DEIF

-power in control

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MULTI-LINE 2
DESCRIPTION OF OPTIONS
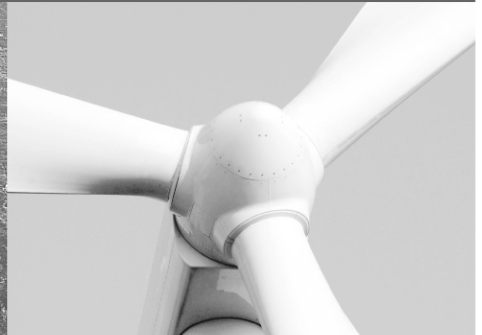
Option N
Ethernet/IP

This description of options covers the following products:

AGC-3	SW version 3.31.x or later
AGC-4	SW version 4.0x.x or later
PPM-3	SW version 3.0x.x or later
GPC-3/GPU-3/GPU-3 Hydro/PPU-3	SW version 3.0x.x or later

Table of contents

1. General information

Warnings, legal information and safety

Warnings and notes

Throughout this document, a number of warnings and notes with helpful user information will be presented. To ensure that these are noticed, they will be highlighted as follows in order to separate them from the general text.

Warnings

> ⚠ **The warnings indicate a potentially dangerous situation which could result in death, personal injury or damaged equipment, if certain guidelines are not followed.**

Notes

> ⓘ **The notes provide general information which will be helpful for the reader to bear in mind.**

Legal information and disclaimer

DEIF takes no responsibility for installation or operation of the generator set. If there is any doubt about how to install or operate the engine/generator controlled by the Multi-line 2 unit, the company responsible for the installation or the operation of the set must be contacted.

> ⚠ **The Multi-line 2 unit is not to be opened by unauthorised personnel. If opened anyway, the warranty will be lost.**

Disclaimer

DEIF A/S reserves the right to change any of the contents of this document without prior notice.

Safety issues

Installing the unit implies work with dangerous currents and voltages. Therefore, the installation should only be carried out by authorised personnel who understand the risks involved in working with live electrical equipment.

> ⚠ **Be aware of the hazardous live currents and voltages. Do not touch any AC measurement inputs as this could lead to injury or death.**

Electrostatic discharge awareness

Sufficient care must be taken to protect the terminals against static discharges during the installation. Once the unit is installed and connected, these precautions are no longer necessary.

Factory settings

The Multi-line 2 unit is delivered from factory with certain factory settings. These are based on average values and are not necessarily the correct settings for matching the engine/generator set in question. Precautions must be taken to check the settings before running the engine/generator set.

Open source software

This product contains open source software licensed under e.g. GNU General Public License (GNU GPL) and GNU Lesser Public License (GNU LGPL). The source code for this software can be obtained by contacting DEIF A/S at support@deif.com. DEIF A/S reserves the right to charge for the cost of the service.

2. Description of option

The option N is an Ethernet hardware option offering a number of features, hereafter called the option N. Please see the option N documentation for details about this option. The present document is describing the Ethernet/IP communication part of this option N.

Please note that the Ethernet/IP communication is disabled as factory setting. You need the option N configurator software to enable this communication. Open the "Settings" menu of the option N configuration SW to enable or disable this option.
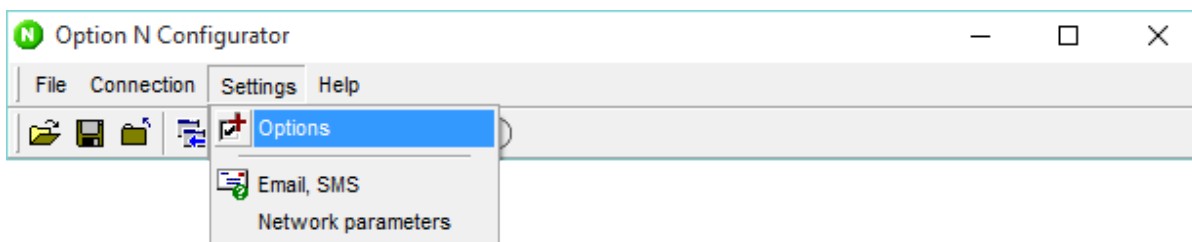
You can now select or discard the Ethernet/IP communication option from there:
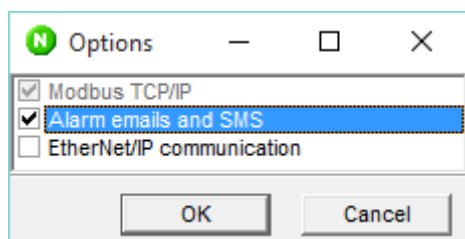
The Ethernet/IP communication will be up and running after a short reboot of the option N card;
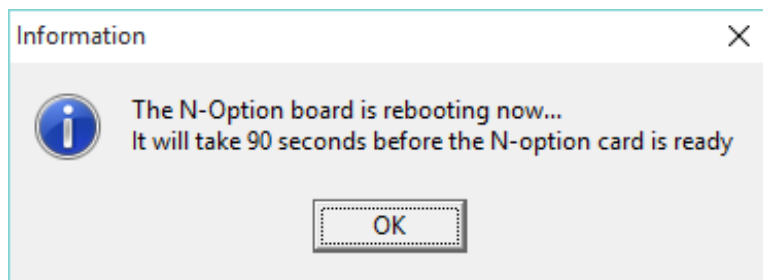
The selection of the EtherNet/IP communication this way requires that the option N configurator software is in version 1.2 (build 1.2.0.58) or later. For the option N firmware in version 2.10.0 and 2.20.0, this selection was not necessary as the EtherNet/IP communication was always active.

3. Ethernet/IP

General

Ethernet/IP stands for Ethernet Industrial Protocol and defines an open industry standard that extends the classic Ethernet with an industrial protocol. This standard was developed jointly by ControlNet International (CI) and the Open DeviceNet Vendor Association (ODVA) with the help of the Industrial Ethernet Association (IEA).

This communication system enables devices to exchange time-critical application data in an industrial environment. The spectrum of devices ranges from simple I/O devices (for example sensors) to complex couplers (for example robots).

Ethernet/IP is based on the TCP/IP protocol family and consequently uses the bottom four layers of the OSI layer model in unaltered form, so that all standard Ethernet communication modules such as PC interface cards, cables, connectors, hubs and switches can also be used with Ethernet/IP. Positioned above the transport layer is the encapsulation protocol, which enables use of the Control & Information Protocol (CIP) on TCP/IP and UDP/IP.

