.45.8.0.255**	**Absolute value**	Only polyphase meters		
1	logical_name		octet-string[6]	01002D0800FF			R-/R-/--/--	R-/--/--
2	Value		double-long-unsigned				R-/R-/--/--	R-/--/--
3	scaler_unit		scal_unit_type	{0,32}	scaler=0, unit=varh resolution: 000000.000 kvarh		R-/R-/--/--	R-/--/--
	Reactive energy QI (+Ri) L3	**3**		**1.0.65.8.0.255**	**Absolute value**	Only polyphase meters		
1	logical_name		octet-string[6]	0100410800FF			R-/R-/--/--	R-/--/--
2	Value		double-long-unsigned				R-/R-/--/--	R-/--/--
3	scaler_unit		scal_unit_type	{0,32}	scaler=0, unit=varh resolution: 000000.000 kvarh		R-/R-/--/--	R-/--/--

#	Object/Attribute	Class	Type	Value	Meaning	Comments	Access Rights - Base FW (M/R/F/P)	Access Rights - Secured FW (SG/SB/P)
	Reactive energy QII (+Rc) L1	**3**		**1.0.26.8.0.255**	**Absolute value**	Only polyphase meters		
1	logical_name		octet-string[6]	01001A0800FF			R-/R-/--/--	R-/--/--
2	Value		double-long-unsigned				R-/R-/--/--	R-/--/--
3	scaler_unit		scal_unit_type	{0,32}	scaler=0, unit=varh resolution: 000000.000 kvarh		R-/R-/--/--	R-/--/--
	Reactive energy QII (+Rc) L2	**3**		**1.0.46.8.0.255**	**Absolute value**	Only polyphase meters		
1	logical_name		octet-string[6]	01002E0800FF			R-/R-/--/--	R-/--/--
2	Value		double-long-unsigned				R-/R-/--/--	R-/--/--
3	scaler_unit		scal_unit_type	{0,32}	scaler=0, unit=varh resolution: 000000.000 kvarh		R-/R-/--/--	R-/--/--
	Reactive energy QII (+Rc) L3	**3**		**1.0.66.8.0.255**	**Absolute value**	Only polyphase meters		
1	logical_name		octet-string[6]	0100420800FF			R-/R-/--/--	R-/--/--
2	Value		double-long-unsigned				R-/R-/--/--	R-/--/--
3	scaler_unit		scal_unit_type	{0,32}	scaler=0, unit=varh resolution: 000000.000 kvarh		R-/R-/--/--	R-/--/--
	Reactive energy QIII (-Ri) L1	**3**		**1.0.27.8.0.255**	**Absolute value**	Only polyphase meters		
1	logical_name		octet-string[6]	01001B0800FF			R-/R-/--/--	R-/--/--
2	Value		double-long-unsigned				R-/R-/--/--	R-/--/--
3	scaler_unit		scal_unit_type	{0,32}	scaler=0, unit=varh resolution: 000000.000 kvarh		R-/R-/--/--	R-/--/--
	Reactive energy QIII (-Ri) L2	**3**		**1.0.47.8.0.255**	**Absolute value**	Only polyphase meters		
1	logical_name		octet-string[6]	01002F0800FF			R-/R-/--/--	R-/--/--
2	Value		double-long-unsigned				R-/R-/--/--	R-/--/--
3	scaler_unit		scal_unit_type	{0,32}	scaler=0, unit=varh resolution: 000000.000 kvarh		R-/R-/--/--	R-/--/--

#	Object/Attribute	Class	Type	Value	Meaning	Comments	Access Rights - Base FW (M/R/F/P)	Access Rights - Secured FW (SG/SB/P)
	Reactive energy QIII (-Ri) L3	**3**		**1.0.67.8.0.255**	**Absolute value**	Only polyphase meters		
1	logical_name		octet-string[6]	0100430800FF			R-/R-/--/--	R-/--/--
2	Value		double-long-unsigned				R-/R-/--/--	R-/--/--
3	scaler_unit		scal_unit_type	{0,32}	scaler=0, unit=varh resolution: 000000.000 kvarh		R-/R-/--/--	R-/--/--
	Reactive energy QIV (-Rc) L1	**3**		**1.0.28.8.0.255**	**Absolute value**	Only polyphase meters		
1	logical_name		octet-string[6]	01001C0800FF			R-/R-/--/--	R-/--/--
2	Value		double-long-unsigned				R-/R-/--/--	R-/--/--
3	scaler_unit		scal_unit_type	{0,32}	scaler=0, unit=varh resolution: 000000.000 kvarh		R-/R-/--/--	R-/--/--
	Reactive energy QIV (-Rc) L2	**3**		**1.0.48.8.0.255**	**Absolute value**	Only polyphase meters		
1	logical_name		octet-string[6]	0100300800FF			R-/R-/--/--	R-/--/--
2	Value		double-long-unsigned				R-/R-/--/--	R-/--/--
3	scaler_unit		scal_unit_type	{0,32}	scaler=0, unit=varh resolution: 000000.000 kvarh		R-/R-/--/--	R-/--/--
	Reactive energy QIV (-Rc) L3	**3**		**1.0.68.8.0.255**	**Absolute value**	Only polyphase meters		
1	logical_name		octet-string[6]	0100440800FF			R-/R-/--/--	R-/--/--
2	Value		double-long-unsigned				R-/R-/--/--	R-/--/--
3	scaler_unit		scal_unit_type	{0,32}	scaler=0, unit=varh resolution: 000000.000 kvarh		R-/R-/--/--	R-/--/--
	Active energy import (+A)-incremental	**3**		**1.0.1.29.0.255**	**Incremental Value for Load Profile 1**			
1	logical_name		octet-string[6]	0100011D00FF			R-/R-/--/--	R-/--/--
2	Value		double-long-unsigned				R-/R-/--/--	R-/--/--
3	scaler_unit		scal_unit_type	{0,30}	scaler=0, unit=Wh resolution: 000.000 kWh		R-/R-/--/--	R-/--/--

#	Object/Attribute	Class	Type	Value	Meaning	Comments	Access Rights - Base FW (M/R/F/P)	Access Rights - Secured FW (SG/SB/P)
	Active energy import (+A) incremental (short)	3		1.1.1.29.0.255	Short Incremental Value for Load Profile 1			
1	logical_name		octet-string[6]	0101011D00FF			R-/R-/--/--	R-/--/--
2	Value		long-unsigned				R-/R-/--/--	R-/--/--
3	scaler_unit		scal_unit_type	{0,30}	scaler=0, unit=Wh resolution: 00.000 kWh		R-/R-/--/--	R-/--/--
	Active energy export (–A)-incremental	3		1.0.2.29.0.255	Incremental Value for Load Profile 1			
1	logical_name		octet-string[6]	0100021D00FF			R-/R-/--/--	R-/--/--
2	Value		double-long-unsigned				R-/R-/--/--	R-/--/--
3	scaler_unit		scal_unit_type	{0,30}	scaler=0, unit=Wh resolution: 000.000 kWh		R-/R-/--/--	R-/--/--
	Active energy export (–A) incremental (short)	3		1.1.2.29.0.255	Short Incremental Value for Load Profile 1			
1	logical_name		octet-string[6]	0101021D00FF			R-/R-/--/--	R-/--/--
2	Value		long-unsigned				R-/R-/--/--	R-/--/--
3	scaler_unit		scal_unit_type	{0,30}	scaler=0, unit=Wh resolution: 00.000 kWh		R-/R-/--/--	R-/--/--
	Reactive energy QI (+Ri) incremental	3		1.0.5.29.0.255	Incremental Value for Load Profile 1			
1	logical_name		octet-string[6]	0100051D00FF			R-/R-/--/--	R-/--/--
2	Value		double-long-unsigned				R-/R-/--/--	R-/--/--
3	scaler_unit		scal_unit_type	{0,32}	scaler=0, unit=varh resolution: 000.000 kvarh		R-/R-/--/--	R-/--/--
	Reactive energy QI (+Ri) incremental (short)	3		1.1.5.29.0.255	Short Incremental Value for Load Profile 1			
1	logical_name		octet-string[6]	0101051D00FF			R-/R-/--/--	R-/--/--
2	Value		long-unsigned				R-/R-/--/--	R-/--/--
3	scaler_unit		scal_unit_type	{0,32}	scaler=0, unit=varh resolution: 00.000 kvarh		R-/R-/--/--	R-/--/--

#	Object/Attribute	Class	Type	Value	Meaning	Comments	Access Rights - Base FW (M/R/F/P)	Access Rights - Secured FW (SG/SB/P)
	Reactive energy QII (+Rc) -incremental	3		1.0.6.29.0.255	Incremental Value for Load Profile 1			
1	logical_name		octet-string[6]	0100061D00FF			R-/R-/--/--	R-/--/--
2	Value		double-long-unsigned				R-/R-/--/--	R-/--/--
3	scaler_unit		scal_unit_type	{0,32}	scaler=0, unit=varh resolution: 000.000 kvarh		R-/R-/--/--	R-/--/--
	Reactive energy QII (+Rc) incremental (short)	3		1.1.6.29.0.255	Short Incremental Value for Load Profile 1			
1	logical_name		octet-string[6]	0101061D00FF			R-/R-/--/--	R-/--/--
2	Value		long-unsigned				R-/R-/--/--	R-/--/--
3	scaler_unit		scal_unit_type	{0,32}	scaler=0, unit=varh resolution: 00.000 kvarh		R-/R-/--/--	R-/--/--
	Reactive energy QIII (-Ri) -incremental	3		1.0.7.29.0.255	Incremental Value for Load Profile 1			
1	logical_name		octet-string[6]	0100071D00FF			R-/R-/--/--	R-/--/--
2	Value		double-long-unsigned				R-/R-/--/--	R-/--/--
3	scaler_unit		scal_unit_type	{0,32}	scaler=0, unit=varh resolution: 000.000 kvarh		R-/R-/--/--	R-/--/--
	Reactive energy QIII (-Ri) incremental (short)	3		1.1.7.29.0.255	Short Incremental Value for Load Profile 1			
1	logical_name		octet-string[6]	0101071D00FF			R-/R-/--/--	R-/--/--
2	Value		long-unsigned				R-/R-/--/--	R-/--/--
3	scaler_unit		scal_unit_type	{0,32}	scaler=0, unit=varh resolution: 00.000 kvarh		R-/R-/--/--	R-/--/--
	Reactive energy QIV (-Rc) -incremental	3		1.0.8.29.0.255	Incremental Value for Load Profile 1			
1	logical_name		octet-string[6]	0100081D00FF			R-/R-/--/--	R-/--/--
2	Value		double-long-unsigned				R-/R-/--/--	R-/--/--
3	scaler_unit		scal_unit_type	{0,32}	scaler=0, unit=varh resolution: 000.000 kvarh		R-/R-/--/--	R-/--/--

#	Object/Attribute	Class	Type	Value	Meaning	Comments	Access Rights - Base FW (M/R/F/P)	Access Rights - Secured FW (SG/SB/P)
	Reactive energy QIV (-Rc) incremental (short)	3		1.1.8.29.0.255	Short Incremental Value for Load Profile 1			
1	logical_name		octet-string[6]	0101081D00FF			R-/R-/--/--	R-/--/--
2	Value		long-unsigned				R-/R-/--/--	R-/--/--
3	scaler_unit		scal_unit_type	{0,32}	scaler=0, unit=varh resolution: 00.000 kvarh		R-/R-/--/--	R-/--/--
	Active energy import (+A) L1 incremental (short)	3		1.1.21.29.0.255	Short Incremental Value for Load Profile 1	Only polyphase meters		
1	logical_name		octet-string[6]	0101151D00FF			R-/R-/--/--	R-/--/--
2	Value		long-unsigned				R-/R-/--/--	R-/--/--
3	scaler_unit		scal_unit_type	{0,30}	scaler=0, unit=Wh resolution: 00.000 kWh		R-/R-/--/--	R-/--/--
	Active energy import (+A) L2 incremental (short)	3		1.1.41.29.0.255	Short Incremental Value for Load Profile 1	Only polyphase meters		
1	logical_name		octet-string[6]	0101291D00FF			R-/R-/--/--	R-/--/--
2	Value		long-unsigned				R-/R-/--/--	R-/--/--
3	scaler_unit		scal_unit_type	{0,30}	scaler=0, unit=Wh resolution: 00.000 kWh		R-/R-/--/--	R-/--/--
	Active energy import (+A) L3 incremental (short)	3		1.1.61.29.0.255	Short Incremental Value for Load Profile 1	Only polyphase meters		
1	logical_name		octet-string[6]	01013D1D00FF			R-/R-/--/--	R-/--/--
2	Value		long-unsigned				R-/R-/--/--	R-/--/--
3	scaler_unit		scal_unit_type	{0,30}	scaler=0, unit=Wh resolution: 00.000 kWh		R-/R-/--/--	R-/--/--
	Active energy export (–A) L1 incremental (short)	3		1.1.22.29.0.255	Short Incremental Value for Load Profile 1	Only polyphase meters		
1	logical_name		octet-string[6]	0101161D00FF			R-/R-/--/--	R-/--/--
2	Value		long-unsigned				R-/R-/--/--	R-/--/--
3	scaler_unit		scal_unit_type	{0,30}	scaler=0, unit=Wh resolution: 00.000 kWh		R-/R-/--/--	R-/--/--

#	Object/Attribute	Class	Type	Value	Meaning	Comments	Access Rights - Base FW (M/R/F/P)	Access Rights - Secured FW (SG/SB/P)
	Active energy export (–A) L2 incremental (short)	**3**		**1.1.42.29.0.255**	**Short Incremental Value for Load Profile 1**	Only polyphase meters		
1	logical_name		octet-string[6]	01012A1D00FF			R-/R-/--/--	R-/--/--
2	Value		long-unsigned				R-/R-/--/--	R-/--/--
3	scaler_unit		scal_unit_type	{0,30}	scaler=0, unit=Wh resolution: 00.000 kWh		R-/R-/--/--	R-/--/--
	Active energy export (–A) L3 incremental (short)	**3**		**1.1.62.29.0.255**	**Short Incremental Value for Load Profile 1**	Only polyphase meters		
1	logical_name		octet-string[6]	01013E1D00FF			R-/R-/--/--	R-/--/--
2	Value		long-unsigned				R-/R-/--/--	R-/--/--
3	scaler_unit		scal_unit_type	{0,30}	scaler=0, unit=Wh resolution: 00.000 kWh		R-/R-/--/--	R-/--/--
	Reactive energy QI (+Ri) L1 incremental (short)	**3**		**1.1.25.29.0.255**	**Short Incremental Value for Load Profile 1**	Only polyphase meters		
1	logical_name		octet-string[6]	0101191D00FF			R-/R-/--/--	R-/--/--
2	Value		long-unsigned				R-/R-/--/--	R-/--/--
3	scaler_unit		scal_unit_type	{0,32}	scaler=0, unit=varh resolution: 00.000 kvarh		R-/R-/--/--	R-/--/--
	Reactive energy QI (+Ri) L2 incremental (short)	**3**		**1.1.45.29.0.255**	**Short Incremental Value for Load Profile 1**	Only polyphase meters		
1	logical_name		octet-string[6]	01012D1D00FF			R-/R-/--/--	R-/--/--
2	Value		long-unsigned				R-/R-/--/--	R-/--/--
3	scaler_unit		scal_unit_type	{0,32}	scaler=0, unit=varh resolution: 00.000 kvarh		R-/R-/--/--	R-/--/--
	Reactive energy QI (+Ri) L3 incremental (short)	**3**		**1.1.65.29.0.255**	**Short Incremental Value for Load Profile 1**	Only polyphase meters		
1	logical_name		octet-string[6]	0101411D00FF			R-/R-/--/--	R-/--/--
2	Value		long-unsigned				R-/R-/--/--	R-/--/--
3	scaler_unit		scal_unit_type	{0,32}	scaler=0, unit=varh resolution: 00.000 kvarh		R-/R-/--/--	R-/--/--

#	Object/Attribute	Class	Type	Value	Meaning	Comments	Access Rights - Base FW (M/R/F/P)	Access Rights - Secured FW (SG/SB/P)
	Reactive energy QII (+Rc) L1 incremental (short)	**3**		**1.1.26.29.0.255**	**Short Incremental Value for Load Profile 1**	Only polyphase meters		
1	logical_name		octet-string[6]	01011A1D00FF			R-/R-/--/--	R-/--/--
2	Value		long-unsigned				R-/R-/--/--	R-/--/--
3	scaler_unit		scal_unit_type	{0,32}	scaler=0, unit=varh resolution: 00.000 kvarh		R-/R-/--/--	R-/--/--
	Reactive energy QII (+Rc) L2 incremental (short)	**3**		**1.1.46.29.0.255**	**Short Incremental Value for Load Profile 1**	Only polyphase meters		
1	logical_name		octet-string[6]	01012E1D00FF			R-/R-/--/--	R-/--/--
2	Value		long-unsigned				R-/R-/--/--	R-/--/--
3	scaler_unit		scal_unit_type	{0,32}	scaler=0, unit=varh resolution: 00.000 kvarh		R-/R-/--/--	R-/--/--
	Reactive energy QII (+Rc) L3 incremental (short)	**3**		**1.1.66.29.0.255**	**Short Incremental Value for Load Profile 1**	Only polyphase meters		
1	logical_name		octet-string[6]	0101421D00FF			R-/R-/--/--	R-/--/--
2	Value		long-unsigned				R-/R-/--/--	R-/--/--
3	scaler_unit		scal_unit_type	{0,32}	scaler=0, unit=varh resolution: 00.000 kvarh		R-/R-/--/--	R-/--/--
	Reactive energy QIII (-Ri) L1 incremental (short)	**3**		**1.1.27.29.0.255**	**Short Incremental Value for Load Profile 1**	Only polyphase meters		
1	logical_name		octet-string[6]	01011B1D00FF			R-/R-/--/--	R-/--/--
2	Value		long-unsigned				R-/R-/--/--	R-/--/--
3	scaler_unit		scal_unit_type	{0,32}	scaler=0, unit=varh resolution: 00.000 kvarh		R-/R-/--/--	R-/--/--
	Reactive energy QIII (-Ri) L2 incremental (short)	**3**		**1.1.47.29.0.255**	**Short Incremental Value for Load Profile 1**	Only polyphase meters		
1	logical_name		octet-string[6]	01012F1D00FF			R-/R-/--/--	R-/--/--
2	Value		long-unsigned				R-/R-/--/--	R-/--/--
3	scaler_unit		scal_unit_type	{0,32}	scaler=0, unit=varh resolution: 00.000 kvarh		R-/R-/--/--	R-/--/--

#	Object/Attribute	Class	Type	Value	Meaning	Comments	Access Rights - Base FW (M/R/F/P)	Access Rights - Secured FW (SG/SB/P)
	Reactive energy QIII (-Ri) L3 incremental (short)	**3**		**1.1.67.29.0.255**	**Short Incremental Value for Load Profile 1**	Only polyphase meters		
1	logical_name		octet-string[6]	0101431D00FF			R-/R-/--/--	R-/--/--
2	Value		long-unsigned				R-/R-/--/--	R-/--/--
3	scaler_unit		scal_unit_type	{0,32}	scaler=0, unit=varh resolution: 00.000 kvarh		R-/R-/--/--	R-/--/--
	Reactive energy QIV (-Rc) L1 incremental (short)	**3**		**1.1.28.29.0.255**	**Short Incremental Value for Load Profile 1**	Only polyphase meters		
1	logical_name		octet-string[6]	01011C1D00FF			R-/R-/--/--	R-/--/--
2	Value		long-unsigned				R-/R-/--/--	R-/--/--
3	scaler_unit		scal_unit_type	{0,32}	scaler=0, unit=varh resolution: 00.000 kvarh		R-/R-/--/--	R-/--/--
	Reactive energy QIV (-Rc) L2 incremental (short)	**3**		**1.1.48.29.0.255**	**Short Incremental Value for Load Profile 1**	Only polyphase meters		
1	logical_name		octet-string[6]	0101301D00FF			R-/R-/--/--	R-/--/--
2	Value		long-unsigned				R-/R-/--/--	R-/--/--
3	scaler_unit		scal_unit_type	{0,32}	scaler=0, unit=varh resolution: 00.000 kvarh		R-/R-/--/--	R-/--/--
	Reactive energy QIV (-Rc) L3 incremental (short)	**3**		**1.1.68.29.0.255**	**Short Incremental Value for Load Profile 1**	Only polyphase meters		
1	logical_name		octet-string[6]	0101441D00FF			R-/R-/--/--	R-/--/--
2	Value		long-unsigned				R-/R-/--/--	R-/--/--
3	scaler_unit		scal_unit_type	{0,32}	scaler=0, unit=varh resolution: 00.000 kvarh		R-/R-/--/--	R-/--/--
	Instantaneous Energy Values	**7**		**0.0.21.0.6.255**	**Instantaneous Energy Values**			
1	logical_name		octet-string[6]	0000150006FF			R-/R-/--/--	R-/--/--
2	buffer		Array				R-/R-/--/--	R-/--/--
3	capture_objects		array	{8,0.0.1.0.0.255,2}; {3,1.0.1.8.0.255,2}; {3,1.0.2.8.0.255,2};	clock; active energy import +A active energy export -A		R-/R-/--/--	R-/--/--

#	Object/Attribute	Class	Type	Value	Meaning	Comments	Access Rights - Base FW (M/R/F/P)	Access Rights - Secured FW (SG/SB/P)
				{3,1.0.5.8.0.255,2};	reactive energy +Ri (QI)			
				{3,1.0.6.8.0.255,2};	reactive energy +Rc (QII)			
				{3,1.0.7.8.0.255,2};	reactive energy -Ri (QIII)			
				{3,1.0.8.8.0.255,2}	reactive energy -Rc (QIV)			
				{3,1.0.21.8.0.255,2}	active energy import +A L1	only for polyphase meters		
				{3,1.0.41.8.0.255,2}	active energy import +A L2	only for polyphase meters		
				{3,1.0.61.8.0.255,2}	active energy import +A L3	only for polyphase meters		
				{3,1.0.22.8.0.255,2}	active energy export -A L1	only for polyphase meters		
				{3,1.0.42.8.0.255,2}	active energy export -A L2	only for polyphase meters		
				{3,1.0.62.8.0.255,2}	active energy export -A L3	only for polyphase meters		
				{3,1.0.25.8.0.255,2}	reactive energy +Ri (QI) L1	only for polyphase meters		
				{3,1.0.45.8.0.255,2}	reactive energy +Ri (QI) L2	only for polyphase meters		
				{3,1.0.65.8.0.255,2}	reactive energy +Ri (QI) L3	only for polyphase meters		
				{3,1.0.26.8.0.255,2}	reactive energy +Rc (QII) L1	only for polyphase meters		
				{3,1.0.46.8.0.255,2}	reactive energy +Rc (QII) L1	only for polyphase meters		
				{3,1.0.66.8.0.255,2}	reactive energy +Rc (QII) L1	only for polyphase meters		
				{3,1.0.27.8.0.255,2}	reactive energy -Ri (QIII) L1	only for polyphase meters		
				{3,1.0.47.8.0.255,2}	reactive energy -Ri (QIII) L2	only for polyphase meters		
				{3,1.0.67.8.0.255,2}	reactive energy -Ri (QIII) L3	only for polyphase meters		
				{3,1.0.28.8.0.255,2}	reactive energy -Rc (QIV) L1	only for polyphase meters		
				{3,1.0.48.8.0.255,2}	reactive energy -Rc (QIV) L2	only for polyphase meters		
				{3,1.0.68.8.0.255,2}	reactive energy -Rc (QIV) L3	only for polyphase meters		

#	Object/Attribute	Class	Type	Value	Meaning	Comments	Access Rights - Base FW (M/R/F/P)	Access Rights - Secured FW (SG/SB/P)
4	capture_period		double-long-unsigned	0	Asynchronously		R-/R-/--/--	R-/--/--
5	sort_method		enum	1	unsorted (FIFO)		R-/R-/--/--	R-/--/--
6	sort_object		capture object definition	none	none		R-/R-/--/--	R-/--/--
7	entries_in_use		double-long-unsigned				R-/R-/--/--	R-/--/--
8	profile_entries		double-long-unsigned	1	Profile entries is limited to 1		R-/R-/--/--	R-/--/--

5.6.2 Registos de Potência

#	Object/Attribute	Class	Type	Value	Meaning	Comments	Access Rights - Base FW (M/R/F/P)	Access Rights - Secured FW (SG/SB/P)
	Demand Register Active power+ (QI+QIV)	**5**		**1.0.1.4.0.255**	**Average demand**			
1	logical_name		octet-string[6]	0100010400FF			R-/R-/--/--	R-/--/--
2	current_average_value		double-long				R-/R-/--/--	R-/--/--
3	last_average_value		double-long				R-/R-/--/--	R-/--/--
4	scaler_unit		scal_unit_type	{0,27}	scaler=0, unit=W resolution: 000.000 kW		R-/R-/--/--	R-/--/--
5	status		null-data				R-/R-/--/--	R-/--/--
6	capture_time		octet-string[12]				R-/R-/--/--	R-/--/--
7	start_time_current		octet-string[12]				R-/R-/--/--	R-/--/--
8	period		double-long-unsigned	900	Valid values: - 300 seconds - 600 seconds - 900 seconds (default) - 1200 seconds - 1800 seconds - 3600 seconds	The period value is configurable using the object “Measurement Period - Demand Settings” with code 1.0.0.8.0.255	R-/R-/--/--	R-/--/--
9	number_of_periods		long-unsigned	1			RW/R-/--/--	RW/--/--
1	reset		integer				R-/R-/--/--	R-/--/--
2	next_period		integer				R-/R-/--/--	R-/--/--
	Demand Register Active power– (QII+QIII)	**5**		**1.0.2.4.0.255**	**Average demand**			
1	logical_name		octet-string[6]	0100020400FF			R-/R-/--/--	R-/--/--
2	current_average_value		double-long				R-/R-/--/--	R-/--/--
3	last_average_value		double-long				R-/R-/--/--	R-/--/--
4	scaler_unit		scal_unit_type	{0,27}	scaler=0, unit=W resolution: 000.000 kW		R-/R-/--/--	R-/--/--
5	status		null-data				R-/R-/--/--	R-/--/--

#	Object/Attribute	Class	Type	Value	Meaning	Comments	Access Rights - Base FW (M/R/F/P)	Access Rights - Secured FW (SG/SB/P)
6	capture_time		octet-string[12]				R-/R-/--/--	R-/--/--
7	start_time_current		octet-string[12]				R-/R-/--/--	R-/--/--
8	period		double-long-unsigned	900	Valid values: - 300 seconds - 600 seconds - 900 seconds (default) - 1200 seconds - 1800 seconds - 3600 seconds	The period value is configurable using the object "Measurement Period - Demand Settings" with code 1.0.0.8.0.255	R-/R-/--/--	R-/--/--
9	number_of_periods		long-unsigned	1			RW/R-/--/--	RW/--/--
1	reset		integer				R-/R-/--/--	R-/--/--
2	next_period		integer				R-/R-/--/--	R-/--/--
	Demand Register Reactive power+ (QI+QII)	**5**		**1.0.3.4.0.255**	**Average demand**			
1	logical_name		octet-string[6]	0100030400FF			R-/R-/--/--	R-/--/--
2	current_average_value		double-long				R-/R-/--/--	R-/--/--
3	last_average_value		double-long				R-/R-/--/--	R-/--/--
4	scaler_unit		scal_unit_type	{0,29}	scaler=0, unit=var resolution: 000.000 kvar		R-/R-/--/--	R-/--/--
5	status		null-data				R-/R-/--/--	R-/--/--
6	capture_time		octet-string[12]				R-/R-/--/--	R-/--/--
7	start_time_current		octet-string[12]				R-/R-/--/--	R-/--/--
8	period		double-long-unsigned	900	Valid values: - 300 seconds - 600 seconds - 900 seconds (default) - 1200 seconds - 1800 seconds	The period value is configurable using the object "Measurement Period - Demand Settings" with code 1.0.0.8.0.255	R-/R-/--/--	R-/--/--

#	Object/Attribute	Class	Type	Value	Meaning	Comments	Access Rights - Base FW (M/R/F/P)	Access Rights - Secured FW (SG/SB/P)
					- 3600 seconds			
9	number_of_periods		long-unsigned	1			RW/R-/--/--	RW/--/--
1	reset		integer				R-/R-/--/--	R-/--/--
2	next_period		integer				R-/R-/--/--	R-/--/--
	Demand Register Reactive power– (QIII+QIV)	**5**		**1.0.4.4.0.255**	**Average demand**			
1	logical_name		octet-string[6]	0100040400FF			R-/R-/--/--	R-/--/--
2	current_average_value		double-long				R-/R-/--/--	R-/--/--
3	last_average_value		double-long				R-/R-/--/--	R-/--/--
4	scaler_unit		scal_unit_type	{0,29}	scaler=0, unit=var resolution: 000.000 kvar		R-/R-/--/--	R-/--/--
5	status		null-data				R-/R-/--/--	R-/--/--
6	capture_time		octet-string[12]				R-/R-/--/--	R-/--/--
7	start_time_current		octet-string[12]				R-/R-/--/--	R-/--/--
8	period		double-long-unsigned	900	Valid values: - 300 seconds - 600 seconds - 900 seconds (default) - 1200 seconds - 1800 seconds - 3600 seconds	The period value is configurable using the object “Measurement Period - Demand Settings” with code 1.0.0.8.0.255	R-/R-/--/--	R-/--/--
9	number_of_periods		long-unsigned	1			RW/R-/--/--	RW/--/--
1	reset		integer				R-/R-/--/--	R-/--/--
2	next_period		integer				R-/R-/--/--	R-/--/--
	Demand Register Reactive power QI	**5**		**1.0.5.4.0.255**	**Average demand**			
1	logical_name		octet-string[6]	0100050400FF			R-/R-/--/--	R-/--/--
2	current_average_value		double-long				R-/R-/--/--	R-/--/--
3	last_average_value		double-long				R-/R-/--/--	R-/--/--

#	Object/Attribute	Class	Type	Value	Meaning	Comments	Access Rights - Base FW (M/R/F/P)	Access Rights - Secured FW (SG/SB/P)
4	scaler_unit		scal_unit_type	{0,29}	scaler=0, unit=var resolution: 000.000 kvar		R-/R-/--/--	R-/--/--
5	status		null-data				R-/R-/--/--	R-/--/--
6	capture_time		octet-string[12]				R-/R-/--/--	R-/--/--
7	start_time_current		octet-string[12]				R-/R-/--/--	R-/--/--
8	period		double-long-unsigned	900	Valid values: - 300 seconds - 600 seconds - 900 seconds (default) - 1200 seconds - 1800 seconds - 3600 seconds	The period value is configurable using the object “Measurement Period - Demand Settings” with code 1.0.0.8.0.255	R-/R-/--/--	R-/--/--
9	number_of_periods		long-unsigned	1			RW/R-/--/--	RW/--/--
1	reset		integer				R-/R-/--/--	R-/--/--
2	next_period		integer				R-/R-/--/--	R-/--/--
	Demand Register Reactive power QII	**5**		**1.0.6.4.0.255**	**Average demand**			
1	logical_name		octet-string[6]	0100060400FF			R-/R-/--/--	R-/--/--
2	current_average_value		double-long				R-/R-/--/--	R-/--/--
3	last_average_value		double-long				R-/R-/--/--	R-/--/--
4	scaler_unit		scal_unit_type	{0,29}	scaler=0, unit=var resolution: 000.000 kvar		R-/R-/--/--	R-/--/--
5	status		null-data				R-/R-/--/--	R-/--/--
6	capture_time		octet-string[12]				R-/R-/--/--	R-/--/--
7	start_time_current		octet-string[12]				R-/R-/--/--	R-/--/--
8	period		double-long-unsigned	900	Valid values: - 300 seconds - 600 seconds - 900 seconds (default)	The period value is configurable using the object “Measurement Period - Demand	R-/R-/--/--	R-/--/--

#	Object/Attribute	Class	Type	Value	Meaning	Comments	Access Rights - Base FW (M/R/F/P)	Access Rights - Secured FW (SG/SB/P)
					- 1200 seconds - 1800 seconds - 3600 seconds	Settings" with code 1.0.0.8.0.255		
9	number_of_periods		long-unsigned	1			RW/R-/--/--	RW/--/--
1	reset		integer				R-/R-/--/--	R-/--/--
2	next_period		integer				R-/R-/--/--	R-/--/--
	Demand Register Reactive power QIII	**5**		**1.0.7.4.0.255**	**Average demand**			
1	logical_name		octet-string[6]	0100070400FF			R-/R-/--/--	R-/--/--
2	current_average_value		double-long				R-/R-/--/--	R-/--/--
3	last_average_value		double-long				R-/R-/--/--	R-/--/--
4	scaler_unit		scal_unit_type	{0,29}	scaler=0, unit=var resolution: 000.000 kvar		R-/R-/--/--	R-/--/--
5	status		null-data				R-/R-/--/--	R-/--/--
6	capture_time		octet-string[12]				R-/R-/--/--	R-/--/--
7	start_time_current		octet-string[12]				R-/R-/--/--	R-/--/--
8	period		double-long-unsigned	900	Valid values: - 300 seconds - 600 seconds - 900 seconds (default) - 1200 seconds - 1800 seconds - 3600 seconds	The period value is configurable using the object "Measurement Period - Demand Settings" with code 1.0.0.8.0.255	R-/R-/--/--	R-/--/--
9	number_of_periods		long-unsigned	1			RW/R-/--/--	RW/--/--
1	reset		integer				R-/R-/--/--	R-/--/--
2	next_period		integer				R-/R-/--/--	R-/--/--
	Demand Register Reactive power QIV	**5**		**1.0.8.4.0.255**	**Average demand**			
1	logical_name		octet-string[6]	0100080400FF			R-/R-/--/--	R-/--/--