Ethernet/IP makes use of the well-known TCP port number 44818 for explicit messaging and UDP port number 2222 for implicit messaging.

Object modeling

CIP uses an object-oriented approach to modelling the nodes and communication services on a CIP network. Each node is modelled as a collection of **objects**. An object represents a particular element or component within a node. Each object belongs to a class of objects that share the same set of **attributes** and implement the same behaviors. An object is an **instance** of that class with its own unique set of attribute values. A node may contain more than one object of the same class. Nodes and the objects are shown in the figure below.
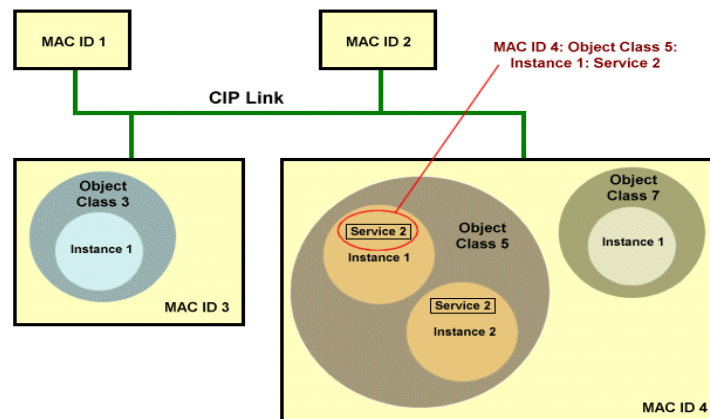
Messaging connection

Ethernet/IP has three types of messaging connections:

Explicit messaging connections are point-to-point relationships that are established to facilitate request-response transactions between two nodes. These connections can be used to reach any network-accessible items within a device. Explicit messaging connections utilise TCP/IP services to move messages across Ethernet.

Unconnected messaging is used in the connection establishment process and for infrequent, low-priority messages. The unconnected resources in a device are referred to as the Unconnected Message Manager, or UCMM. Unconnected messages on Ethernet/IP utilise TCP/IP resources to move messages across Ethernet. To receive ODVA's Declaration of Conformity, Ethernet/IP products are required to implement a UCMM to receive requests from other devices.

Implicit (I/O data) connections (or connected messaging) are established to move application-specific I/O data at regular intervals. These connections are often set up as one-to-many relationships in order to take full advantage of the producer-consumer multicast model. Implicit messaging uses UDP/IP resources to make multicast data transfers over Ethernet a reality. Ethernet/IP utilises resources within each node that are dedicated in advance to a particular purpose, such as frequent explicit message transactions or real-time I/O data transfers. Connection resources are reserved and configured using communications services available via the UCMM.

Object model

General

For network communication, Ethernet/IP uses an object model, in which all of the functions and data of a device are described. Each node in the network is represented as a collection of objects. A number of terms relating to object models are defined below.

Object:

An object provides an abstract representation of a particular component within a product. The realisation of this abstract object model within a product is implementation-dependent. In other words, a product internally maps this object model in a fashion specific to its implementation.

Class:

A class is a set of objects that all represent the same kind of system component. An object instance is the actual representation of a particular object within a class. Each instance of a class has the same set of attributes, but has its own particular set of attribute values. Multiple object instances within a particular class can reside in a CIP node. An object instance and/or an object class has attributes, provides services and implements a behavior.

Instance:

A specific and real (physical) occurrence of an object. For example: New Zealand is an instance of the object class "Country". Different instances of a class have the same services, the same behaviour and the same variables (attributes). They can, however, have different variable values.

Attribute:

The attributes represent the data a device provides over Ethernet/IP. These include the current values of for example a configuration or an input. Typical attributes are configuration or status information.

Service:

Services are used to access classes or the attributes of a class or to generate specific events. These services execute defined actions such as the reading of variables or the resetting of a class. A fixed set of services exists for each class.

Behaviour:

The behaviour defines how a device reacts as a result of external events such as changed process data or internal events such as lapsing timers.

4. Classes

The following classes are supported by the Ethernet/IP option N software:

Class	Name	Type
0x01	Identity	CIP Common Class
0x02	Message Router	CIP Common Class
0x04	Assembly	CIP Common Class
0x06	Connection Manager	CIP Common Class
0x64	Bus A	DEIF Specific Class
0x65	Bus B	DEIF Specific Class
0x66	Breaker A	DEIF Specific Class
0x67	Breaker B	DEIF Specific Class
0x68	Engine	DEIF Specific Class
0x69	Analog inputs	DEIF Specific Class
0x6A	Power management	DEIF Specific Class
0x6B	DEIF controller unit	DEIF Specific Class
0x6E	Digital inputs	DEIF Specific Class
0x6F	Digital outputs	DEIF Specific Class
0xF5	TCP/IP Interface Object	CIP Common Class
0xF6	Ethernet Link Object	CIP Common Class

The description of these specific objects is product-dependent:

Class	Name	DEIF products names									
		AGC	AGC mains	AGC BTB	PPM DG	PPM EDG	PPM shaft	PPM shore	PPM BTB	PPU/GPC	GPU/GPU Hydro
0x64	Bus A	Generator	Mains	Bus A	Generator	Generator	SG	SC	Bus A	Generator	Generator
0x65	Bus B	Busbar	Busbar	Bus B	Busbar	Busbar	Busbar	Busbar	Bus B	Busbar	Busbar
0x66	Break. A	GB	TB	BTB	GB	GB	NA	NA	BTB	GB	GB
0x67	Break. B	MB	MB	NA	NA	NA	NA	NA	NA	NA	NA
0x68	Engine	Engine	Engine	Engine	Engine	Engine	Engine	Engine	Engine	Engine	Eng./turbine
0x69	AI	AI	AI	AI	AI	AI	AI	AI	AI	AI	AI
0x6A	PM	PM	PM	PM	PM	PM	PM	PM	PM	NA	NA
0x6B	DEIF ctr. unit	AGC unit	AGC unit	AGC unit	PPM unit	PPM unit	PPM unit	PPM unit	PPM unit	PPU/GPC unit	GPU/GPU Hydro unit
0x6E	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI	DI
0x6F	DO	DO	DO	DO	DO	DO	DO	DO	DO	DO	DO

SG: Shaft Generator; SC: Shore Connection; AI: Analogue Inputs; PM: Power Management; NA: Not Available; DI: Digital Inputs; DO: Digital Outputs.