#	Object/Attribute	Class	Type	Value	Meaning	Comments	Access Rights - Base FW (M/R/F/P)	Access Rights - Secured FW (SG/SB/P)
2	current_average_value		double-long				R-/R-/--/--	R-/--/--
3	last_average_value		double-long				R-/R-/--/--	R-/--/--
4	scaler_unit		scal_unit_type	{0,29}	scaler=0, unit=var resolution: 000.000 kvar		R-/R-/--/--	R-/--/--
5	status		null-data				R-/R-/--/--	R-/--/--
6	capture_time		octet-string[12]				R-/R-/--/--	R-/--/--
7	start_time_current		octet-string[12]				R-/R-/--/--	R-/--/--
8	period		double-long-unsigned	900	Valid values: - 300 seconds - 600 seconds - 900 seconds (default) - 1200 seconds - 1800 seconds - 3600 seconds	The period value is configurable using the object "Measurement Period - Demand Settings" with code 1.0.0.8.0.255	R-/R-/--/--	R-/--/--
9	number_of_periods		long-unsigned	1			RW/R-/--/--	RW/--/--
1	reset		integer				R-/R-/--/--	R-/--/--
2	next_period		integer				R-/R-/--/--	R-/--/--
	Demand Register Active power+ L1 (QI+QIV)	**5**		**1.0.21.4.0.255**	**Average demand**	Only polyphase meters		
1	logical_name		octet-string[6]	0100150400FF			R-/R-/--/--	R-/--/--
2	current_average_value		double-long				R-/R-/--/--	R-/--/--
3	last_average_value		double-long				R-/R-/--/--	R-/--/--
4	scaler_unit		scal_unit_type	{0,27}	scaler=0, unit=W resolution: 000.000 kW		R-/R-/--/--	R-/--/--
5	status		null-data				R-/R-/--/--	R-/--/--
6	capture_time		octet-string[12]				R-/R-/--/--	R-/--/--
7	start_time_current		octet-string[12]				R-/R-/--/--	R-/--/--
8	period		double-long-unsigned	900	Valid values: - 300 seconds	The period value is configurable using the object	R-/R-/--/--	R-/--/--

#	Object/Attribute	Class	Type	Value	Meaning	Comments	Access Rights - Base FW (M/R/F/P)	Access Rights - Secured FW (SG/SB/P)
					- 600 seconds - 900 seconds (default) - 1200 seconds - 1800 seconds - 3600 seconds	"Measurement Period - Demand Settings" with code 1.0.0.8.0.255		
9	number_of_periods		long-unsigned	1			RW/R-/--/--	RW/--/--
1	reset		integer				R-/R-/--/--	R-/--/--
2	next_period		integer				R-/R-/--/--	R-/--/--
	Demand Register Active power+ L2 (QI+QIV)	**5**		**1.0.41.4.0.255**	**Average demand**	Only polyphase meters		
1	logical_name		octet-string[6]	0100290400FF			R-/R-/--/--	R-/--/--
2	current_average_value		double-long				R-/R-/--/--	R-/--/--
3	last_average_value		double-long				R-/R-/--/--	R-/--/--
4	scaler_unit		scal_unit_type	{0,27}	scaler=0, unit=W resolution: 000.000 kW		R-/R-/--/--	R-/--/--
5	status		null-data				R-/R-/--/--	R-/--/--
6	capture_time		octet-string[12]				R-/R-/--/--	R-/--/--
7	start_time_current		octet-string[12]				R-/R-/--/--	R-/--/--
8	period		double-long-unsigned	900	Valid values: - 300 seconds - 600 seconds - 900 seconds (default) - 1200 seconds - 1800 seconds - 3600 seconds	The period value is configurable using the object "Measurement Period - Demand Settings" with code 1.0.0.8.0.255	R-/R-/--/--	R-/--/--
9	number_of_periods		long-unsigned	1			RW/R-/--/--	RW/--/--
1	reset		integer				R-/R-/--/--	R-/--/--
2	next_period		integer				R-/R-/--/--	R-/--/--

#	Object/Attribute	Class	Type	Value	Meaning	Comments	Access Rights - Base FW (M/R/F/P)	Access Rights - Secured FW (SG/SB/P)
	Demand Register Active power+ L3 (QI+QIV)	**5**		**1.0.61.4.0.255**	**Average demand**	Only polyphase meters		
1	logical_name		octet-string[6]	01003D0400FF			R-/R-/--/--	R-/--/--
2	current_average_value		double-long				R-/R-/--/--	R-/--/--
3	last_average_value		double-long				R-/R-/--/--	R-/--/--
4	scaler_unit		scal_unit_type	{0,27}	scaler=0, unit=W resolution: 000.000 kW		R-/R-/--/--	R-/--/--
5	status		null-data				R-/R-/--/--	R-/--/--
6	capture_time		octet-string[12]				R-/R-/--/--	R-/--/--
7	start_time_current		octet-string[12]				R-/R-/--/--	R-/--/--
8	period		double-long-unsigned	900	Valid values: - 300 seconds - 600 seconds - 900 seconds (default) - 1200 seconds - 1800 seconds - 3600 seconds	The period value is configurable using the object “Measurement Period - Demand Settings” with code 1.0.0.8.0.255	R-/R-/--/--	R-/--/--
9	number_of_periods		long-unsigned	1			RW/R-/--/--	RW/--/--
1	reset		integer				R-/R-/--/--	R-/--/--
2	next_period		integer				R-/R-/--/--	R-/--/--
	Demand Register Active power– L1 (QII+QIII)	**5**		**1.0.22.4.0.255**	**Average demand**	Only polyphase meters		
1	logical_name		octet-string[6]	0100160400FF			R-/R-/--/--	R-/--/--
2	current_average_value		double-long				R-/R-/--/--	R-/--/--
3	last_average_value		double-long				R-/R-/--/--	R-/--/--
4	scaler_unit		scal_unit_type	{0,27}	scaler=0, unit=W resolution: 000.000 kW		R-/R-/--/--	R-/--/--
5	status		null-data				R-/R-/--/--	R-/--/--
6	capture_time		octet-string[12]				R-/R-/--/--	R-/--/--

#	Object/Attribute	Class	Type	Value	Meaning	Comments	Access Rights - Base FW (M/R/F/P)	Access Rights - Secured FW (SG/SB/P)
7	start_time_current		octet-string[12]				R-/R-/--/--	R-/--/--
8	period		double-long-unsigned	900	Valid values: - 300 seconds - 600 seconds - 900 seconds (default) - 1200 seconds - 1800 seconds - 3600 seconds	The period value is configurable using the object "Measurement Period - Demand Settings" with code 1.0.0.8.0.255	R-/R-/--/--	R-/--/--
9	number_of_periods		long-unsigned	1			RW/R-/--/--	RW/--/--
1	reset		integer				R-/R-/--/--	R-/--/--
2	next_period		integer				R-/R-/--/--	R-/--/--
	Demand Register Active power– L2 (QII+QIII)	**5**		**1.0.42.4.0.255**	**Average demand**	Only polyphase meters		
1	logical_name		octet-string[6]	01002A0400FF			R-/R-/--/--	R-/--/--
2	current_average_value		double-long				R-/R-/--/--	R-/--/--
3	last_average_value		double-long				R-/R-/--/--	R-/--/--
4	scaler_unit		scal_unit_type	{0,27}	scaler=0, unit=W resolution: 000.000 kW		R-/R-/--/--	R-/--/--
5	status		null-data				R-/R-/--/--	R-/--/--
6	capture_time		octet-string[12]				R-/R-/--/--	R-/--/--
7	start_time_current		octet-string[12]				R-/R-/--/--	R-/--/--
8	period		double-long-unsigned	900	Valid values: - 300 seconds - 600 seconds - 900 seconds (default) - 1200 seconds - 1800 seconds - 3600 seconds	The period value is configurable using the object "Measurement Period - Demand Settings" with code 1.0.0.8.0.255	R-/R-/--/--	R-/--/--

#	Object/Attribute	Class	Type	Value	Meaning	Comments	Access Rights - Base FW (M/R/F/P)	Access Rights - Secured FW (SG/SB/P)
9	number_of_periods		long-unsigned	1			RW/R-/--/--	RW/--/--
1	reset		integer				R-/R-/--/--	R-/--/--
2	next_period		integer				R-/R-/--/--	R-/--/--
	Demand Register Active power– L3 (QII+QIII)	**5**		**1.0.62.4.0.255**	**Average demand**	Only polyphase meters		
1	logical_name		octet-string[6]	01003E0400FF			R-/R-/--/--	R-/--/--
2	current_average_value		double-long				R-/R-/--/--	R-/--/--
3	last_average_value		double-long				R-/R-/--/--	R-/--/--
4	scaler_unit		scal_unit_type	{0,27}	scaler=0, unit=W resolution: 000.000 kW		R-/R-/--/--	R-/--/--
5	status		null-data				R-/R-/--/--	R-/--/--
6	capture_time		octet-string[12]				R-/R-/--/--	R-/--/--
7	start_time_current		octet-string[12]				R-/R-/--/--	R-/--/--
8	period		double-long-unsigned	900	Valid values: - 300 seconds - 600 seconds - 900 seconds (default) - 1200 seconds - 1800 seconds - 3600 seconds	The period value is configurable using the object “Measurement Period - Demand Settings” with code 1.0.0.8.0.255	R-/R-/--/--	R-/--/--
9	number_of_periods		long-unsigned	1			RW/R-/--/--	RW/--/--
1	reset		integer				R-/R-/--/--	R-/--/--
2	next_period		integer				R-/R-/--/--	R-/--/--
	Maximum Demand Register Active power+ (QI+QIV)	**4**		**1.0.1.6.x.255**	**Maximum Demand**			
1	logical_name		octet-string[6]	01000106xxFF	x=0 Total x=1...6 Rates contract 1 x=10 Total rates contract 1 x=11...16 Rates contract 2		R-/R-/--/--	R-/--/--

#	Object/Attribute	Class	Type	Value	Meaning	Comments	Access Rights - Base FW (M/R/F/P)	Access Rights - Secured FW (SG/SB/P)
					x=20 Total rates contract 2			
2	value		double-long-unsigned				R-/R-/--/--	R-/--/--
3	scaler_unit		scal_unit_type	{0,27}	scaler=0, unit=W resolution: 000.000 kW		R-/R-/--/--	R-/--/--
4	status		Unsigned		1 = active 0 = inactive		R-/R-/--/--	R-/--/--
5	capture_time		octet-string[12]				R-/R-/--/--	R-/--/--
1	reset		integer	0			-W/--/--/--	-W/--/--
	Maximum Demand Register Active power– (QII+QIII)	**4**		**1.0.2.6.x.255**	**Maximum Demand**			
1	logical_name		octet-string[6]	01000206xxFF	x=0 Total x=1...6 Rates contract 1 x=10 Total rates contract 1 x=11...16 Rates contract 2 x=20 Total rates contract 2		R-/R-/--/--	R-/--/--
2	Value		double-long-unsigned				R-/R-/--/--	R-/--/--
3	scaler_unit		scal_unit_type	{0,27}	scaler=0, unit=W resolution: 000.000 kW		R-/R-/--/--	R-/--/--
4	Status		Unsigned		1 = active 0 = inactive		R-/R-/--/--	R-/--/--
5	capture_time		octet-string[12]				R-/R-/--/--	R-/--/--
1	reset		integer	0			-W/--/--/--	-W/--/--
	Maximum Demand Register Active power+ L1 (QI+QIV)	**4**		**1.0.21.6.x.255**	**Maximum Demand**	Only polyphase meters		
1	logical_name		octet-string[6]	01001506xxFF	x=0 Total x=10 Total rates contract 1		R-/R-/--/--	R-/--/--
2	value		double-long-unsigned				R-/R-/--/--	R-/--/--
3	scaler_unit		scal_unit_type	{0,27}	scaler=0, unit=W resolution: 000.000 kW		R-/R-/--/--	R-/--/--
4	status		Unsigned		1 = active 0 = inactive		R-/R-/--/--	R-/--/--
5	capture_time		octet-string[12]				R-/R-/--/--	R-/--/--

#	Object/Attribute	Class	Type	Value	Meaning	Comments	Access Rights - Base FW (M/R/F/P)	Access Rights - Secured FW (SG/SB/P)
1	reset		integer	0			-W/--/--/--	-W/--/--
	Maximum Demand Register Active power+ L2 (QI+QIV)	**4**		**1.0.41.6.x.255**	**Maximum Demand**	Only polyphase meters		
1	logical_name		octet-string[6]	01002906xxFF	x=0 Total x=10 Total rates contract 1		R-/R-/--/--	R-/--/--
2	value		double-long-unsigned				R-/R-/--/--	R-/--/--
3	scaler_unit		scal_unit_type	{0,27}	scaler=0, unit=W resolution: 000.000 kW		R-/R-/--/--	R-/--/--
4	status		Unsigned		1 = active 0 = inactive		R-/R-/--/--	R-/--/--
5	capture_time		octet-string[12]				R-/R-/--/--	R-/--/--
1	reset		integer	0			-W/--/--/--	-W/--/--
	Maximum Demand Register Active power+ L3 (QI+QIV)	**4**		**1.0.61.6.x.255**	**Maximum Demand**	Only polyphase meters		
1	logical_name		octet-string[6]	01003D06xxFF	x=0 Total x=10 Total rates contract 1		R-/R-/--/--	R-/--/--
2	value		double-long-unsigned				R-/R-/--/--	R-/--/--
3	scaler_unit		scal_unit_type	{0,27}	scaler=0, unit=W resolution: 000.000 kW		R-/R-/--/--	R-/--/--
4	status		Unsigned		1 = active 0 = inactive		R-/R-/--/--	R-/--/--
5	capture_time		octet-string[12]				R-/R-/--/--	R-/--/--
1	reset		integer	0			-W/--/--/--	-W/--/--
	Maximum Demand Register Active power– L1 (QII+QIII)	**4**		**1.0.22.6.x.255**	**Maximum Demand**	Only polyphase meters		
1	logical_name		octet-string[6]	01001606xxFF	x=0 Total x=10 Total rates contract 1		R-/R-/--/--	R-/--/--
2	value		double-long-unsigned				R-/R-/--/--	R-/--/--
3	scaler_unit		scal_unit_type	{0,27}	scaler=0, unit=W resolution: 000.000 kW		R-/R-/--/--	R-/--/--
4	status		Unsigned		1 = active 0 = inactive		R-/R-/--/--	R-/--/--

#	Object/Attribute	Class	Type	Value	Meaning	Comments	Access Rights - Base FW (M/R/F/P)	Access Rights - Secured FW (SG/SB/P)
5	capture_time		octet-string[12]				R-/R-/--/--	R-/--/--
1	reset		integer	0			-W/--/--/--	-W/--/--
	Maximum Demand Register Active power– L2 (QII+QIII)	**4**		**1.0.42.6.x.255**	**Maximum Demand**	Only polyphase meters		
1	logical_name		octet-string[6]	01002A06xxFF	x=0 Total x=10 Total rates contract 1		R-/R-/--/--	R-/--/--
2	value		double-long-unsigned				R-/R-/--/--	R-/--/--
3	scaler_unit		scal_unit_type	{0,27}	scaler=0, unit=W resolution: 000.000 kW		R-/R-/--/--	R-/--/--
4	status		Unsigned		1 = active 0 = inactive		R-/R-/--/--	R-/--/--
5	capture_time		octet-string[12]				R-/R-/--/--	R-/--/--
1	reset		integer	0			-W/--/--/--	-W/--/--
	Maximum Demand Register Active power– L3 (QII+QIII)	**4**		**1.0.62.6.x.255**	**Maximum Demand**	Only polyphase meters		
1	logical_name		octet-string[6]	01003E06xxFF	x=0 Total x=10 Total rates contract 1		R-/R-/--/--	R-/--/--
2	value		double-long-unsigned				R-/R-/--/--	R-/--/--
3	scaler_unit		scal_unit_type	{0,27}	scaler=0, unit=W resolution: 000.000 kW		R-/R-/--/--	R-/--/--
4	status		Unsigned		1 = active 0 = inactive		R-/R-/--/--	R-/--/--
5	capture_time		octet-string[12]				R-/R-/--/--	R-/--/--
1	reset		integer	0			-W/--/--/--	-W/--/--
	Measurement Period - Demand Settings	**3**		**1.0.0.8.0.255**				
1	logical_name		octet-string[6]	0100000800FF			R-/R-/--/--	R-/--/--
2	Value		double-long-unsigned	900	Valid values: - 300 seconds - 600 seconds - 900 seconds (default)	The period value for “Demand Registers” is configurable using this attribute.	RW/R-/--/--	RW/--/--

#	Object/Attribute	Class	Type	Value	Meaning	Comments	Access Rights - Base FW (M/R/F/P)	Access Rights - Secured FW (SG/SB/P)
					- 1200 seconds - 1800 seconds - 3600 seconds			
3	scaler_unit	-	scal_unit_type	{0, 7}	Scaler = 0, unit = seconds		R-/R-/--/--	R-/--/--

5.6.3 Diagrama de Cargas

#	Object/Attribute	Class	Type	Value	Meaning	Comments	Access Rights - Base FW (M/R/F/P)	Access Rights - Secured FW (SG/SB/P)
	AMR profile status for Load profile with period 1	**1**		**0.0.96.10.7.255**				
1	logical_name		octet-string[6]	0000600A07FF			R-/R-/--/R-	R-/--/R-
2	status		unsigned	{LI, AR, OF, SR, AC, RD, FA, RA}			R-/R-/--/R-	R-/--/R-
	Load profile with period 1 15m Load Profile	**7**		**1.0.99.1.0.255**				
1	logical_name		octet-string[6]	0100630100FF			R-/R-/--/--	R-/--/--
2	buffer		array		selective access per range The buffer must be filled monotonously, i.e. no irregular entries are allowed = exactly one entry per capture period		R-/R-/--/--	R-/--/--
3	capture_objects		array	{8,0.0.1.0.0.255,2}; {1,0.0.96.10.7.255,2}; {3,1.0.1.29.0.255,2};	clock; AMR profile status; Active energy import (+A) incremental The measurement values that must be possible of being selected are: 1.0.x.8.0.255 (x=1,2,5,6,7,8) 1.0.x.8.0.255 L1 - (x=21,22,25,26,27,28) L2 - (x=41,42,45,46,47,48) L3 - (x=61,62,65,66,67,68) 1.0.x.29.0.255 (x=1,2,5,6,7,8)	By default there is 1 measurement value in the array. It must be possible to select at least 8 measument values in the array for the single-phase meters and 12 for three-phase meters. Total energys: +A, -A, +Ri (QI), +Rc (QII), -Ri (QIII), -Rc (QIV) Total energys per phase (only for three-phase meters): +A, -A, +Ri (QI), +Rc (QII), -Ri (QIII), -Rc (QIV) Incremental energys:	RW/R-/--/--	RW/--/--

#	Object/Attribute	Class	Type	Value	Meaning	Comments	Access Rights - Base FW (M/R/F/P)	Access Rights - Secured FW (SG/SB/P)
						+A, -A, +Ri (QI), +Rc (QII), -Ri (QIII), -Rc (QIV)		
					1.1.x.29.0.255 (x=1,2,5,6,7,8)	Incremental energys (short): +A, -A, +Ri (QI), +Rc (QII), -Ri (QIII), -Rc (QIV)		
					1.1.x.29.0.255 L1 - (x=21,22,25,26,27,28) L2 - (x=41,42,45,46,47,48) L3 - (x=61,62,65,66,67,68)	Incremental energys (short) per phase (only for three-phase meters): +A, -A, +Ri (QI), +Rc (QII), -Ri (QIII), -Rc (QIV)		
					1.0.13.5.0.255	Last Average power factor		
					1.1.13.5.0.255	Last Average power factor (short)		
					1.0.x.5.0.255 L1 - x=32 | L2 - x= 52 | L3 - x = 72	Last Average Voltage per phase (only for three-phase meters)		
					1.1.x.5.0.255 L1 - x=32 | L2 - x= 52 | L3 - x = 72	Last Average Voltage (short) per phase (only for three-phase meters)		
					1.0.12.5.0.255	Last Average any phase voltage		
					1.1.12.5.0.255	Last Average any phase voltage (short)		

#	Object/Attribute	Class	Type	Value	Meaning	Comments	Access Rights - Base FW (M/R/F/P)	Access Rights - Secured FW (SG/SB/P)
4	capture_period		double-long-unsigned	900	Valid values: - 300 seconds - 600 seconds - 900 seconds (default) - 1200 seconds - 1800 seconds - 3600 seconds		RW/R-/--/--	RW/--/--
5	sort_method		enum	1	unsorted (FIFO)		R-/R-/--/--	R-/--/--
6	sort_object		capture object definition	none	none		R-/R-/--/--	R-/--/--
7	entries_in_use		double-long-unsigned				R-/R-/--/--	R-/--/--
8	profile_entries		double-long-unsigned	>6720	Profile_entries should depend on the number of captured objects. Minimum requirement: >= 6720 (70 days with capture_period=15 min and at least 3 measurement values defined in the array)		R-/R-/--/--	R-/--/--
	Last Average power factor (PF) register	**5**		**1.0.13.5.0.255**	**To be used in the load profile**			
1	logical_name		octet-string[6]	01000D0500FF			R-/R-/--/--	R-/--/--
2	current_average_value		double-long				R-/R-/--/--	R-/--/--
3	last_average_value		double-long				R-/R-/--/--	R-/--/--
4	scaler_unit		scal_unit_type	{-2,255}			R-/R-/--/--	R-/--/--
5	status		null-data				R-/R-/--/--	R-/--/--
6	capture_time		octet-string[12]				R-/R-/--/--	R-/--/--
7	start_time_current		octet-string[12]				R-/R-/--/--	R-/--/--
8	period		double-long-unsigned	900*	This attribute “period” shall always be synchronous with the attribute “capture_period” of the load profile (see 1.0.99.1.0.255 object).		R-/R-/--/--	R-/--/--
9	number_of_periods		long-unsigned	1			R-/R-/--/--	R-/--/--
1	reset		integer				R-/R-/--/--	R-/--/--

#	Object/Attribute	Class	Type	Value	Meaning	Comments	Access Rights - Base FW (M/R/F/P)	Access Rights - Secured FW (SG/SB/P)
2	next_period		integer				R-/R-/--/--	R-/--/--
	Last Average power factor (PF) register (short)	**5**		**1.1.13.5.0.255**	**To be used in the load profile**			
1	logical_name		octet-string[6]	01010D0500FF			R-/R-/--/--	R-/--/--
2	current_average_value		long				R-/R-/--/--	R-/--/--
3	last_average_value		long				R-/R-/--/--	R-/--/--
4	scaler_unit		scal_unit_type	{-2,255}			R-/R-/--/--	R-/--/--
5	status		null-data				R-/R-/--/--	R-/--/--
6	capture_time		octet-string[12]				R-/R-/--/--	R-/--/--
7	start_time_current		octet-string[12]				R-/R-/--/--	R-/--/--
8	period		double-long-unsigned	900*	This attribute “period” shall always be synchronous with the attribute “capture_period” of the load profile (see 1.0.99.1.0.255 object).		R-/R-/--/--	R-/--/--
9	number_of_periods		long-unsigned	1			R-/R-/--/--	R-/--/--
1	reset		integer				R-/R-/--/--	R-/--/--
2	next_period		integer				R-/R-/--/--	R-/--/--
	Last Average Voltage L1 register	**5**		**1.0.32.5.0.255**	**To be used in the load profile**	Only polyphase meters		
1	logical_name		octet-string[6]	0100200500FF			R-/R-/--/--	R-/--/--
2	current_average_value		double-long-unsigned				R-/R-/--/--	R-/--/--
3	last_average_value		double-long-unsigned				R-/R-/--/--	R-/--/--
4	scaler_unit		scal_unit_type	{-1,35}	scaler=-1, unit=V		R-/R-/--/--	R-/--/--
5	Status		null-data				R-/R-/--/--	R-/--/--
6	capture_time		octet-string[12]				R-/R-/--/--	R-/--/--
7	start_time_current		octet-string[12]				R-/R-/--/--	R-/--/--
8	Period		double-long-unsigned	900*	This attribute “period” shall always be synchronous with the attribute “capture_period” of the load profile (see 1.0.99.1.0.255 object).		R-/R-/--/--	R-/--/--
9	number_of_periods		long-unsigned	1			R-/R-/--/--	R-/--/--

#	Object/Attribute	Class	Type	Value	Meaning	Comments	Access Rights - Base FW (M/R/F/P)	Access Rights - Secured FW (SG/SB/P)
1	Reset		integer				R-/R-/--/--	R-/--/--
2	next_period		integer				R-/R-/--/--	R-/--/--
	Last Average Voltage L1 register (short)	**5**		**1.1.32.5.0.255**	**To be used in the load profile**	Only polyphase meters		
1	logical_name		octet-string[6]	0101200500FF			R-/R-/--/--	R-/--/--
2	current_average_value		long-unsigned				R-/R-/--/--	R-/--/--
3	last_average_value		long-unsigned				R-/R-/--/--	R-/--/--
4	scaler_unit		scal_unit_type	{-1,35}	scaler=-1, unit=V		R-/R-/--/--	R-/--/--
5	Status		null-data				R-/R-/--/--	R-/--/--
6	capture_time		octet-string[12]				R-/R-/--/--	R-/--/--
7	start_time_current		octet-string[12]				R-/R-/--/--	R-/--/--
8	Period		double-long-unsigned	900*	This attribute “period” shall always be synchronous with the attribute “capture_period” of the load profile (see 1.0.99.1.0.255 object).		R-/R-/--/--	R-/--/--
9	number_of_periods		long-unsigned	1			R-/R-/--/--	R-/--/--
1	Reset		integer				R-/R-/--/--	R-/--/--
2	next_period		integer				R-/R-/--/--	R-/--/--
	Last Average Voltage L2 register	**5**		**1.0.52.5.0.255**	**To be used in the load profile**	Only polyphase meters		
1	logical_name		octet-string[6]	0100340500FF			R-/R-/--/--	R-/--/--
2	current_average_value		double-long-unsigned				R-/R-/--/--	R-/--/--
3	last_average_value		double-long-unsigned				R-/R-/--/--	R-/--/--
4	scaler_unit		scal_unit_type	{-1,35}	scaler=-1, unit=V		R-/R-/--/--	R-/--/--
5	status		null-data				R-/R-/--/--	R-/--/--
6	capture_time		octet-string[12]				R-/R-/--/--	R-/--/--
7	start_time_current		octet-string[12]				R-/R-/--/--	R-/--/--
8	period		double-long-unsigned	900*	This attribute “period” shall always be synchronous with the attribute “capture_period” of the load profile (see 1.0.99.1.0.255 object).		R-/R-/--/--	R-/--/--

#	Object/Attribute	Class	Type	Value	Meaning	Comments	Access Rights - Base FW (M/R/F/P)	Access Rights - Secured FW (SG/SB/P)
9	number_of_periods		long-unsigned	1			R-/R-/--/--	R-/--/--
1	reset		integer				R-/R-/--/--	R-/--/--
2	next_period		integer				R-/R-/--/--	R-/--/--
	Last Average Voltage L2 register (short)	**5**		**1.1.52.5.0.255**	**To be used in the load profile**	Only polyphase meters		
1	logical_name		octet-string[6]	0101340500FF			R-/R-/--/--	R-/--/--
2	current_average_value		long-unsigned				R-/R-/--/--	R-/--/--
3	last_average_value		long-unsigned				R-/R-/--/--	R-/--/--
4	scaler_unit		scal_unit_type	{-1,35}	scaler=-1, unit=V		R-/R-/--/--	R-/--/--
5	status		null-data				R-/R-/--/--	R-/--/--
6	capture_time		octet-string[12]				R-/R-/--/--	R-/--/--
7	start_time_current		octet-string[12]				R-/R-/--/--	R-/--/--
8	period		double-long-unsigned	900*	This attribute “period” shall always be synchronous with the attribute “capture_period” of the load profile (see 1.0.99.1.0.255 object).		R-/R-/--/--	R-/--/--
9	number_of_periods		long-unsigned	1			R-/R-/--/--	R-/--/--
1	reset		integer				R-/R-/--/--	R-/--/--
2	next_period		integer				R-/R-/--/--	R-/--/--
	Last Average Voltage L3 register	**5**		**1.0.72.5.0.255**	**To be used in the load profile**	Only polyphase meters		
1	logical_name		octet-string[6]	0100480500FF			R-/R-/--/--	R-/--/--
2	current_average_value		double-long-unsigned				R-/R-/--/--	R-/--/--
3	last_average_value		double-long-unsigned				R-/R-/--/--	R-/--/--
4	scaler_unit		scal_unit_type	{-1,35}	scaler=-1, unit=V		R-/R-/--/--	R-/--/--
5	status		null-data				R-/R-/--/--	R-/--/--
6	capture_time		octet-string[12]				R-/R-/--/--	R-/--/--
7	start_time_current		octet-string[12]				R-/R-/--/--	R-/--/--

#	Object/Attribute	Class	Type	Value	Meaning	Comments	Access Rights - Base FW (M/R/F/P)	Access Rights - Secured FW (SG/SB/P)
8	period		double-long-unsigned	900*	This attribute “period” shall always be synchronous with the attribute “capture_period” of the load profile (see 1.0.99.1.0.255 object).		R-/R-/--/--	R-/--/--
9	number_of_periods		long-unsigned	1			R-/R-/--/--	R-/--/--
1	reset		integer				R-/R-/--/--	R-/--/--
2	next_period		integer				R-/R-/--/--	R-/--/--
	Last Average Voltage L3 register (short)	**5**		**1.1.72.5.0.255**	**To be used in the load profile**	Only polyphase meters		
1	logical_name		octet-string[6]	0101480500FF			R-/R-/--/--	R-/--/--
2	current_average_value		long-unsigned				R-/R-/--/--	R-/--/--
3	last_average_value		long-unsigned				R-/R-/--/--	R-/--/--
4	scaler_unit		scal_unit_type	{-1,35}	scaler=-1, unit=V		R-/R-/--/--	R-/--/--
5	status		null-data				R-/R-/--/--	R-/--/--
6	capture_time		octet-string[12]				R-/R-/--/--	R-/--/--
7	start_time_current		octet-string[12]				R-/R-/--/--	R-/--/--
8	period		double-long-unsigned	900*	This attribute “period” shall always be synchronous with the attribute “capture_period” of the load profile (see 1.0.99.1.0.255 object).		R-/R-/--/--	R-/--/--
9	number_of_periods		long-unsigned	1			R-/R-/--/--	R-/--/--
1	reset		integer				R-/R-/--/--	R-/--/--
2	next_period		integer				R-/R-/--/--	R-/--/--
	Last Average any phase voltage register	**5**		**1.0.12.5.0.255**	**To be used in the load profile**			
1	logical_name		octet-string[6]	01000C0500FF			R-/R-/--/--	R-/--/--
2	current_average_value		double-long-unsigned				R-/R-/--/--	R-/--/--
3	last_average_value		double-long-unsigned				R-/R-/--/--	R-/--/--
4	scaler_unit		scal_unit_type	{-1,35}	scaler=-1, unit=V		R-/R-/--/--	R-/--/--
5	status		null-data				R-/R-/--/--	R-/--/--
6	capture_time		octet-string[12]				R-/R-/--/--	R-/--/--

#	Object/Attribute	Class	Type	Value	Meaning	Comments	Access Rights - Base FW (M/R/F/P)	Access Rights - Secured FW (SG/SB/P)
7	start_time_current		octet-string[12]				R-/R-/--/--	R-/--/--
8	period		double-long-unsigned	900*	This attribute “period” shall always be synchronous with the attribute “capture_period” of the load profile (see 1.0.99.1.0.255 object).		R-/R-/--/--	R-/--/--
9	number_of_periods		long-unsigned	1			R-/R-/--/--	R-/--/--
1	reset		integer				R-/R-/--/--	R-/--/--
2	next_period		integer				R-/R-/--/--	R-/--/--
	Last Average any phase voltage register (short)	**5**		**1.1.12.5.0.255**	**To be used in the load profile**			
1	logical_name		octet-string[6]	01010C0500FF			R-/R-/--/--	R-/--/--
2	current_average_value		long-unsigned				R-/R-/--/--	R-/--/--
3	last_average_value		long-unsigned				R-/R-/--/--	R-/--/--
4	scaler_unit		scal_unit_type	{-1,35}	scaler=-1, unit=V		R-/R-/--/--	R-/--/--
5	status		null-data				R-/R-/--/--	R-/--/--
6	capture_time		octet-string[12]				R-/R-/--/--	R-/--/--
7	start_time_current		octet-string[12]				R-/R-/--/--	R-/--/--
8	period		double-long-unsigned	900*	This attribute “period” shall always be synchronous with the attribute “capture_period” of the load profile (see 1.0.99.1.0.255 object).		R-/R-/--/--	R-/--/--
9	number_of_periods		long-unsigned	1			R-/R-/--/--	R-/--/--
1	reset		integer				R-/R-/--/--	R-/--/--
2	next_period		integer				R-/R-/--/--	R-/--/--