Below an example based on a 1 x mains and 2 x DGs application:
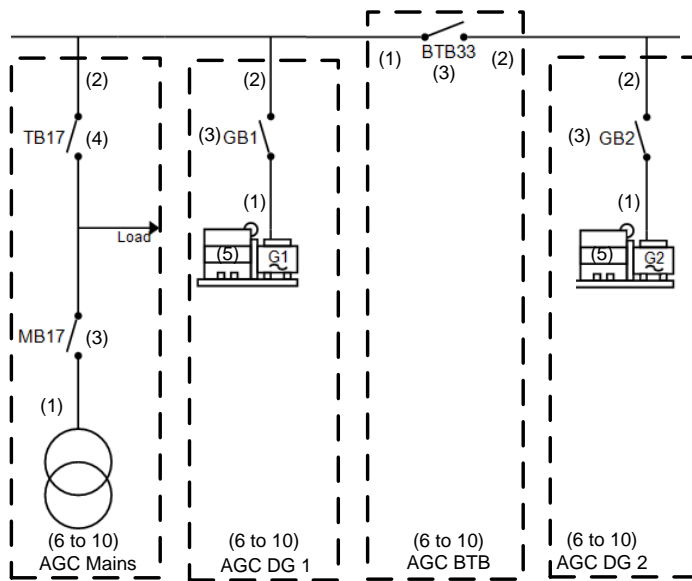
(#)	Class	name
(1)	0x64	Bus A
(2)	0x65	Bus B
(3)	0x66	Breaker A
(4)	0x67	Breaker B
(5)	0x68	Engine
(6)	0x69	Analog inputs
(7)	0x6A	power management
(8)	0x6B	Deif controller unit
(9)	0x6E	Digital inputs
(10)	0x6F	Digital outputs

Identity (01 hex)

This object provides identification of and general information about the device.

Class attributes

ID	Description
0x01	Revision
0x02	Max. instance
0x03	Number of instances
0x06	Max. class attrib. num
0x07	Max. instance attrib. num

Class services

ID	Service
0x01	Get all attributes
0x0E	Get single attribute

Instance attributes

ID	Description
0x01	Vendor ID
0x02	Device type
0x03	Product code
0x04	Revision
0x05	Status
0x06	Serial number
0x07	Product name

Instance services

ID	Service
0x01	Get all attributes
0x0E	Get single attribute

Message router (0x02)

The message router object provides a messaging connection point through which a client may address a service to any object class or instance residing in the physical device.

Class attributes

ID	Description
0x01	Revision
0x02	Max. instance
0x03	Number of instances
0x06	Max. class attrib. num
0x07	Max. instance attrib. num

Class services

ID	Service
0x01	Get all attributes
0x0E	Get single attribute

No instance attributes and instance services.

Assembly (0x04)

This object allows to access I/O process data.

Class attributes

ID	Description
0x01	Revision
0x02	Max. instance
0x03	Number of instances
0x06	Max. class attrib. num
0x07	Max. instance attrib. num

Class services

ID	Service
0x0E	Get single attribute

Instance attributes

ID	Description
0x03	Data

Instance services

ID	Service
0x0E	Get single attribute
0x10	Set single attribute

Static assembly instances

Instance 100 (0x64): Inputs

Class ID	Attribute ID	Word number	Type						Data description
			Read only	Write only	Signed	Word	Double word	Bit	
0x04	3	1	x			x			Word from Modbus address 00 by using a Modbus function 4
		2	x			x			Word from Modbus address 01 by using a Modbus function 4
		3	x			x			Word from Modbus address 03 by using a Modbus function 4
		to							**(See the option H2 documentation of the concerned DEIF product)**
		150	x			x			Word from Modbus address 149 by using a Modbus function 4

The DEIF option H2 documentation of the concerned DEIF product lists the factory-configured data which is readable by reading this vendor-specific assembly object. It is the first 150 words data (Modbus addresses 0 to 149) shown in this option H2 documentation. Please note that the data is from the user configuration area and can be modified by means of the DEIF Modbus configurator tool of the Utility Software (USW3).

Supported services: Get single attributes.

The implicit communication in Ethernet/IP is made using this input assembly object (instance 100).

The first 150 Modbus addresses are mapped into the input assembly object, class code **0x04**, instance **100**. Configuration assembly has instance **151**.

During implicit communication, two different transportation triggers can be used:

Cyclic I/O:
It is one of three types of I/O triggers supported by CIP for the exchange of data on class 0 or 1 I/O connections. Endpoints send their messages at pre-determined cyclic time intervals. [3]

Change of state I/O:
It is one of three types of I/O triggers supported by CIP for the exchange of data on class 0 or 1 I/O connections. CoS endpoints send their messages when a change occurs. The data is also sent at a background cyclic interval if no change occurs to keep the connection from timing out. [3]

During implicit communication, three different connection types can be used:

Exclusive owner (input assembly instance: 100 - ouput assembly instance: 150):
This is one of three types of implicit (I/O) connections. It is a class 0 or 1 bidirectional connection to an output connection point (typically an assembly object), where the data of this assembly can only be controlled by one scanner. There may be a connection to an input assembly; this data is being sent to the scanner. If the input data length is zero, then this direction becomes a heartbeat connection. [3]

Input only (input assembly instance: 100 - ouput assembly instance: 152):
This is one of three types of implicit (I/O) connections. It is a class 0 or 1 connection to an input connection point (typically an assembly object). The scanner receives input data from the target device and produces a heartbeat to the target device. There is no output data. [3]

Listen only (input assembly instance: 100 - ouput assembly instance: 153):
This is one of three types of implicit connections. It is a class 0 or 1 connection to an input connection point (typically an assembly object). The scanner receives input data from the target device and produces a heartbeat to the target device. There is no output data. A listen only connection can only be attached to an existing exclusive owner or input only connection. If this underlying connection closes, then the listen only connection will also be closed or timed out. [3]

Because the "Get Attributes All" service supports only 31 attributes, another solution is used to get all the alarms/alarmACKs using explicit messages.

Indeed, four different assembly objects (different instances) inside attribute #3 contain all the information related to alarm and alarm ack.