5.6.4 Valores Instantâneos

#	Object/Attribute	Class	Type	Value	Meaning	Comments	Access Rights - Base FW (M/R/F/P)	Access Rights - Secured FW (SG/SB/P)
	Instantaneous voltage L1	**3**		**1.0.32.7.0.255**				
1	logical_name		octet-string[6]	0100200700FF			R-/R-/--/--	R-/--/--
2	Value		long-unsigned				R-/R-/--/--	R-/--/--
3	scaler_unit		scal_unit_type	{-1,35}	scaler=-1, unit=V resolution: 000.0 V		R-/R-/--/--	R-/--/--
	Instantaneous current L1	**3**		**1.0.31.7.0.255**				
1	logical_name		octet-string[6]	01001F0700FF			R-/R-/--/--	R-/--/--
2	Value		long-unsigned				R-/R-/--/--	R-/--/--
3	scaler_unit		scal_unit_type	{-1,33}	scaler=-1, unit=A resolution: 000.0 A		R-/R-/--/--	R-/--/--
	Instantaneous voltage L2	**3**		**1.0.52.7.0.255**		Only polyphase meters		
1	logical_name		octet-string[6]	0100340700FF			R-/R-/--/--	R-/--/--
2	Value		long-unsigned				R-/R-/--/--	R-/--/--
3	scaler_unit		scal_unit_type	{-1,35}	scaler=-1, unit=V resolution: 000.0 V		R-/R-/--/--	R-/--/--
	Instantaneous current L2	**3**		**1.0.51.7.0.255**		Only polyphase meters		
1	logical_name		octet-string[6]	0100330700FF			R-/R-/--/--	R-/--/--
2	Value		long-unsigned				R-/R-/--/--	R-/--/--
3	scaler_unit		scal_unit_type	{-1,33}	scaler=-1, unit=A resolution: 000.0 A		R-/R-/--/--	R-/--/--
	Instantaneous voltage L3	**3**		**1.0.72.7.0.255**		Only polyphase meters		
1	logical_name		octet-string[6]	0100480700FF			R-/R-/--/--	R-/--/--
2	value		long-unsigned				R-/R-/--/--	R-/--/--
3	scaler_unit		scal_unit_type	{-1,35}	scaler=-1, unit=V resolution: 000.0 V		R-/R-/--/--	R-/--/--

#	Object/Attribute	Class	Type	Value	Meaning	Comments	Access Rights - Base FW (M/R/F/P)	Access Rights - Secured FW (SG/SB/P)
	Instantaneous current L3	**3**		**1.0.71.7.0.255**		Only polyphase meters		
1	logical_name		octet-string[6]	0100470700FF	-		R-/R-/--/--	R-/--/--
2	value		long-unsigned		-		R-/R-/--/--	R-/--/--
3	scaler_unit		scal_unit_type	{-1,33}	scaler=-1, unit=A resolution: 000.0 A		R-/R-/--/--	R-/--/--
	Instantaneous current (Sum over all phases)	**3**		**1.0.90.7.0.255**		Only polyphase meters		
1	logical_name		octet-string[6]	01005A0700FF			R-/R-/--/--	R-/--/--
2	value		long-unsigned		total current (sum of all phases)		R-/R-/--/--	R-/--/--
3	scaler_unit		scal_unit_type	{-1,33}	scaler=-1, unit=A resolution: 000.0 A		R-/R-/--/--	R-/--/--
	Instantaneous active power + (L1)	**3**		**1.0.21.7.0.255**		Only polyphase meters		
1	logical_name		octet-string[6]	0100150700FF			R-/R-/--/--	R-/--/--
2	value		Double-long-unsigned		*L*1 Active power+ (QI+QIV)		R-/R-/--/--	R-/--/--
3	scaler_unit		scal_unit_type	{0,27}	scaler=0, unit=W resolution: 00.000 kW		R-/R-/--/--	R-/--/--
	Instantaneous active power - (L1)	**3**		**1.0.22.7.0.255**		Only polyphase meters		
1	logical_name		octet-string[6]	0100160700FF			R-/R-/--/--	R-/--/--
2	value		Double-long-unsigned		*L*1 Active power– (QII+QIII)		R-/R-/--/--	R-/--/--
3	scaler_unit		scal_unit_type	{0,27}	scaler=0, unit=W resolution: 00.000 kW		R-/R-/--/--	R-/--/--
	Instantaneous active power + (L2)	**3**		**1.0.41.7.0.255**		Only polyphase meters		
1	logical_name		octet-string[6]	0100290700FF			R-/R-/--/--	R-/--/--
2	value		Double-long-unsigned		*L*2 Active power+ (QI+QIV)		R-/R-/--/--	R-/--/--
3	scaler_unit		scal_unit_type	{0,27}	scaler=0, unit=W resolution: 00.000 kW		R-/R-/--/--	R-/--/--

#	Object/Attribute	Class	Type	Value	Meaning	Comments	Access Rights - Base FW (M/R/F/P)	Access Rights - Secured FW (SG/SB/P)
	Instantaneous active power - (L2)	**3**		**1.0.42.7.0.255**		Only polyphase meters		
1	logical_name		octet-string[6]	01002A0700FF			R-/R-/--/--	R-/--/--
2	value		Double-long-unsigned		*L*2 Active power– (QII+QIII)		R-/R-/--/--	R-/--/--
3	scaler_unit		scal_unit_type	{0,27}	scaler=0, unit=W resolution: 00.000 kW		R-/R-/--/--	R-/--/--
	Instantaneous active power + (L3)	**3**		**1.0.61.7.0.255**	-	Only polyphase meters		
1	logical_name		octet-string[6]	01003D0700FF	-		R-/R-/--/--	R-/--/--
2	value		Double-long-unsigned		*L*3 Active power+ (QI+QIV)		R-/R-/--/--	R-/--/--
3	scaler_unit		scal_unit_type	{0,27}	scaler=0, unit=W resolution: 00.000 kW		R-/R-/--/--	R-/--/--
	Instantaneous active power - (L3)	**3**		**1.0.62.7.0.255**		Only polyphase meters		
1	logical_name		octet-string[6]	01003E0700FF			R-/R-/--/--	R-/--/--
2	value		Double-long-unsigned		*L*3 Active power– (QII+QIII)		R-/R-/--/--	R-/--/--
3	scaler_unit		scal_unit_type	{0,27}	scaler=0, unit=W resolution: 00.000 kW		R-/R-/--/--	R-/--/--
	Instantaneous active power + (Sum of all phases)	**3**		**1.0.1.7.0.255**				
1	logical_name		octet-string[6]	0100010700FF			R-/R-/--/--	R-/--/--
2	value		Double-long-unsigned		Σ *Li* Active power+ (QI+QIV)		R-/R-/--/--	R-/--/--
3	scaler_unit		scal_unit_type	{0,27}	scaler=0, unit=W resolution: 00.000 kW		R-/R-/--/--	R-/--/--
	Instantaneous active power - (Sum of all phases)	**3**		**1.0.2.7.0.255**				
1	logical_name		octet-string[6]	0100020700FF			R-/R-/--/--	R-/--/--
2	value		Double-long-unsigned		Σ *Li* Active power– (QII+QIII)		R-/R-/--/--	R-/--/--
3	scaler_unit		scal_unit_type	{0,27}	scaler=0, unit=W resolution: 00.000 kW		R-/R-/--/--	R-/--/--

#	Object/Attribute	Class	Type	Value	Meaning	Comments	Access Rights - Base FW (M/R/F/P)	Access Rights - Secured FW (SG/SB/P)
	Instantaneous apparent power + (L1)	**3**		**1.0.29.7.0.255**		Only polyphase meters		
1	logical_name		octet-string[6]	01001D0700FF			R-/R-/--/--	R-/--/--
2	Value		Double-long-unsigned		*L*1 Apparent power+ (QI+QIV)		R-/R-/--/--	R-/--/--
3	scaler_unit		scal_unit_type	{0,28}	scaler=0, unit=VA resolution: 00.000 kVA		R-/R-/--/--	R-/--/--
	Instantaneous apparent power - (L1)	**3**		**1.0.30.7.0.255**		Only polyphase meters		
1	logical_name		octet-string[6]	01001E0700FF			R-/R-/--/--	R-/--/--
2	value		Double-long-unsigned		*L*1 Apparent power- (QII+QIII)		R-/R-/--/--	R-/--/--
3	scaler_unit		scal_unit_type	{0,28}	scaler=0, unit=VA resolution: 00.000 kVA		R-/R-/--/--	R-/--/--
	Instantaneous apparent power + (L2)	**3**		**1.0.49.7.0.255**		Only polyphase meters		
1	logical_name		octet-string[6]	0100310700FF			R-/R-/--/--	R-/--/--
2	value		Double-long-unsigned		*L*2 Apparent power+ (QI+QIV)		R-/R-/--/--	R-/--/--
3	scaler_unit		scal_unit_type	{0,28}	scaler=0, unit=VA resolution: 00.000 kVA		R-/R-/--/--	R-/--/--
	Instantaneous apparent power - (L2)	**3**		**1.0.50.7.0.255**		Only polyphase meters		
1	logical_name		octet-string[6]	0100320700FF			R-/R-/--/--	R-/--/--
2	value		Double-long-unsigned		*L*2 Apparent power- (QII+QIII)		R-/R-/--/--	R-/--/--
3	scaler_unit		scal_unit_type	{0,28}	scaler=0, unit=VA resolution: 00.000 kVA		R-/R-/--/--	R-/--/--
	Instantaneous apparent power + (L3)	**3**		**1.0.69.7.0.255**		Only polyphase meters		
1	logical_name		octet-string[6]	0100450700FF			R-/R-/--/--	R-/--/--
2	value		Double-long-unsigned		*L*3 Apparent power+ (QI+QIV)		R-/R-/--/--	R-/--/--
3	scaler_unit		scal_unit_type	{0,28}	scaler=0, unit=VA resolution: 00.000 kVA		R-/R-/--/--	R-/--/--

#	Object/Attribute	Class	Type	Value	Meaning	Comments	Access Rights - Base FW (M/R/F/P)	Access Rights - Secured FW (SG/SB/P)
	Instantaneous apparent power - (L3)	**3**		**1.0.70.7.0.255**		Only polyphase meters		
1	logical_name		octet-string[6]	0100460700FF			R-/R-/--/--	R-/--/--
2	value		Double-long-unsigned		*L*3 Apparent power- (QII+QIII)		R-/R-/--/--	R-/--/--
3	scaler_unit		scal_unit_type	{0,28}	scaler=0, unit=VA resolution: 00.000 kVA		R-/R-/--/--	R-/--/--
	Instantaneous apparent power + (Sum of all phases)	**3**		**1.0.9.7.0.255**				
1	logical_name		octet-string[6]	0100090700FF			R-/R-/--/--	R-/--/--
2	value		Double-long-unsigned		∑ *Li* Apparent power+ (QI+QIV)		R-/R-/--/--	R-/--/--
3	scaler_unit		scal_unit_type	{0,28}	scaler=0, unit=VA resolution: 00.000 kVA		R-/R-/--/--	R-/--/--
	Instantaneous apparent power - (Sum of all phases)	**3**		**1.0.10.7.0.255**				
1	logical_name		octet-string[6]	01000A0700FF			R-/R-/--/--	R-/--/--
2	value		Double-long-unsigned		∑ *Li* Apparent power– (QII+QIII)		R-/R-/--/--	R-/--/--
3	scaler_unit		scal_unit_type	{0,28}	scaler=0, unit=VA resolution: 00.000 kVA		R-/R-/--/--	R-/--/--
	Instantaneous power factor (PF)	**3**		**1.0.13.7.0.255**				
1	logical_name		octet-string[6]	01000D0700FF			R-/R-/--/--	R-/--/--
2	value		long-unsigned		sum of all phases: P/S		R-/R-/--/--	R-/--/--
3	scaler_unit		scal_unit_type	{-3,255}	scaler=-3, unit=none resolution: 0.000		R-/R-/--/--	R-/--/--
	Instantaneous power factor (PF) L1	**3**		**1.0.33.7.0.255**		Only polyphase meters		
1	logical_name		octet-string[6]	0100210700FF			R-/R-/--/--	R-/--/--
2	value		long-unsigned		Phase L1: P/S		R-/R-/--/--	R-/--/--
3	scaler_unit		scal_unit_type	{-3,255}	scaler=-3, unit=none resolution: 0.000		R-/R-/--/--	R-/--/--

#	Object/Attribute	Class	Type	Value	Meaning	Comments	Access Rights - Base FW (M/R/F/P)	Access Rights - Secured FW (SG/SB/P)
	Instantaneous power factor (PF) L2	**3**		**1.0.53.7.0.255**		Only polyphase meters		
1	logical_name		octet-string[6]	0100350700FF			R-/R-/--/--	R-/--/--
2	value		long-unsigned		Phase L2: P/S		R-/R-/--/--	R-/--/--
3	scaler_unit		scal_unit_type	{-3,255}	scaler=-3, unit=none resolution: 0.000		R-/R-/--/--	R-/--/--
	Instantaneous power factor (PF) L3	**3**		**1.0.73.7.0.255**		Only polyphase meters		
1	logical_name		octet-string[6]	0100490700FF			R-/R-/--/--	R-/--/--
2	value		long-unsigned		Phase L3: P/S		R-/R-/--/--	R-/--/--
3	scaler_unit		scal_unit_type	{-3,255}	scaler=-3, unit=none resolution: 0.000		R-/R-/--/--	R-/--/--
	Frequency	**3**		**1.0.14.7.0.255**				
1	logical_name		octet-string[6]	01000E0700FF			R-/R-/--/--	R-/--/--
2	value		long-unsigned		Frequency		R-/R-/--/--	R-/--/--
3	scaler_unit		scal_unit_type	{-1,44}	scaler=-1, unit=Hz resolution: 00.0 Hz		R-/R-/--/--	R-/--/--
	Instantaneous Values	**7**		**0.0.21.0.5.255**	**Instantaneous Values**			
1	logical_name		octet-string[6]	0000150005FF			R-/R-/--/--	R-/--/--
2	buffer		array				R-/R-/--/--	R-/--/--
3	capture_objects		array[20]	{3,1.0.32.7.0.255,2} {3,1.0.52.7.0.255,2} {3,1.0.72.7.0.255,2} {3,1.0.31.7.0.255,2} {3,1.0.51.7.0.255,2}	It must be possible to defined the instantaneous values that are apart of the array: Instantaneous voltage L1 Instantaneous voltage L2 Instantaneous voltage L3 Instantaneous current L1 Instantaneous current L2	 only for polyphase meters only for polyphase meters only for polyphase meters	RW/R-/--/--	RW/--/--

#	Object/Attribute	Class	Type	Value	Meaning	Comments	Access Rights - Base FW (M/R/F/P)	Access Rights - Secured FW (SG/SB/P)
				{3,1.0.71.7.0.255,2}	Instantaneous current L3	only for polyphase meters		
				{3,1.0.90.7.0.255,2}	Instantaneous current (sum over all phases)	only for polyphase meters		
				{3,1.0.33.7.0.255,2}	Instantaneous power factor (PF) L1	only for polyphase meters		
				{3,1.0.53.7.0.255,2}	Instantaneous power factor (PF) L2	only for polyphase meters		
				{3,1.0.73.7.0.255,2}	Instantaneous power factor (PF) L3	only for polyphase meters		
				{3,1.0.13.7.0.255,2}	Instantaneous power factor (PF)			
				{3,1.0.14.7.0.255,2}	Frequency			
				{3,1.0.21.7.0.255,2}	Instantaneous active power + (L1)	only for polyphase meters		
				{3,1.0.41.7.0.255,2}	Instantaneous active power + (L2)	only for polyphase meters		
				{3,1.0.61.7.0.255,2}	Instantaneous active power + (L3)	only for polyphase meters		
				{3,1.0.1.7.0.255,2}	Instantaneous active power + (Sum of all phases)			
				{3,1.0.22.7.0.255,2}	Instantaneous active power - (L1)	only for polyphase meters		
				{3,1.0.42.7.0.255,2}	Instantaneous active power - (L2)	only for polyphase meters		
				{3,1.0.62.7.0.255,2}	Instantaneous active power - (L3)	only for polyphase meters		
				{3,1.0.2.7.0.255,2}	Instantaneous active power - (Sum of all phases)			
4	capture_period		double-long-unsigned	0	Asynchronously		R-/R-/--/--	R-/--/--
5	sort_method		enum	1	unsorted (FIFO)		R-/R-/--/--	R-/--/--
6	sort_object		capture object definition	none	none		R-/R-/--/--	R-/--/--
7	entries_in_use		double-long-unsigned				R-/R-/--/--	R-/--/--
8	profile_entries		double-long-unsigned	1	Profile entries is limited to 1		R-/R-/--/--	R-/--/--

5.6.5 Qualidade de Serviço (variações de tensão, perda de neutro e monitorização de sobretensões)

#	Object/Attribute	Class	Type	Value	Meaning	Comments	Access Rights - Base FW (M/R/F/P)	Access Rights - Secured FW (SG/SB/P)
	Reference Voltage for power quality measurement	**3**		**1.0.0.6.4.255**				
1	logical_name		octet-string[6]	0100000604FF			R-/R-/--/--	R-/--/--
2	value		long-unsigned	230	Reference Voltage for power quality measurement (undervoltage and overvoltage) and for long power fail Valid values: - [0, 400] expressed in Volts; - "230" as default value.		RW/R-/--/--	RW/--/--
3	scaler_unit		scal_unit_type	{0,35}	scaler=0, unit=volts		R-/R-/--/--	R-/--/--
	Time Threshold for undervoltage	**3**		**1.0.12.43.0.255**				
1	logical_name		octet-string[6]	01000C2B00FF			R-/R-/--/--	R-/--/--
2	value		long-unsigned	600	Time threshold for the detection of undervoltages Valid values: - [60, 3600] and must be a divisor of 3600, expressed in seconds; - "600" as default value.		RW/R-/--/--	RW/--/--
3	scaler_unit		scal_unit_type	{0,7}	scaler=0, unit=seconds		R-/R-/--/--	R-/--/--
	Threshold for undervoltage	**3**		**1.0.12.31.0.255**				
1	logical_name		octet-string[6]	01000C1F00FF			R-/R-/--/--	R-/--/--
2	value		long-unsigned	1000	Valid values: - [0, 10000] expressed in % with scaler = -2; - "1000" (10,00 % of decrement over Vref) as default value.		RW/R-/--/--	RW/--/--
3	scaler_unit		scal_unit_type	{-2,56}	scaler=-2, unit=%	unit = nominal voltage percent	R-/R-/--/--	R-/--/--