Instance 155 (0x9B): Alarms block A

Class ID	Instance ID	Attribute ID	Byte number	Data description
0x04	0x9B	3	1	Read only bit from Modbus address 4000 by using a Modbus function 2
			2	Read only bit from Modbus address 4001 by using a Modbus function 2
			3	Read only bit from Modbus address 4002 by using a Modbus function 2
			to	**(See the option H2 documentation of the concerned DEIF product)**
			1000	Read only bit from Modbus address 4999 by using a Modbus function 2

The DEIF option H2 documentation of the concerned DEIF product explains how to read all alarms of the DEIF unit. This vendor-specific assembly object contains the first half of all these alarms (Modbus addresses 4000 to 4999 by using the Modbus function 2).

Supported services: Get single attributes.

Each byte (8 bits) data of the above table represents one alarm bit. The value of all the above bytes will then never be higher than 1 (value = 0 for inactive alarm and 1 for an active alarm).

Instance 156 (0x9C): Alarms block B

Class ID	Instance ID	Attribute ID	Byte number	Data description
0x04	0x9C	3	1	Read only bit from Modbus address 5000 by using a Modbus function 2
			2	Read only bit from Modbus address 5001 by using a Modbus function 2
			3	Read only bit from Modbus address 5002 by using a Modbus function 2
			to	**(See the option H2 documentation of the concerned DEIF product)**
			1000	Read only bit from Modbus address 5999 by using a Modbus function 2

The DEIF option H2 documentation of the concerned DEIF product explains how to read all alarms of the DEIF unit. This vendor-specific assembly object contains the second half of all these alarms (Modbus addresses 5000 to 5999 by using the Modbus function 2).

Supported services: Get single attributes.

Each byte (8 bits) data of the above table represents one alarm bit. The value of all the above bytes will then never be higher than 1 (value = 0 for inactive alarm and 1 for an active alarm).

Instance 157 (0x9D): Alarms acknowledged block A

Class ID	Instance ID	Attribute ID	Byte number	Data description
0x04	0x9D	3	1	Read only bit from Modbus address 6000 by using a Modbus function 2
			2	Read only bit from Modbus address 6001 by using a Modbus function 2
			3	Read only bit from Modbus address 6002 by using a Modbus function 2
			to	**(See the option H2 documentation of the concerned DEIF product)**
			1000	Read only bit from Modbus address 6999 by using a Modbus function 2

The DEIF option H2 documentation of the concerned DEIF product explains how to read all the acknowledged alarms of the DEIF unit. This vendor-specific assembly object contains the first half of all these acknowledged alarms (Modbus addresses 6000 to 6999 by using the Modbus function 2).

Supported services: Get single attributes.

Each byte (8 bits) data of the above table represents one alarm bit. The value of all the above bytes will then never be higher than 1 (value = 1 for an acknowledged alarm and 0 for a non-acknowledged alarm).

Instance 158 (0x9E): Alarms acknowledged block B

Class ID	Instance ID	Attribute ID	Byte number	Data description
0x04	0x9E	3	1	Read only bit from Modbus address 7000 by using a Modbus function 2
			2	Read only bit from Modbus address 7001 by using a Modbus function 2
			3	Read only bit from Modbus address 7002 by using a Modbus function 2
			to	**(See the option H2 documentation of the concerned DEIF product)**
			1000	Read only bit from Modbus address 7999 by using a Modbus function 2

The DEIF option H2 documentation of the concerned DEIF product explains how to read all the acknowledged alarms of the DEIF unit. This vendor-specific assembly object contains the second half of all these acknowledged alarms (Modbus addresses 7000 to 7999 by using the Modbus function 2).

Supported services: Get single attributes.

Each byte (8 bits) data of the above table represents one alarm bit. The value of all the above bytes will then never be higher than 1 (value = 1 for an acknowledged alarm and 0 for a non-acknowledged alarm).

Connection manager (0x06)

This object is used for connection and connectionless communications.

Class attributes

ID	Description
0x01	Revision
0x02	Max. instance
0x03	Number of instances
0x06	Max. class attrib. num
0x07	Max. instance attrib. num

Class services

ID	Service
0x01	Get all attributes
0x0E	Get single attribute

No instance attributes and instance services.

TCP/IP interface object (0xF5)

The TCP/IP interface object provides the mechanism to configure a device's TCP/IP network interface.

Class attributes

ID	Description
0x01	Revision
0x02	Max. instance
0x03	Number of instances
0x06	Max. class attrib. num
0x07	Max. instance attrib. num

Class services

ID	Service
0x01	Get all attributes
0x0E	Get single attribute

Instance attributes

ID	Description
0x01	TCP status
0x02	Config. capability
0x03	Config. control
0x04	Physical link object
0x05	Interface config.
0x06	Hostname

Instance services

ID	Service
0x01	Get all attributes
0x0E	Get single attribute

Ethernet link object (0xF6)

The Ethernet link object maintains link-specific counters and status information for an IEEE 802.3 communications interface.

Class attributes

ID	Description
0x01	Revision
0x02	Max. instance
0x03	Number of instances
0x06	Max. class attrib. num
0x07	Max. instance attrib. num

Class services

ID	Service
0x01	Get all attributes
0x0E	Get single attribute

Instance attributes

ID	Description
0x01	Interface speed
0x02	Interface flag
0x03	Physical address

Instance services

ID	Service
0x01	Get all attributes
0x0E	Get single attribute

DEIF controller unit - (0x6B)

Class ID	Attribute ID	Read only	Write only	Signed	Word	Double word	Bit	Attribute name	AGC	AGC mains	AGC bus tie	PPM DG	PPM EDG	PPM SHAFT	PPM SHORE	PPM BTB	PPU/GPC	GPU/GPU Hydro
					Type							Product						
Please note that all the DEIF-specific objects only have one instance, the instance number 1.																		
0x6B	1	x			x			Number of alarms	x	x	x	x	x	x	x	x	x	x
0x6B	2	x			x			Number of unack. alarms	x	x	x	x	x	x	x	x	x	x
0x6B	3	x			x			Number of active ack. alarms	x	x	x	x	x	x	x	x	x	x
0x6B	4	x			x			DC supply term. 1-2 [V/10]	x	x	x	x	x	x	x	x	x	x
0x6B	5	x			x			DC supply term. 98-99 [V/10]	x	x	x	x	x	x	x	x	x	x
0x6B	6	x		x	x			Bus power		105								
								Bus A power			105							
0x6B	7	x		x	x			Mains power	102	102								
								Tie breaker power					102					
0x6B	8	x					x	Mains failure/main busbar failure	x	x			x					
0x6B	9	x					x	Battery test	x				x				x	x
0x6B	10	x					x	Block mode	x		x							
0x6B	11	x					x	Manual mode	x								x	x
								SWBD control				x	x	x	x	x		