#	Object/Attribute	Class	Type	Value	Meaning	Comments	Access Rights - Base FW (M/R/F/P)	Access Rights - Secured FW (SG/SB/P)
	Number of undervoltages in any phase	**1**		**1.0.12.32.0.255**		Single phase and polyphase meters		
1	logical_name		octet-string[6]	01000C2000FF			R-/R-/--/--	R-/--/--
2	value		long-unsigned		Number of undervoltages from the origin		R-/R-/--/--	R-/--/--
	Duration of undervoltage in any phase	**3**		**1.0.12.33.0.255**		Single phase and polyphase meters		
1	logical_name		octet-string[6]	01000C2100FF			R-/R-/--/--	R-/--/--
2	value		double-long-unsigned		Duration of undervoltages in any phase from the origin		R-/R-/--/--	R-/--/--
3	scaler_unit		scal_unit_type	{0,7}	scaler=0, unit=seconds		R-/R-/--/--	R-/--/--
	Number of undervoltages in phase L1	**1**		**1.0.32.32.0.255**		Only polyphase meters		
1	logical_name		octet-string[6]	0100202000FF			R-/R-/--/--	R-/--/--
2	value		long-unsigned		Number of undervoltages in phase L1 from the origin		R-/R-/--/--	R-/--/--
	Duration of undervoltages in phase L1	**3**		**1.0.32.33.0.255**		Only polyphase meters		
1	logical_name		octet-string[6]	0100202100FF			R-/R-/--/--	R-/--/--
2	value		Double-long-unsigned		Duration of undervoltages in phase L1 from the origin		R-/R-/--/--	R-/--/--
3	scaler_unit		scal_unit_type	{0,7}	scaler=0, unit=seconds		R-/R-/--/--	R-/--/--
	Number of undervoltages in phase L2	**1**		**1.0.52.32.0.255**		Only polyphase meters		
1	logical_name		octet-string[6]	0100342000FF			R-/R-/--/--	R-/--/--
2	value		long-unsigned		Number of undervoltages in phase L2 from the origin		R-/R-/--/--	R-/--/--
	Duration of undervoltages in phase L2	**3**		**1.0.52.33.0.255**		Only polyphase meters		
1	logical_name		octet-string[6]	0100342100FF			R-/R-/--/--	R-/--/--
2	value		Double-long-unsigned		Duration of undervoltages in phase L2 from the origin		R-/R-/--/--	R-/--/--
3	scaler_unit		scal_unit_type	{0,7}	scaler=0, unit=seconds		R-/R-/--/--	R-/--/--

#	Object/Attribute	Class	Type	Value	Meaning	Comments	Access Rights - Base FW (M/R/F/P)	Access Rights - Secured FW (SG/SB/P)
	Number of undervoltages in phase L3	**1**		**1.0.72.32.0.255**		Only polyphase meters		
1	logical_name		octet-string[6]	0100482000FF			R-/R-/--/--	R-/--/--
2	value		long-unsigned		Number of undervoltages in phase L3 from the origin		R-/R-/--/--	R-/--/--
	Duration of undervoltages in phase L3	**3**		**1.0.72.33.0.255**		Only polyphase meters		
1	logical_name		octet-string[6]	0100482100FF			R-/R-/--/--	R-/--/--
2	value		Double-long-unsigned		Duration of undervoltages in phase L3 from the origin		R-/R-/--/--	R-/--/--
3	scaler_unit		scal_unit_type	{0,7}	scaler=0, unit=seconds		R-/R-/--/--	R-/--/--
	Number of undervoltages for average voltage in all 3 phases	**1**		**1.0.94.35.90.255**		Only polyphase meters		
1	logical_name		octet-string[6]	01005E235AFF			R-/R-/--/--	R-/--/--
2	Value		long-unsigned				R-/R-/--/--	R-/--/--
	Duration of undervoltages for average voltage in all 3 phases	**3**		**1.0.94.35.91.255**		Only polyphase meters		
1	logical_name		octet-string[6]	01005E235BFF			R-/R-/--/--	R-/--/--
2	value		double-long-unsigned				R-/R-/--/--	R-/--/--
3	scaler_unit		scal_unit_type	{0,7}	scaler=0, unit=seconds		R-/R-/--/--	R-/--/--
	Time Threshold for overvoltage	**3**		**1.0.12.44.0.255**				
1	logical_name		octet-string[6]	01000C2C00FF			R-/R-/--/--	R-/--/--
2	value		long-unsigned	600	Time threshold for the detection of overvoltages Valid values: - [60, 3600] and must be a divisor of 3600, expressed in seconds; - "600" as default value.		RW/R-/--/--	RW/--/--
3	scaler_unit		scal_unit_type	{0,7}	scaler=0, unit=seconds		R-/R-/--/--	R-/--/--
	Threshold for overvoltage	**3**		**1.0.12.35.0.255**				
1	logical_name		octet-string[6]	01000C2300FF			R-/R-/--/--	R-/--/--
2	value		long-unsigned	1000	Valid values:		RW/R-/--/--	RW/--/--

#	Object/Attribute	Class	Type	Value	Meaning	Comments	Access Rights - Base FW (M/R/F/P)	Access Rights - Secured FW (SG/SB/P)
					- [0, 10000] expressed in % with scaler = -2; - "1000" (10,00 % of increment over Vref) as default value.			
3	scaler_unit		scal_unit_type	{-2,56}	scaler=-2, unit=%	unit = nominal voltage percent	R-/R-/--/--	R-/--/--
	Number of overvoltages in any phase	**1**		**1.0.12.36.0.255**		Single phase and polyphase meters		
1	logical_name		octet-string[6]	01000C2400FF			R-/R-/--/--	R-/--/--
2	value		long-unsigned		Number of overvoltages from the origin		R-/R-/--/--	R-/--/--
	Duration of overvoltages in any phase	**3**		**1.0.12.37.0.255**		Single phase and polyphase meters		
1	logical_name		octet-string[6]	01000C2500FF			R-/R-/--/--	R-/--/--
2	value		Double-long-unsigned		Duration of overvoltages in any phase from the origin		R-/R-/--/--	R-/--/--
3	scaler_unit		scal_unit_type	{0,7}	scaler=0, unit=seconds		R-/R-/--/--	R-/--/--
	Number of overvoltages in phase L1	**1**		**1.0.32.36.0.255**		Only polyphase meters		
1	logical_name		octet-string[6]	0100202400FF			R-/R-/--/--	R-/--/--
2	value		long-unsigned		Number of overvoltages in phase L1 from the origin		R-/R-/--/--	R-/--/--
	Duration of overvoltages in phase L1	**3**		**1.0.32.37.0.255**		Only polyphase meters		
1	logical_name		octet-string[6]	0100202500FF			R-/R-/--/--	R-/--/--
2	value		Double-long-unsigned		Duration of overvoltages in phase L1 from the origin		R-/R-/--/--	R-/--/--
3	scaler_unit		scal_unit_type	{0,7}	scaler=0, unit=seconds			
	Number of overvoltages in phase L2	**1**		**1.0.52.36.0.255**		Only polyphase meters		
1	logical_name		octet-string[6]	0100342400FF			R-/R-/--/--	R-/--/--
2	value		long-unsigned		Number of overvoltages in phase L2 from the origin		R-/R-/--/--	R-/--/--
	Duration of overvoltages in phase L2	**3**		**1.0.52.37.0.255**		Only polyphase meters		
1	logical_name		octet-string[6]	0100342500FF			R-/R-/--/--	R-/--/--

#	Object/Attribute	Class	Type	Value	Meaning	Comments	Access Rights - Base FW (M/R/F/P)	Access Rights - Secured FW (SG/SB/P)
2	value		Double-long-unsigned		Duration of overvoltages in phase L2 from the origin		R-/R-/--/--	R-/--/--
3	scaler_unit		scal_unit_type	{0,7}	scaler=0, unit=seconds		R-/R-/--/--	R-/--/--
	Number of overvoltages in phase L3	**1**		**1.0.72.36.0.255**		Only polyphase meters		
1	logical_name		octet-string[6]	0100482400FF			R-/R-/--/--	R-/--/--
2	value		long-unsigned		Number of overvoltages in phase L3 from the origin		R-/R-/--/--	R-/--/--
	Duration of overvoltages in phase L3	**3**		**1.0.72.37.0.255**		Only polyphase meters		
1	logical_name		octet-string[6]	0100482500FF			R-/R-/--/--	R-/--/--
2	value		Double-long-unsigned		Duration of overvoltages in phase L3 from the origin		R-/R-/--/--	R-/--/--
3	scaler_unit		scal_unit_type	{0,7}	scaler=0, unit=seconds		R-/R-/--/--	R-/--/--
	Number of overvoltages for average voltage in all 3 phases	**1**		**1.0.94.35.92.255**		Only polyphase meters		
1	logical_name		octet-string[6]	01005E235CFF			R-/R-/--/--	R-/--/--
2	Value		long-unsigned		Number of overvoltages in all phases from the origin		R-/R-/--/--	R-/--/--
	Duration of overvoltages for average voltage in all 3 phases	**3**		**1.0.94.35.93.255**		Only polyphase meters		
1	logical_name		octet-string[6]	01005E235DFF			R-/R-/--/--	R-/--/--
2	value		Double-long-unsigned		Duration of overvoltages in all phases from the origin		R-/R-/--/--	R-/--/--
3	scaler_unit		scal_unit_type	{0,7}	scaler=0, unit=seconds		R-/R-/--/--	R-/--/--
	Threshold for neutral loss (Δ_{PN}) or overvoltage with consumption detection	**3**		**1.0.94.35.94.255**				
1	logical_name		octet-string[6]	01005E235EFF			R-/R-/--/--	R-/--/--
2	value		long-unsigned	4000	Valid values: - [0, 10000] expressed in % with scaler = -2; - "4000" (40,00 % of increment over Vref) as default value.		RW/R-/--/--	RW/--/--

#	Object/Attribute	Class	Type	Value	Meaning	Comments	Access Rights - Base FW (M/R/F/P)	Access Rights - Secured FW (SG/SB/P)
3	scaler_unit		scal_unit_type	{-2,56}	scaler=-2, unit=%	unit = nominal voltage percent	R-/R-/--/--	R-/--/--
	Threshold for neutral recovery (Δ_{RN}) or overvoltage with production detection (Δ_{EP})	**3**		**1.0.94.35.95.255**				
1	logical_name		octet-string[6]	01005E235FFF			R-/R-/--/--	R-/--/--
2	Value		long-unsigned	2000	Valid values: - [0, 10000] expressed in % with scaler = -2; - "2000" (20,00 % of increment over Vref) as default value.		RW/R-/--/--	RW/--/--
3	scaler_unit		scal_unit_type	{-2,56}	scaler=-2, unit=%	unit = nominal voltage percent	R-/R-/--/--	R-/--/--
	Time Threshold for neutral loss (T_{PN}) / overvoltage detection (T_{MS})	**3**		**1.0.94.35.96.255**				
1	logical_name		octet-string[6]	01005E2360FF			R-/R-/--/--	R-/--/--
2	Value		long-unsigned	60	Time threshold for the detection of neutral loss or overvoltage Valid values: - [1, 3600] expressed in seconds; - "60" as default value.		RW/R-/--/--	RW/--/--
3	scaler_unit		scal_unit_type	{0,7}	scaler=0, unit=seconds	unit = nominal voltage percent	R-/R-/--/--	R-/--/--
	Time Threshold for neutral recovery (T_{RN})	**3**		**1.0.94.35.97.255**				
1	logical_name		octet-string[6]	01005E2361FF			R-/R-/--/--	R-/--/--
2	value		long-unsigned	60	Time threshold for the neutral recovery Valid values: - [1, 36000] expressed in seconds; - "60" as default value.		RW/R-/--/--	RW/--/--

#	Object/Attribute	Class	Type	Value	Meaning	Comments	Access Rights - Base FW (M/R/F/P)	Access Rights - Secured FW (SG/SB/P)
3	scaler_unit		scal_unit_type	{0,7}	scaler=0, unit=seconds	unit = nominal voltage percent	R-/R-/--/--	R-/--/--
	Time Threshold for monitoring of overvoltage recovery (T_{MRS})	**3**		**1.0.94.35.98.255**				
1	logical_name		octet-string[6]	01005E2362FF			R-/R-/--/--	R-/--/--
2	value		long-unsigned	600	Time threshold for overvoltage recovery monitoring Valid values: - [1, 36000] expressed in seconds; - "600" as default value.		RW/R-/--/--	RW/--/--
3	scaler_unit		scal_unit_type	{0,7}	scaler=0, unit=seconds	unit = nominal voltage percent	R-/R-/--/--	R-/--/--
	Time Threshold for timed manual connection (T_{RMT})	**3**		**1.0.94.35.99.255**				
1	logical_name		octet-string[6]	01005E2363FF			R-/R-/--/--	R-/--/--
2	value		long-unsigned	0	Time threshold for timed manual connection after overvoltage recovery Valid values: - [0, 54000] expressed in seconds; - "0" must deactivate the timed manual connection.		RW/R-/--/--	RW/--/--
3	scaler_unit		scal_unit_type	{0,7}	scaler=0, unit=seconds	unit = nominal voltage percent	R-/R-/--/--	R-/--/--
	Overvoltage monitoring mode	**1**		**1.0.94.35.100.255**				
1	logical_name		octet-string[6]	01005E2364FF			R-/R-/--/--	R-/--/--
2	value		Enum	(0) by default	Defines the overvoltage monitoring mode: (0): disabled; (1): enabled without ICP triggering (only event and alarm generation); (2): enabled.		RW/R-/--/--	RW/--/--

5.6.6 Outros objetos relacionados com Eletricidade

#	Object/Attribute	Class	Type	Value	Meaning	Comments	Access Rights - Base FW (M/R/F/P)	Access Rights - Secured FW (SG/SB/P)
	Active Quadrant	**1**		**1.1.94.35.100.255**				
1	logical_name		octet-string[6]	01015E2364FF			R-/R-/--/--	R-/--/--
2	value		unsigned[8]	0,1,2,3,4	0= creep or no Quadrant detected 1,2,3,4 =Active Quadrant (QI,QII,QIII,QIV)	Active power quadrant indicator. Read-only	R-/R-/--/--	R-/--/--
	Active Quadrant L1	**1**		**1.1.94.35.101.255**		Only polyphase meter		
1	logical_name		octet-string[6]	01015E2365FF			R-/R-/--/--	R-/--/--
2	value		unsigned[8]	0,1,2,3,4	0= creep or no Quadrant detected 1,2,3,4 =Active Quadrant (QI,QII,QIII,QIV)	Active power L1 quadrant indicator. Read-only	R-/R-/--/--	R-/--/--
	Active Quadrant L2	**1**		**1.1.94.35.102.255**		Only polyphase meter		
1	logical_name		octet-string[6]	01015E2366FF			R-/R-/--/--	R-/--/--
2	value		unsigned[8]	0,1,2,3,4	0= creep or no Quadrant detected 1,2,3,4 =Active Quadrant (QI,QII,QIII,QIV)	Active power L2 quadrant indicator. Read-only	R-/R-/--/--	R-/--/--
	Active Quadrant L3	**1**		**1.1.94.35.103.255**		Only polyphase meter		
1	logical_name		octet-string[6]	01015E2367FF			R-/R-/--/--	R-/--/--
2	value		unsigned[8]	0,1,2,3,4	0= creep or no Quadrant detected 1,2,3,4 =Active Quadrant (QI,QII,QIII,QIV)	Active power L3 quadrant indicator. Read-only	R-/R-/--/--	R-/--/--
	Phase presence	**1**		**1.1.94.35.104.255**				
1	logical_name		octet-string[6]	01015E2368FF			R-/R-/--/--	R-/--/--
2	value		unsigned[8]	bit mask: B0,B1,B2	B0: phase 1; B1:phase 2; B2:phase 3	Phase presence indicator. Read-only	R-/R-/--/--	R-/--/--

ANEXO A ESPECIFICAÇÃO DO MECANISMO DE TRANSFERÊNCIA DE IMAGENS

O documento **COSEM Identification System and Interface Classes (Blue Book, 13ª edição)** especifica o mecanismo para transferência de ficheiros binários para o equipamento de contagem, utilizando a especificação DLMS/COSEM para transferência de dados. Estes ficheiros binários contêm uma imagem do *firmware* (ou de uma componente de *firmware*) do equipamento.

Caso exista uma separação efetiva do *firmware* metrológico (*core*) do restante, devem ser considerados os seguintes nomes lógicos para os objetos que identificam as diferentes componentes de *firmware* (*version* e *version signature,* respetivamente):

- "**1.0.0.2.0.255**" e "**1.0.0.2.8.255**", para a componente de *firmware* metrologicamente relevante (*core firmware*);

- "**1.1.0.2.0.255**" e "**1.1.0.2.8.255**", para a componente de *firmware* aplicacional (metrologicamente não relevante);

- "**1.2.0.2.0.255**" e "**1.2.0.2.8.255**", para a componente de *firmware* de comunicações (metrologicamente não relevante).

Caso não exista separação efetiva do *firmware* metrológico (*core*) do restante, todo o *firmware* deve ser considerado como metrologicamente relevante. Não obstante, deve ser mantido o registo do *firmware* aplicacional através dos objetos referidos anteriormente ("**1.1.0.2.0.255**" e "**1.1.0.2.8.255**"). Neste cenário devem ser utilizados os mesmos valores para a identificação do *firmware* metrológico e aplicacional (*version* e *version signature,* respetivamente).

Para mais detalhes, consultar o capítulo "Image Transfer (Class_id: 18, version: 0)" do Blue Book [3].

ANEXO B MATRIZ DE APLICABILIDADE DO MODELO DE DADOS

Secção	Objeto	*Logical name*	EMI		EMI IP	
			Mono	Tri	Mono	Tri
Objetos dos Perfis de Comunicação e Interfaces						
Interface ótica	IEC HDLC setup - Optical port	0.0.22.0.0.255	✓	✓	✓	✓
Interface PLC PRIME	61334-4-32 LLC SSCS setup	0.0.28.0.0.255	✓	✓		
	PRIME NB OFDM PLC Physical layer counters	0.0.28.1.0.255	✓	✓		
	PRIME NB OFDM PLC MAC setupPRIME PLC MAC setup	0.0.28.2.0.255	✓	✓		
	PRIME NB OFDM PLC MAC functional parameters	0.0.28.3.0.255	✓	✓		
	PRIME NB OFDM PLC MAC counters	0.0.28.4.0.255	✓	✓		
	PRIME NB OFDM PLC MAC network administration data	0.0.28.5.0.255	✓	✓		
	PRIME NB OFDM PLC MAC address setup	0.0.28.6.0.255	✓	✓		
	PRIME NB OFDM PLC Application identification	0.0.28.7.0.255	✓	✓		
Interface série RS485	IEC HDLC setup - Serial port	0.1.22.0.0.255	✓	✓	✓	✓
Objetos Abstratos						
Atribuição SAP, Associações LN, *Security Setup*, *Frame counter*, Nome do Dispositivo Lógico (COSEM)	SAP Assignment	0.0.41.0.0.255	✓	✓	✓	✓
	Association LN - Current Association	0.0.40.0.0.255	✓	✓	✓	✓
	Association LN - Public Client Association	0.0.40.0.1.255	✓	✓	✓	✓
	Association LN - Reading Client Association	0.0.40.0.2.255	✓	✓	✓	✓
	Association LN - Management Client Association	0.0.40.0.3.255	✓	✓	✓	✓
	Association LN - Firmware Client Association	0.0.40.0.4.255	✓	✓	✓	✓
	Association LN - Secure General Client Association	0.0.40.0.5.255	✓[2]	✓[2]		
	Association LN - Secure Broadcast PLC Client Association	0.0.40.0.6.255	✓[2]	✓[2]		
	Security Setup - Secure General Client	0.0.43.0.5.255	✓[2]	✓[2]		
	Security Setup - Secure Broadcast PLC Client	0.0.43.0.6.255	✓[2]	✓[2]		
	Frame Counter - GUEK Frame Count Secure General Client	0.0.43.1.5.255	✓[2]	✓[2]		
	Frame Counter - GUEK Frame Counter Secure Broadcast PLC Client	0.0.43.1.6.255	✓[2]	✓[2]		
	COSEM logical device name	0.0.42.0.0.255	✓	✓	✓	✓
Registos de Identificação	Device ID 1	0.0.96.1.0.255	✓	✓	✓	✓
	Device ID 2	0.0.96.1.1.255	✓	✓	✓	✓
	Device ID 3	0.0.96.1.2.255	✓	✓	✓	✓
	Device ID 4	0.0.96.1.3.255	✓	✓	✓	✓
	Device ID 5	0.0.96.1.4.255	✓	✓	✓	✓
	Device ID 6	0.0.96.1.5.255	✓	✓	✓	✓
	Device ID 7	0.0.96.1.6.255	✓	✓	✓	✓
	Device ID 8	0.0.96.1.7.255	✓	✓		
	Device ID 9	0.0.96.1.8.255	✓	✓	✓	✓
	Device ID 10	0.0.96.1.9.255	✓	✓	✓	✓
Relógio	Clock	0.0.1.0.0.255	✓	✓	✓	✓
	Local Time	1.0.0.9.1.255	✓	✓	✓	✓
	Local Date	1.0.0.9.2.255	✓	✓	✓	✓
	Clock Synchronization	0.0.96.2.12.255	✓	✓	✓	✓
	Clock Time Shift Event Limit	1.0.0.9.11.255	✓	✓	✓	✓
	Clock Time Shift Invalid Limit	1.1.94.35.1.255	✓	✓	✓	✓
Ciclos horários e dias especiais	Activity Calendar	0.0.13.0.x.255	✓	✓	✓	✓
	Special Days Table	0.0.11.0.x.255	✓	✓	✓	✓

Secção	Objeto	*Logical name*	EMI		EMI IP	
			Mono	Tri	Mono	Tri
	Passive Special Days Table	0.0.11.0.x.255	✓	✓	✓	✓
	Active Demand Control Threshold	0.1.94.35.x.255	✓	✓		
	Passive Demand Control Threshold	0.1.94.35.x.255	✓	✓		
	Currently active tariff	0.0.96.14.x.255	✓	✓	✓	✓
Fechos mensais e diários – períodos e perfis	Predefined Scripts - MDI reset / end of billing period	0.0.10.0.1.255	✓	✓	✓	✓
	Active end of billing period 1	0.0.15.1.x.255	✓	✓	✓	✓
	Passive end of billing period 1	0.0.94.35.x.255	✓	✓	✓	✓
	Data of billing period 1 Stored Billing Values Profile	0.0.98.1.c.255	✓	✓	✓	✓
	Time stamp of billing period 1 last reset	0.0.94.35.x.255	✓	✓	✓	✓
	End of billing period 2	0.0.15.2.x.255	✓	✓	✓	✓
	Data of billing period 2 Stored Billing Values Profile	0.0.98.2.c.255	✓	✓	✓	✓
Interrupções de longa duração (duração, limites)	Time threshold for long power failure	0.0.96.7.20.255	✓	✓	✓	✓
	Threshold for long power failure	0.0.94.35.60.255	✓	✓	✓	✓
	Duration of long power failures in all phases	0.0.96.7.15.255		✓		✓
	Duration of long power failures in phase L1	0.0.96.7.16.255		✓		✓
	Duration of long power failures in phase L2	0.0.96.7.17.255		✓		✓
	Duration of long power failures in phase L3	0.0.96.7.18.255		✓		✓
	Duration of long power failures in any phase	0.0.96.7.19.255	✓	✓	✓	✓
	Number of long power failures in all phases	0.0.96.7.5.255		✓		✓
	Number of long power failures in phase L1	0.0.96.7.6.255		✓		✓
	Number of long power failures in phase L2	0.0.96.7.7.255		✓		✓
	Number of long power failures in phase L3	0.0.96.7.8.255		✓		✓
	Number of long power failures in any phase	0.0.96.7.9.255	✓	✓	✓	✓
Tratamento de Erros e Alarmes (registo de Erros, registo de Alarmes)	Error Object	0.0.97.97.0.255	✓	✓	✓	✓
	Alarm Object	0.0.97.98.0.255	✓	✓	✓	✓
	Alarm Filter	0.0.97.98.10.255	✓	✓	✓	✓
Tratamento de Erros e Alarmes (registo de Erros, registo de Alarmes)	Event Object - "Standard" Event Log	0.0.96.11.0.255	✓	✓	✓	✓
	"Standard" Event Log	0.0.99.98.0.255	✓	✓	✓	✓
	Event Object - "Anti-fraude" Event Log	0.0.96.11.1.255	✓	✓	✓	✓
	"Antifraude" Event Log	0.0.99.98.1.255	✓	✓	✓	✓
	Event Object - "Falha de Energia" Event Log	0.0.96.11.5.255	✓	✓	✓	✓
	"Falha de Energia" Event Log	0.0.99.98.5.255	✓	✓	✓	✓
	QoS event start - Timestamp (undervoltage, overvoltage and long power failure)	0.0.94.35.80.255	✓	✓	✓	✓
	Event Object – "Qualidade de Serviço" Log	0.0.96.11.9.255	✓	✓	✓	✓
	"Qualidade de Serviço" Event Log	0.0.99.98.9.255	✓	✓	✓	✓
	Event Object - "Alta Ocorrência" Event Log	0.0.96.11.7.255	✓	✓	✓	✓
	"Alta Ocorrência" Event Log	0.0.99.98.7.255	✓	✓	✓	✓
	Event Object – "Potência contratada" Log	0.0.96.11.3.255	✓	✓		
	"Potência contratada" Event Log	0.0.99.98.3.255	✓	✓		
	Event Object – "Firmware" Event Log	0.0.96.11.4.255	✓	✓	✓	✓

Secção	Objeto	*Logical name*	EMI		EMI IP	
			Mono	Tri	Mono	Tri
	Firmware Event Log	0.0.99.98.4.255	✓	✓	✓	✓
	Event Object – "Sincronização" Event Log	0.0.96.11.8.255	✓	✓	✓	✓
	"Sincronização" Event Log	0.0.99.98.8.255	✓	✓	✓	✓
	Event Object - "Configuração Log	0.0.96.11.10.255	✓	✓	✓	✓
	"Configuração" Event Log	0.0.99.98.10.255	✓	✓	✓	✓
	Event Object - "Gestão da Procura" Log	0.0.96.11.06.255	✓	✓		
	"Gestão da Procura" Event Log	0.0.99.98.06.255	✓	✓		
	Event Object - "Iluminação Pública" Log	0.0.96.11.11.255			✓	✓
	"Iluminação Pública" Event Log	0.0.99.98.11.255			✓	✓
	Event Object - "Correct Security Operations" Log	0.0.96.11.12.255	✓[2]	✓[2]		
	"Correct Security Operations" Event Log	0.0.99.98.12.255	✓[2]	✓[2]		
	Event Object - "Failed Security Operations" Log	0.0.96.11.13.255	✓[2]	✓[2]		
	"Failed Security Operations" Event Log	0.0.99.98.13.255	✓[2]	✓[2]		
	Standard Event Log Filter	0.1.94.35.105.255	✓	✓	✓	✓
	"Antifraude" Event Log Log Filter	0.1.94.35.106.255	✓	✓	✓	✓
	"Qualidade de serviço" Event Log Filter	0.1.94.35.107.255	✓	✓	✓	✓
	"Falha de Energia" Event Log Filter	0.1.94.35.108.255	✓	✓	✓	✓
	"Configuração" Event Log Filter	0.1.94.35.115.255	✓	✓	✓	✓
	"Gestão da Procura" Event Log Filter	0.1.94.35.109.255	✓	✓		
	"Alta Ocorrência" Event Log Filter	0.1.94.35.110.255	✓	✓	✓	✓
	"Potência contratada" Event Log Filter	0.1.94.35.111.255	✓	✓		
	Firmware Event Log Filter	0.1.94.35.112.255	✓	✓	✓	✓
	"Sincronização" Event Log Filter	0.1.94.35.113.255	✓	✓	✓	✓
	"ICP" log Filter	0.1.94.35.114.255	✓	✓		
	"Iluminação Pública" Event Log Filter	0.1.94.35.116.255			✓	✓
	"Correct Security Operations" Event Log Filter	0.1.94.35.117.255	✓[2]	✓[2]		
	"Failed Security Operation" Event Log Filter	0.1.94.35.118.255	✓[2]	✓[2]		
Controlo de Potência e respetivos registos	Disconnect control Scheduler	0.0.15.0.1.255	✓	✓		
	Disconnect Script Table	0.0.10.0.106.255	✓	✓		
	Disconnect Control	0.0.96.3.10.255	✓	✓		
	Previous Disconnect Control	0.1.94.35.20.255	✓	✓		
	Event Object - "ICP" log	0.0.96.11.2.255	✓	✓		
	"ICP" log	0.0.99.98.2.255	✓	✓		
	Aparent Power over threshold status	0.1.94.35.30.255	✓	✓		
	Currently Aparent Power Threshold	0.1.94.35.31.255	✓	✓		
	Maximum Apparent Power per phase (S_{PMF})	0.1.94.35.32.255		✓		
	parameter Q - ICP	0.0.128.30.1.255	✓	✓		
	parameter k - ICP	0.0.128.30.2.255	✓	✓		
	parameter Ic - ICP	0.0.128.30.3.255	✓	✓		
	ICP power control Inhibition	0.1.94.35.21.255	✓	✓		
	ICP export power control Activation	0.1.94.35.22.255	✓	✓		
Atualização de *Firmware*	Image Transfer	0.0.44.0.0.255	✓	✓	✓	✓
	Image Activation Scheduler	0.0.15.0.2.255	✓	✓	✓	✓
	Predefined Scripts – Image Activation	0.0.10.0.107.255	✓	✓	✓	✓
Objetos do Visor	General Display Readout (Auto scroll sequence)	0.0.21.0.1.255	✓	✓	✓	✓
	Alternative Display Readout (Manual scroll sequence)	0.0.21.0.2.255	✓	✓	✓	✓
	Time for Scroll Display	0.0.94.35.110.255	✓	✓	✓	✓
	Timeout for return to auto scroll mode	0.0.94.35.111.255	✓	✓	✓	✓
Gestão da Procura	Demand Management Period Definition Object	0.1.94.35.60.255	✓	✓		
	Residual Power Threshold Object	0.1.94.35.61.255	✓	✓		

Secção	Objeto	*Logical name*	EMI		EMI IP	
			Mono	Tri	Mono	Tri
	Duration of Critical Demand Management Periods Object	0.1.94.35.62.255	✓	✓		
	Duration of Non-Critical Demand Management Periods Object	0.1.94.35.63.255	✓	✓		
	Demand Management Status	0.1.94.35.64.255	✓	✓		
Iluminação Pública (IP)	Output Relay Control 1	0.1.96.3.10.255			✓	✓
	Output Relay Control 2	0.2.96.3.10.255				✓
	IP control - Output relay 1 operating mode configuration	0.1.94.35.40.255			✓	✓
	IP control - Output relay 2 operating mode configuration	0.1.94.35.140.255				✓
	IP control - Time switching table for output relay 1	0.1.94.35.41.255			✓	✓
	IP control - Time switching table for output relay 2	0.1.94.35.141.255				✓
	IP control - Astronomical clock information	0.1.94.35.42.255			✓	✓
	Public lighting circuit fault status	0.1.94.35.43.255			✓	✓
	Power threshold for over consumption verification - IP circuit disconnected state	0.1.94.35.44.255			✓	✓
	Overall minimum power threshold for IP circuit	0.1.94.35.45.255			✓	✓
	Overall maximum power threshold for IP circuit	0.1.94.35.46.255			✓	✓
	IP control status - Output relay 1 last transition	0.1.94.35.47.255			✓	✓
	IP control status - Output relay 2 last transition	0.1.94.35.147.255				✓
	IP control - Output relay 1 time offsets table	0.1.94.35.48.255			✓	✓
	IP control - Output relay 2 time offsets table	0.1.94.35.148.255				✓
	IP control - general information status for output relay 1	0.1.94.35.49.255			✓	✓
	IP control - general information status for output relay 2	0.1.94.35.149.255				✓
	IP control status - Output relay 1 last transition's trigger	0.1.94.35.50.255			✓	✓
	IP control status - Output relay 2 last transition's trigger	0.1.94.35.150.255				✓
Outros objetos abstratos	Metering point ID	0.0.96.1.10.255	✓	✓	✓	✓
	Secure Broadcast PLC Client GUEK ID	0.1.94.35.70.255	✓[2]	✓[2]		
	Secure Broadcast PLC Client GAK ID	0.1.94.35.71.255	✓[2]	✓[2]		
	Secure Broadcast PLC Client GBEK ID	0.1.94.35.72.255	✓[2]	✓[2]		
	FW Update Public Key ID	0.1.94.35.73.255	✓[2]	✓[2]		
	FW Update Public Key	0.1.94.35.74.255	✓[2]	✓[2]		
	Active core firmware identifier	1.0.0.2.0.255	✓	✓	✓	✓
	Active core firmware signature identifier	1.0.0.2.8.255	✓	✓	✓	✓
	Active application firmware identifier	1.1.0.2.0.255	✓	✓	✓	✓
	Active application firmware signature identifier	1.1.0.2.8.255	✓	✓	✓	✓
	Communication module active firmware identifier	1.2.0.2.0.255	✓	✓		
	Communication module active firmware signature identifier	1.2.0.2.8.255	✓	✓		
	Timeout open session for Reading client through PLC channel	0.0.94.35.51.255	✓[1]	✓[1]		
	Timeout open session for Management client through PLC channel	0.0.94.35.52.255	✓[1]	✓[1]		