Class ID	Attribute ID	Read only	Write only	Signed	Word	Double word	Bit	Attribute name	AGC	AGC mains	AGC bus tie	PPM DG	PPM EDG	PPM SHAFT	PPM SHORE	PPM BTB	PPU/GPC	GPU/GPU Hydro
				Type								Product						
Please note that all the DEIF-specific objects only have one instance, the instance number 1.																		
0x6B	12	x					x	Semi-auto mode	x			x	x					
0x6B	13	x					x	Auto mode	x			x	x					
0x6B	14	x					x	Test	x	x			x					
0x6B	15	x					x	Island	x	x								
								DG supply						x	x	x		
0x6B	16	x					x	Automatic mains failure (AMF)	x	x								
								SG 1 supply						x	x	x		
0x6B	17	x					x	Peak shaving	x	x								
								SG 2 supply						x	x	x		
0x6B	18	x					x	Fixed power	x	x							x	x
								SHORE supply						x	x	x		
0x6B	19	x					x	Mains power export	x	x								
								SPLIT								x		
0x6B	20	x					x	Load take over	x	x								
0x6B	21	x					x	Power management	x		x							
0x6B	22		x	x	x			Power regulator setpoint	x	x		x	x				x	x
0x6B	23		x	x	x			Power factor regulator setpoint	x			x	x				x	x
0x6B	24		x	x	x			Reactive power	x			x	x				x	x

Class ID	Attribute ID	Type						Attribute name	Product									
		Read only	Write only	Signed	Word	Double word	Bit		AGC	AGC mains	AGC bus tie	PPM DG	PPM EDG	PPM SHAFT	PPM SHORE	PPM BTB	PPU/GPC	GPU/GPU Hydro
Please note that all the DEIF-specific objects only have one instance, the instance number 1.																		
								regulator setpoint										
0x6B	25		x		x			Frequency regulator setpoint	x			x	x				x	x
0x6B	26		x		x			Voltage regulator setpoint	x			x	x				x	x
0x6B	27	x					x	Fixed frequency									x	x
0x6B	28	x					x	P load sharing									x	
0x6B	29	x					x	Frequency droop									x	
0x6B	30	x					x	Ext. GOV setpoint									x	x
0x6B	31	x					x	Fixed voltage									x	x
0x6B	32	x					x	Fixed Q									x	
0x6B	33	x					x	Fixed PF									x	
0x6B	34	x					x	Q load sharing									x	
0x6B	35	x					x	Voltage droop									x	
0x6B	36	x					x	Ext. AVR setpoint									x	x
0x6B	37	x					x	Remote									x	x
0x6B	38	x					x	Local									x	x
0x6B	39	x					x	Deload									x	x
0x6B	40	x					x	Start sync./control									x	x
0x6B	41	x		x	x			Nominal power active (1-4)	x	x	x	x	x	x			x	x

Class ID	Attribute ID	Type						Attribute name	Product									
		Read only	Write only	Signed	Word	Double word	Bit		AGC	AGC mains	AGC bus tie	PPM DG	PPM EDG	PPM SHAFT	PPM SHORE	PPM BTB	PPU/GPC	GPU/GPU Hydro
Please note that all the DEIF-specific objects only have one instance, the instance number 1.																		
0x6B	42	x		x	x			Mains power transducer used	x									
								Tie breaker power transducer								x		
0x6B	43	x				x		Fan A running hours	x									
0x6B	44	x				x		Fan B running hours	x									
0x6B	45	x				x		Fan C running hours	x									
0x6B	46	x				x		Fan D running hours	x									
0x6B	47	x			x			CANshare ID									x	x
0x6B	48	x			x			CANshare section									x	x
0x6B	49	x				x		CANshare, total active power									x	x
0x6B	50	x				x		CANShare, total reactive power									x	x
0x6B	51		x				x	Reset analogue outputs	x			x	x				x	x
0x6B	52		x				x	Start + sync. (semi)				x	x					
0x6B	53		x				x	Alarm inhibit 1	x	x	x	x	x	x	x	x	x	x
0x6B	54		x				x	Alarm inhibit 2	x	x	x	x	x	x	x	x	x	x
0x6B	55		x				x	Alarm inhibit 3	x	x	x	x	x	x	x	x	x	x
0x6B	56		x				x	Alarm acknowledge	x	x	x	x	x	x	x	x	x	x
0x6B	57		x				x	Nominal setting 1	x	x	x	x	x	x	x	x	x	x

Class ID	Attribute ID	Type						Attribute name	Product									
		Read only	Write only	Signed	Word	Double word	Bit		AGC	AGC mains	AGC bus tie	PPM DG	PPM EDG	PPM SHAFT	PPM SHORE	PPM BTB	PPU/GPC	GPU/GPU Hydro
Please note that all the DEIF-specific objects only have one instance, the instance number 1.																		
0x6B	58		x				x	Nominal setting 2	x	x	x	x	x	x	x	x	x	x
0x6B	59		x				x	Nominal setting 3	x	x	x	x	x	x	x	x	x	x
0x6B	60		x				x	Nominal setting 4	x	x	x						x	x
0x6B	61		x				x	Deload/stop (semi)				x	x					
0x6B	62		x				x	Island	x	x								
								DG supply						x	x	x		
0x6B	63		x				x	Automatic mains failure (AMF)	x	x								
								SG 1 supply						x	x	x		
0x6B	64		x				x	Peak shaving	x	x								
								SG 2 supply						x	x	x		
0x6B	65		x				x	Fixed power	x	x								
								SHORE supply						x	x	x		
0x6B	66		x				x	Mains power export (MPE)	x	x								
								SPLIT								x		
0x6B	67		x				x	Load take over	x	x								
0x6B	68		x				x	DG supply									x	
0x6B	69		x				x	SG/SC supply									x	
0x6B	70		x				x	Auto start/stop	x			x						