Secção	Objeto	*Logical name*	EMI		EMI IP	
			Mono	Tri	Mono	Tri
	Timeout open session for Firmware update client through PLC channel	0.0.94.35.53.255	✓1	✓1		
	Timeout open session for Secure General client through Secure channel	0.0.94.35.54.255	✓2	✓2		
	Timeout open session for Secure General client through Secure channel for current association	0.0.94.35.55.255	✓2	✓2		
	Timeout open session for Secure Broadcast PLC client through PLC channel	0.0.94.35.56.255	✓2	✓2		
	Timeout open session for Secure Broadcast PLC client through PLC channel for current association	0.0.94.35.57.255	✓2	✓2		
	Global Meter Reset	0.0.10.0.0.255	✓	✓	✓	✓
	Time stamp for new calendar activation	1.0.94.35.130.255	✓	✓	✓	✓
	GPS Coordinates	0.65.0.30.4.255	✓	✓	✓	✓
	HAN interface – Modbus address	0.65.0.30.5.255	✓	✓		
	HAN interface – communication speed	0.65.0.30.6.255	✓	✓		
	HAN interface – access profile	0.65.0.30.7.255	✓	✓		
	Utility Defined register 4	0.65.0.30.8.255	✓	✓	✓	✓
	Utility Defined register 5	0.65.0.30.9.255	✓	✓	✓	✓
	Remote communicartion operation mode	0.65.0.30.10.255	✓	✓		
	Utility Defined register 7	0.65.0.30.11.255	✓	✓	✓	✓
	Utility Defined register 8	0.65.0.30.12.255	✓	✓	✓	✓
	Utility Defined register 9	0.65.0.30.13.255	✓	✓	✓	✓
	Battery voltage	0.0.96.6.3.255	✓	✓		
	DLMS association's counter - established through PLC PRIME interface	0.0.94.35.70.255	✓	✓		
	DLMS association's counter - established through RS485 interface	0.0.94.35.71.255	✓	✓		
	HAN request's counter	0.0.94.35.72.255	✓	✓		
Objetos relacionados com Eletricidade						
Registos de Energia	Active energy import (+A)	1.0.1.8.x.255	✓	✓	✓	✓
	Active energy export (−A)	1.0.2.8.x.255	✓	✓	✓	✓
	Reactive energy QI (+Ri)	1.0.5.8.x.255	✓	✓	✓	✓
	Reactive energy QII (+Rc)	1.0.6.8.x.255	✓	✓	✓	✓
	Reactive energy QIII (-Ri)	1.0.7.8.x.255	✓	✓	✓	✓
	Reactive energy QIV (-Rc)	1.0.8.8.x.255	✓	✓	✓	✓
	Active energy import (+A) L1	1.0.21.8.0.255		✓		✓
	Active energy import (+A) L2	1.0.41.8.0.255		✓		✓
	Active energy import (+A) L3	1.0.61.8.0.255		✓		✓
	Active energy export (−A) L1	1.0.22.8.0.255		✓		✓
	Active energy export (−A) L2	1.0.42.8.0.255		✓		✓
	Active energy export (−A) L3	1.0.62.8.0.255		✓		✓
	Reactive energy QI (+Ri) L1	1.0.25.8.0.255		✓		
	Reactive energy QI (+Ri) L2	1.0.45.8.0.255		✓		
	Reactive energy QI (+Ri) L3	1.0.65.8.0.255		✓		
	Reactive energy QII (+Rc) L1	1.0.26.8.0.255		✓		
	Reactive energy QII (+Rc) L2	1.0.46.8.0.255		✓		
	Reactive energy QII (+Rc) L3	1.0.66.8.0.255		✓		
	Reactive energy QIII (-Ri) L1	1.0.27.8.0.255		✓		
	Reactive energy QIII (-Ri) L2	1.0.47.8.0.255		✓		
	Reactive energy QIII (-Ri) L3	1.0.67.8.0.255		✓		
	Reactive energy QIV (-Rc) L1	1.0.28.8.0.255		✓		
	Reactive energy QIV (-Rc) L2	1.0.48.8.0.255		✓		
	Reactive energy QIV (-Rc) L3	1.0.68.8.0.255		✓		
	Active energy import (+A) incremental	1.0.1.29.0.255	✓	✓	✓	✓

Secção	Objeto	*Logical name*	EMI		EMI IP	
			Mono	Tri	Mono	Tri
	Active energy import (+A) incremental (short)	1.1.1.29.0.255	✓	✓		
	Active energy export (−A) incremental	1.0.2.29.0.255	✓	✓	✓	✓
	Active energy export (−A) incremental (short)	1.1.2.29.0.255	✓	✓		
	Reactive energy QI (+Ri) incremental	1.0.5.29.0.255	✓	✓	✓	✓
	Reactive energy QI (+Ri) incremental (short)	1.1.5.29.0.255	✓	✓		
	Reactive energy QII (+Rc) incremental	1.0.6.29.0.255	✓	✓	✓	✓
	Reactive energy QII (+Rc) incremental (short)	1.1.6.29.0.255	✓	✓		
	Reactive energy QIII (-Ri) incremental	1.0.7.29.0.255	✓	✓	✓	✓
	Reactive energy QIII (-Ri) incremental (short)	1.1.7.29.0.255	✓	✓		
	Reactive energy QIV (-Rc) incremental	1.0.8.29.0.255	✓	✓	✓	✓
	Reactive energy QIV (-Rc) incremental (short)	1.1.8.29.0.255	✓	✓		
	Active energy import (+A) L1 incremental (short)	1.1.21.29.0.255		✓		
	Active energy import (+A) L2 incremental (short)	1.1.41.29.0.255		✓		
	Active energy import (+A) L3 incremental (short)	1.1.61.29.0.255		✓		
	Active energy export (−A) L1 incremental (short)	1.1.22.29.0.255		✓		
	Active energy export (−A) L2 incremental (short)	1.1.42.29.0.255		✓		
	Active energy export (−A) L3 incremental (short)	1.1.62.29.0.255		✓		
	Reactive energy QI (+Ri) L1 incremental (short)	1.1.25.29.0.255		✓		
	Reactive energy QI (+Ri) L2 incremental (short)	1.1.45.29.0.255		✓		
	Reactive energy QI (+Ri) L3 incremental (short)	1.1.65.29.0.255		✓		
	Reactive energy QII (+Rc) L1 incremental (short)	1.1.26.29.0.255		✓		
	Reactive energy QII (+Rc) L2 incremental (short)	1.1.46.29.0.255		✓		
	Reactive energy QII (+Rc) L3 incremental (short)	1.1.66.29.0.255		✓		
	Reactive energy QIII (-Ri) L1 incremental (short)	1.1.27.29.0.255		✓		
	Reactive energy QIII (-Ri) L2 incremental (short)	1.1.47.29.0.255		✓		
	Reactive energy QIII (-Ri) L3 incremental (short)	1.1.67.29.0.255		✓		
	Reactive energy QIV (-Rc) L1 incremental (short)	1.1.28.29.0.255		✓		
	Reactive energy QIV (-Rc) L2 incremental (short)	1.1.48.29.0.255		✓		
	Reactive energy QIV (-Rc) L3 incremental (short)	1.1.68.29.0.255		✓		
	Instantaneous Energy Values	0.0.21.0.6.255	✓	✓	✓	✓
Registos de Potência	Demand Register Active power+ (QI+QIV)	1.0.1.4.0.255	✓	✓	✓	✓
	Demand Register Active power− (QII+QIII)	1.0.2.4.0.255	✓	✓	✓	✓
	Demand Register Reactive power+ (QI+QII)	1.0.3.4.0.255	✓	✓	✓	✓

Secção	Objeto	*Logical name*	EMI		EMI IP	
			Mono	Tri	Mono	Tri
	Demand Register Reactive power– (QIII+QIV)	1.0.4.4.0.255	✓	✓	✓	✓
	Demand Register Reactive power QI	1.0.5.4.0.255	✓	✓	✓	✓
	Demand Register Reactive power QII	1.0.6.4.0.255	✓	✓	✓	✓
	Demand Register Reactive power QIII	1.0.7.4.0.255	✓	✓	✓	✓
	Demand Register Reactive power QIV	1.0.8.4.0.255	✓	✓	✓	✓
	Demand Register Active power+ L1 (QI+QIV)	1.0.21.4.0.255		✓		✓
	Demand Register Active power+ L2 (QI+QIV)	1.0.41.4.0.255		✓		✓
	Demand Register Active power+ L3 (QI+QIV)	1.0.61.4.0.255		✓		✓
	Demand Register Active power– L1 (QII+QIII)	1.0.22.4.0.255		✓		✓
	Demand Register Active power– L2 (QII+QIII)	1.0.42.4.0.255		✓		✓
	Demand Register Active power– L3 (QII+QIII)	1.0.62.4.0.255		✓		✓
	Maximum Demand Register Active power+ (QI+QIV)	1.0.1.6.x.255	✓	✓	✓	✓
	Maximum Demand Register Active power– (QII+QIII)	1.0.2.6.x.255	✓	✓	✓	✓
	Maximum Demand Register Active power+ L1 (QI+QIV)	1.0.21.6.x.255		✓		
	Maximum Demand Register Active power+ L2 (QI+QIV)	1.0.41.6.x.255		✓		
	Maximum Demand Register Active power+ L3 (QI+QIV)	1.0.61.6.x.255		✓		
	Maximum Demand Register Active power– L1 (QII+QIII)	1.0.22.6.x.255		✓		
	Maximum Demand Register Active power– L2 (QII+QIII)	1.0.42.6.x.255		✓		
	Maximum Demand Register Active power– L3 (QII+QIII)	1.0.62.6.x.255		✓		
	Measurement Period - Demand Settings	1.0.0.8.0.255	✓	✓	✓	✓
Diagrama de Carga	AMR profile status for Load profile with period 1	0.0.96.10.7.255	✓	✓	✓	✓
	Load profile with period 1 - 15m Load Profile	1.0.99.1.0.255	✓	✓	✓	✓
	Last Average power factor (PF) register	1.0.13.5.0.255	✓	✓	✓	✓
	Last Average power factor (PF) register (short)	1.1.13.5.0.255	✓	✓		
	Last Average Voltage L1 register	1.0.32.5.0.255		✓		✓
	Last Average Voltage L1 register (short)	1.1.32.5.0.255		✓		
	Last Average Voltage L2 register	1.0.52.5.0.255		✓		✓
	Last Average Voltage L2 register (short)	1.1.52.5.0.255		✓		
	Last Average Voltage L3 register	1.0.72.5.0.255		✓		✓
	Last Average Voltage L3 register (short)	1.1.72.5.0.255		✓		
	Last Average any phase voltage register	1.0.12.5.0.255	✓	✓	✓	✓
	Last Average any phase voltage register (short)	1.1.12.5.0.255	✓	✓		
Valores Instantâneos	Instantaneous voltage L1	1.0.32.7.0.255	✓	✓	✓	✓
	Instantaneous current L1	1.0.31.7.0.255	✓	✓	✓	✓
	Instantaneous voltage L2	1.0.52.7.0.255		✓		✓
	Instantaneous current L2	1.0.51.7.0.255		✓		✓
	Instantaneous voltage L3	1.0.72.7.0.255		✓		✓
	Instantaneous current L3	1.0.71.7.0.255		✓		✓
	Instantaneous current (Sum over all phases)	1.0.90.7.0.255		✓		✓

Secção	Objeto	*Logical name*	EMI		EMI IP	
			Mono	Tri	Mono	Tri
	Instantaneous active power + (L1)	1.0.21.7.0.255		✓		✓
	Instantaneous active power - (L1)	1.0.22.7.0.255		✓		✓
	Instantaneous active power + (L2)	1.0.41.7.0.255		✓		✓
	Instantaneous active power - (L2)	1.0.42.7.0.255		✓		✓
	Instantaneous active power + (L3)	1.0.61.7.0.255		✓		✓
	Instantaneous active power - (L3)	1.0.62.7.0.255		✓		✓
	Instantaneous active power + (Sum of all phases)	1.0.1.7.0.255	✓	✓	✓	✓
	Instantaneous active power - (Sum of all phases)	1.0.2.7.0.255	✓	✓	✓	✓
	Instantaneous apparent power + (L1)	1.0.29.7.0.255		✓		
	Instantaneous apparent power - (L1)	1.0.30.7.0.255		✓		
	Instantaneous apparent power + (L2)	1.0.49.7.0.255		✓		
	Instantaneous apparent power - (L2)	1.0.50.7.0.255		✓		
	Instantaneous apparent power + (L3)	1.0.69.7.0.255		✓		
	Instantaneous apparent power - (L3)	1.0.70.7.0.255		✓		
	Instantaneous apparent power + (Sum of all phases)	1.0.9.7.0.255	✓	✓		
	Instantaneous apparent power - (Sum of all phases)	1.0.10.7.0.255	✓	✓		
	Instantaneous power factor (PF)	1.0.13.7.0.255	✓	✓	✓	✓
	Instantaneous power factor (PF) L1	1.0.33.7.0.255		✓		✓
	Instantaneous power factor (PF) L2	1.0.53.7.0.255		✓		✓
	Instantaneous power factor (PF) L3	1.0.73.7.0.255		✓		✓
	Frequency	1.0.14.7.0.255	✓	✓	✓	✓
	Instantaneous Values	0.0.21.0.5.255	✓	✓	✓	✓
Qualidade de Serviço (variações de tensão, perda de neutro e monitorização de sobretensões)	Reference Voltage for power quality measurement	1.0.0.6.4.255	✓	✓	✓	✓
	Time Threshold for undervoltages	1.0.12.43.0.255	✓	✓	✓	✓
	Threshold for undervoltages	1.0.12.31.0.255	✓	✓	✓	✓
	Number of undervoltages in any phase	1.0.12.32.0.255	✓	✓	✓	✓
	Duration of undervoltages in any phase	1.0.12.33.0.255	✓	✓	✓	✓
	Number of undervoltages in phase L1	1.0.32.32.0.255		✓		✓
	Duration of undervoltages in phase L1	1.0.32.33.0.255		✓		✓
	Number of undervoltages in phase L2	1.0.52.32.0.255		✓		✓
	Duration of undervoltages in phase L2	1.0.52.33.0.255		✓		✓
	Number of undervoltages in phase L3	1.0.72.32.0.255		✓		✓
	Duration of undervoltages in phase L3	1.0.72.33.0.255		✓		✓
	Number of undervoltages for average voltage in all 3 phases	1.0.94.35.90.255		✓		✓
	Duration of undervoltages for average voltage in all 3 phases	1.0.94.35.91.255		✓		✓
	Time Threshold for overvoltages	1.0.12.44.0.255	✓	✓	✓	✓
	Threshold for overvoltages	1.0.12.35.0.255	✓	✓	✓	✓
	Number of overvoltages in any phase	1.0.12.36.0.255	✓	✓	✓	✓
	Duration of overvoltagess in any phase	1.0.12.37.0.255	✓	✓	✓	✓
	Number of overvoltages in phase L1	1.0.32.36.0.255		✓		✓
	Duration of overvoltages in phase L1	1.0.32.37.0.255		✓		✓
	Number of overvoltages in phase L2	1.0.52.36.0.255		✓		✓
	Duration of overvoltages in phase L2	1.0.52.37.0.255		✓		✓
	Number of overvoltages in phase L3	1.0.72.36.0.255		✓		✓
	Duration of overvoltages in phase L3	1.0.72.37.0.255		✓		✓
	Number of overvoltages for average voltage in all 3 phases	1.0.94.35.92.255		✓		✓
	Duration of overvoltages for average voltage in all 3 phases	1.0.94.35.93.255		✓		✓
	Threshold for neutral loss (Δ_{PN}) or overvoltage with consumption detection	1.0.94.35.94.255	✓	✓		

Secção	Objeto	*Logical name*	EMI		EMI IP	
			Mono	Tri	Mono	Tri
	Threshold for neutral recovery (Δ_{RN}) or overvoltage with production detection (Δ_{EP})	1.0.94.35.95.255	✓	✓		
	Time Threshold for neutral loss (T_{PN}) / overvoltage detection (T_{MS})	1.0.94.35.96.255	✓	✓		
	Time Threshold for neutral recovery (T_{RN})	1.0.94.35.97.255	✓	✓		
	Time Threshold for monitoring of overvoltage recovery (T_{MRS})	1.0.94.35.98.255	✓	✓		
	Time Threshold for timed manual connection (T_{RMT})	1.0.94.35.99.255	✓	✓		
	Overvoltage monitoring mode	1.0.94.35.100.255	✓	✓		
Outros objetos relacionados com Eletricidade	Active Quadrant	1.1.94.35.100.255	✓	✓	✓	✓
	Active Quadrant L1	1.1.94.35.101.255		✓		✓
	Active Quadrant L2	1.1.94.35.102.255		✓		✓
	Active Quadrant L3	1.1.94.35.103.255		✓		✓
	Phase presence	1.1.94.35.104.255	✓	✓	✓	✓

1 - Apenas aplicável a equipamentos com a versão de FW base.
2 - Apenas aplicável a equipamentos com a versão de FW com extensão de cibersegurança.