Class ID	Attribute ID	Type						Attribute name	Product									
		Read only	Write only	Signed	Word	Double word	Bit		AGC	AGC mains	AGC bus tie	PPM DG	PPM EDG	PPM SHAFT	PPM SHORE	PPM BTB	PPU/GPC	GPU/GPU Hydro
Please note that all the DEIF-specific objects only have one instance, the instance number 1.
0x6B	71		x				x	Manual mode	x			x					x	x
0x6B	72		x				x	Auto mode	x			x	x					
0x6B	73		x				x	Semi-auto mode	x			x	x					
0x6B	74		x				x	Test mode	x				x					
0x6B	75		x				x	External frequency control	x			x	x					
0x6B	76		x				x	External voltage control	x			x	x					
0x6B	77		x				x	External active power control	x			x	x					
0x6B	78		x				x	External reactive power control	x			x	x					
0x6B	79		x				x	External power factor control	x			x	x					
0x6B	80		x				x	Capacitive PF	x	x							x	
0x6B	81		x				x	Base load	x			x						
0x6B	82		x				x	1st priority	x	x		x						
0x6B	83		x				x	Application 1	x	x	x	x	x	x	x	x		
0x6B	84		x				x	Application 2	x	x	x	x	x	x	x	x		
0x6B	85		x				x	Application 3	x	x	x	x	x	x	x	x		
0x6B	86		x				x	Application 4	x	x	x	x	x	x	x	x		
0x6B	87		x				x	Battery test	x								x	x

Class ID	Attribute ID	Read only	Write only	Signed	Word	Double word	Bit	Attribute name	AGC	AGC mains	AGC bus tie	PPM DG	PPM EDG	PPM SHAFT	PPM SHORE	PPM BTB	PPU/GPC	GPU/GPU Hydro
						Type							**Product**						
Please note that all the DEIF-specific objects only have one instance, the instance number 1.																			
0x6B	88		x				x	Event printer	x	x	x							
0x6B	89		x				x	Synchronise clock to 4:00 a.m.	x	x	x	x	x	x	x	x	x	x
0x6B	90		x				x	Virtual event 1	x	x	x	x	x	x	x	x	x	x
0x6B	91		x				x	Virtual event 2	x	x	x	x	x	x	x	x	x	x
0x6B	92		x				x	Virtual event 3	x	x	x	x	x	x	x	x	x	x
0x6B	93		x				x	Virtual event 4	x	x	x	x	x	x	x	x	x	x
0x6B	94		x				x	Virtual event 5	x	x	x	x	x	x	x	x	x	x
0x6B	95		x				x	Virtual event 6	x	x	x	x	x	x	x	x	x	x
0x6B	96		x				x	Virtual event 7	x	x	x	x	x	x	x	x	x	x
0x6B	97		x				x	Virtual event 8	x	x	x	x	x	x	x	x	x	x
0x6B	98		x				x	Virtual event 9	x	x	x	x	x	x	x	x	x	x
0x6B	99		x				x	Virtual event 10	x	x	x	x	x	x	x	x	x	x
0x6B	100		x				x	Virtual event 11	x	x	x	x	x	x	x	x	x	x
0x6B	101		x				x	Virtual event 12	x	x	x	x	x	x	x	x	x	x
0x6B	102		x				x	Virtual event 13	x	x	x	x	x	x	x	x	x	x
0x6B	103		x				x	Virtual event 14	x	x	x	x	x	x	x	x	x	x
0x6B	104		x				x	Virtual event 15	x	x	x	x	x	x	x	x	x	x
0x6B	105		x				x	Virtual event 16	x	x	x	x	x	x	x	x	x	x
0x6B	106		x				x	Virtual event 17	x	x	x	x	x	x	x	x	x	x

Class ID	Attribute ID	Type						Attribute name	Product									
		Read only	Write only	Signed	Word	Double word	Bit		AGC	AGC mains	AGC bus tie	PPM DG	PPM EDG	PPM SHAFT	PPM SHORE	PPM BTB	PPU/GPC	GPU/GPU Hydro
Please note that all the DEIF-specific objects only have one instance, the instance number 1.																		
0x6B	107		x				x	Virtual event 18	x	x	x	x	x	x	x	x	x	x
0x6B	108		x				x	Virtual event 19	x	x	x	x	x	x	x	x	x	x
0x6B	109		x				x	Virtual event 20	x	x	x	x	x	x	x	x	x	x
0x6B	110		x				x	Virtual event 21	x	x	x	x	x	x	x	x	x	x
0x6B	111		x				x	Virtual event 22	x	x	x	x	x	x	x	x	x	x
0x6B	112		x				x	Virtual event 23	x	x	x	x	x	x	x	x	x	x
0x6B	113		x				x	Virtual event 24	x	x	x	x	x	x	x	x	x	x
0x6B	114		x				x	Virtual event 25	x	x	x	x	x	x	x	x	x	x
0x6B	115		x				x	Virtual event 26	x	x	x	x	x	x	x	x	x	x
0x6B	116		x				x	Virtual event 27	x	x	x	x	x	x	x	x	x	x
0x6B	117		x				x	Virtual event 28	x	x	x	x	x	x	x	x	x	x
0x6B	118		x				x	Virtual event 29	x	x	x	x	x	x	x	x	x	x
0x6B	119		x				x	Virtual event 30	x	x	x	x	x	x	x	x	x	x
0x6B	120		x				x	Virtual event 31	x	x	x	x	x	x	x	x	x	x
0x6B	121		x				x	Virtual event 32	x	x	x	x	x	x	x	x	x	x
0x6B	122		x				x	Fixed frequency									x	
0x6B	123		x				x	Fixed P									x	
0x6B	124		x				x	P load sharing									x	
0x6B	125		x				x	Frequency droop									x	

Class ID	Attribute ID	Type						Attribute name	Product									
		Read only	Write only	Signed	Word	Double word	Bit		AGC	AGC mains	AGC bus tie	PPM DG	PPM EDG	PPM SHAFT	PPM SHORE	PPM BTB	PPU/GPC	GPU/GPU Hydro
Please note that all the DEIF-specific objects only have one instance, the instance number 1.																		
0x6B	126		x				x	Ext. GOV setpoint									x	
0x6B	127		x				x	Fixed voltage									x	
0x6B	128		x				x	Fixed Q									x	
0x6B	129		x				x	Fixed PF									x	
0x6B	130		x				x	Q load sharing									x	
0x6B	131		x				x	Voltage droop									x	
0x6B	132		x				x	Ext. AVR setpoint									x	
0x6B	133		x				x	Remote									x	x
0x6B	134		x				x	Local									x	x
0x6B	135		x				x	Deload									x	x
0x6B	136		x				x	Start sync./control									x	x
0x6B	137		x				x	Manual gov. up									x	x
0x6B	138		x				x	Manual gov. down									x	x
0x6B	139		x				x	Manual AVR up									x	x
0x6B	140		x				x	Manual AVR down									x	x
0x6B	141		x				x	Activate CANshare section 1									x	x
0x6B	142		x				x	Activate CANshare section 2									x	x
0x6B	143		x				x	Activate CANshare section 3									x	x

Class ID	Attribute ID	Type						Attribute name	Product									
		Read only	Write only	Signed	Word	Double word	Bit		AGC	AGC mains	AGC bus tie	PPM DG	PPM EDG	PPM SHAFT	PPM SHORE	PPM BTB	PPU/GPC	GPU/GPU Hydro
Please note that all the DEIF-specific objects only have one instance, the instance number 1.																	
0x6B	144		x				x	Activate CANshare section 4									x	x
0x6B	145		x				x	Activate CANshare section 5									x	x
0x6B	146		x				x	Enable external frequency control	x									
0x6B	147		x				x	Disable external frequency control	x									
0x6B	148		x				x	Enable external voltage control	x									
0x6B	149		x				x	Disable external voltage control	x									
0x6B	150		x				x	Enable external power control	x									
0x6B	151		x				x	Disable external power control	x									
0x6B	152		x				x	Enable external VAr control	x									
0x6B	153		x				x	Disable external VAr control	x									
0x6B	154		x				x	Enable external CosPhi control	x									
0x6B	155		x				x	Disable external CosPhi control	x									
0x6B	156		x				x	Enable PM base load	x									

Class ID	Attribute ID	Read only	Write only	Signed	Word	Double word	Bit	Attribute name	AGC	AGC mains	AGC bus tie	PPM DG	PPM EDG	PPM SHAFT	PPM SHORE	PPM BTB	PPU/GPC	GPU/GPU Hydro
Please note that all the DEIF-specific objects only have one instance, the instance number 1.																			
0x6B	157		x				x	Disable PM base load	x									
0x6B	158		x		x			Year	x	x	x	x	x	x	x	x	x	x
0x6B	159		x		x			Month	x	x	x	x	x	x	x	x	x	x
0x6B	160		x		x			Date	x	x	x	x	x	x	x	x	x	x
0x6B	161		x		x			Day	x	x	x	x	x	x	x	x	x	x
0x6B	162		x		x			Hour	x	x	x	x	x	x	x	x	x	x
0x6B	163		x		x			Min.	x	x	x	x	x	x	x	x	x	x
0x6B	164		x		x			Sec.	x	x	x	x	x	x	x	x	x	x
0x6B	165	x			x			Bit 0 = Mains failure	x	x								
		x			x			Bit 0 = Main busbar failure	x					x				
		x			x			Bit 2 = DG ramp down	x			x	x				x	x
		x			x			Bit 3 = Start regulation	x			x	x				x	x
		x			x			Bit 9 = Battery test	x								x	x
		x			x			Bit 10 = Printing log	x	x	x							
0x6B	166	x			x			Bit 12 = DG supply							x	x		
		x			x			Bit 13 = SG/SC supply							x	x		
		x			x			Bit 15 = AMF active	x	x								

Class ID	Attribute ID	Type						Attribute name	Product									
		Read only	Write only	Signed	Word	Double word	Bit		AGC	AGC mains	AGC bus tie	PPM DG	PPM EDG	PPM SHAFT	PPM SHORE	PPM BTB	PPU/GPC	GPU/GPU Hydro
Please note that all the DEIF-specific objects only have one instance, the instance number 1.																		
0x6B	167	x			x			Bit 0 = SWBD mode									x	x
		x			x			Bit 2 = Fixed P									x	

Bus A - (0x64)

Class ID	Attribute ID	Read only	Write only	Signed	Word	Double word	Bit	Attribute name	AGC	AGC mains	AGC bus tie	PPM DG	PPM EDG	PPM SHAFT	PPM SHORE	PPM BTB	PPU/GPC	GPU/GPU Hydro
Please note that all the DEIF-specific objects only have one instance, the instance number 1.
0x64	1	x			x			U L1-L2, Generator voltage L1-L2 [V]	x			x	x	x			x	x
		x			x			U L1-L2, Mains voltage L1-L2 [V]		x								
		x			x			U L1-L2, Bus A voltage L1-L2 [V]			x					x		
		x			x			U L1-L2, Shore voltage L1-L2 [V]							x			
0x64	2	x			x			U L2-L3, Generator voltage L1-L2 [V]	x			x	x	x			x	x
		x			x			U L2-L3, Mains voltage L1-L2 [V]		x								
		x			x			U L2-L3, Bus A voltage L1-L2 [V]			x					x		
		x			x			U L2-L3, Shore voltage L1-L2 [V]							x			
0x64	3	x			x			U L3-L1, Generator voltage L1-L2 [V]	x			x	x	x			x	x
		x			x			U L3-L1, Mains voltage L1-L2 [V]		x								
		x			x			U L3-L1, Bus A			x					x		

Class ID	Attribute ID	Type						Attribute name	Product									
		Read only	Write only	Signed	Word	Double word	Bit		AGC	AGC mains	AGC bus tie	PPM DG	PPM EDG	PPM SHAFT	PPM SHORE	PPM BTB	PPU/GPC	GPU/GPU Hydro
Please note that all the DEIF-specific objects only have one instance, the instance number 1.																		
								voltage L1-L2 [V]										
		x			x			U L3-L1, Shore voltage L1-L2 [V]								x		
0x64	4	x			x			V L1, Generator voltage L1-L2 [V]	x			x	x	x			x	x
		x			x			V L1, Mains voltage L1-L2 [V]		x								
		x			x			V L1, Bus A voltage L1-L2 [V]			x					x		
		x			x			V L1, Shore voltage L1-L2 [V]							x			
0x64	5	x			x			V L2, Generator voltage L1-L2 [V]	x			x	x	x			x	x
		x			x			V L2, Mains voltage L1-L2 [V]		x								
		x			x			V L2, Bus A voltage L1-L2 [V]			x					x		
		x			x			V L2, Shore voltage L1-L2 [V]							x			
0x64	6	x			x			V L3, Generator voltage L1-L2 [V]	x			x	x	x			x	x
		x			x			V L3, Mains voltage L1-L2 [V]		x								
		x			x			V L3, Bus A voltage L1-L2 [V]			x					x		

Class ID	Attribute ID	Type						Attribute name	Product									
		Read only	Write only	Signed	Word	Double word	Bit		AGC	AGC mains	AGC bus tie	PPM DG	PPM EDG	PPM SHAFT	PPM SHORE	PPM BTB	PPU/GPC	GPU/GPU Hydro
Please note that all the DEIF-specific objects only have one instance, the instance number 1.																		
		x			x			V L3, Shore voltage L1-L2 [V]							x			
0x64	7	x			x			f L1, Generator f L1 [Hz/100]	x			x	x	x			x	x
		x			x			f L1, Mains f L1 [Hz/100]		x								
		x			x			f L1, Bus A f L1 [Hz/100]			x					x		
		x			x			f L1, Shore f L1 [Hz/100]							x			
0x64	8	x			x			f L2, Generator f L1 [Hz/100]	x			x	x	x			x	x
		x			x			f L2, Mains f L1 [Hz/100]		x								
		x			x			f L2, Bus A f L1 [Hz/100]			x					x		
		x			x			f L2, Shore f L1 [Hz/100]							x			
0x64	9	x			x			f L3, Generator f L1 [Hz/100]	x			x	x	x			x	x
		x			x			f L3, Mains f L1 [Hz/100]		x								
		x			x			f L3, Bus A f L1 [Hz/100]			x					x		
		x			x			f L3, Shore f L1							x			

Class ID	Attribute ID	Type						Attribute name	Product									
		Read only	Write only	Signed	Word	Double word	Bit		AGC	AGC mains	AGC bus tie	PPM DG	PPM EDG	PPM SHAFT	PPM SHORE	PPM BTB	PPU/GPC	GPU/GPU Hydro
Please note that all the DEIF-specific objects only have one instance, the instance number 1.																		
								[Hz/100]										
0x64	10	x		x	x			Phi L1-L2, U gen. phase angle L1-L2 [Deg/10]	x			x	x	x			x	x
		x		x	x			Phi L1-L2, U mains phase angle L1-L2 [Deg/10]		x								
		x		x	x			Phi L1-L2, U BA phase angle L1-L2 [Deg/10]			x					x		
		x		x	x			Phi L1-L2, U SC phase angle L1-L2 [Deg/10]							x			
0x64	11	x		x	x			Phi L2- L3, U gen. phase angle L2-L3 [Deg/10]	x			x	x	x			x	x
		x		x	x			Phi L2- L3, U mains phase angle L2-L3 [Deg/10]		x								
		x		x	x			Phi L2- L3, U BA phase angle L2-L3 [Deg/10]			x					x		
		x		x	x			Phi L2- L3, U SC phase angle L2-L3 [Deg/10]							x			

Class ID	Attribute ID	Read only	Write only	Signed	Word	Double word	Bit	Attribute name	AGC	AGC mains	AGC bus tie	PPM DG	PPM EDG	PPM SHAFT	PPM SHORE	PPM BTB	PPU/GPC	GPU/GPU Hydro
					Type			**Attribute name**					**Product**					
								Please note that all the DEIF-specific objects only have one instance, the instance number 1.										
0x64	12	x		x	x			Phi L3-L1, U gen. phase angle L3-L1 [Deg/10]	x			x	x	x			x	x
		x		x	x			Phi L3-L1, U mains phase angle L3-L1 [Deg/10]		x								
		x		x	x			Phi L3-L1, U BA phase angle L3-L1 [Deg/10]			x					x		
		x		x	x			Phi L3-L1, U SC phase angle L3-L1 [Deg/10]							x			
0x64	13	x			x			I L1, Generator current L1 [A]	x			x	x	x			x	x
		x			x			I L1, Mains current L1 [A]		x								
		x			x			I L1, Bus A current L1 [A]			x					x		
		x			x			I L1, Shore current L1 [A]							x			
0x64	14	x			x			I L2, Generator current L1 [A]	x			x	x	x			x	x
		x			x			I L2, Mains current L1 [A]		x								
		x			x			I L2, Bus A current L1			x					x		

Class ID	Attribute ID	Type						Attribute name	Product									
		Read only	Write only	Signed	Word	Double word	Bit		AGC	AGC mains	AGC bus tie	PPM DG	PPM EDG	PPM SHAFT	PPM SHORE	PPM BTB	PPU/GPC	GPU/GPU Hydro
Please note that all the DEIF-specific objects only have one instance, the instance number 1.																		
								[A]										
		x			x			I L2, Shore current L1 [A]								x		
0x64	15	x			x			I L3, Generator current L1 [A]	x			x	x	x			x	x
		x			x			I L3, Mains current L1 [A]		x								
		x			x			I L3, Bus A current L1 [A]			x					x		
		x			x			I L3, Shore current L1 [A]							x			
0x64	16	x		x	x			PGEN L1 Generator power L1 [kW]	x			x	x	x			x	x
		x		x	x			PMAINS L1 Mains power L1 [kW]		x								
		x		x	x			Bus A power L1 [kW]			x					x		
		x		x	x			Bus A power L1 [kW]							x			
0x64	17	x		x	x			PGEN L2 Generator power L2 [kW]	x			x	x	x			x	x
		x		x	x			PMAINS L2 Mains power L2 [kW]		x								
		x		x	x			Bus A power L2 [kW]			x					x		
		x		x	x			Bus A power L2 [kW]							x			

Class ID	Attribute ID	Type						Attribute name	Product									
		Read only	Write only	Signed	Word	Double word	Bit		AGC	AGC mains	AGC bus tie	PPM DG	PPM EDG	PPM SHAFT	PPM SHORE	PPM BTB	PPU/GPC	GPU/GPU Hydro
Please note that all the DEIF-specific objects only have one instance, the instance number 1.																		
0x64	18	x		x	x			PGEN L3 Generator power L3 [kW]	x			x	x	x			x	x
		x		x	x			PMAINS L3 Mains power L3 [kW]		x								
		x		x	x			Bus A power L3 [kW]			x					x		
		x		x	x			Bus A power L3 [kW]							x			
0x64	19	x		x	x			PGEN Generator power [kW]	x			x	x	x			x	x
		x		x	x			PMAINS Mains power [kW]		x								
		x		x	x			Bus A power [kW]			x					x		
		x		x	x			Bus A power [kW]							x			
0x64	20	x		x	x			QGEN L1 Generator reactive power L1 [kVAr]	x			x	x	x			x	x
		x		x	x			QMAINS L1 Mains reactive power L1 [kVAr]		x								
		x		x	x			QBA L1 Bus A reactive power L1 [kVAr]			x					x		
		x		x	x			QSC L1 Bus A reactive power L1 [kVAr]							x			

Class ID	Attribute ID		Type						Attribute name	Product									
			Read only	Write only	Signed	Word	Double word	Bit		AGC	AGC mains	AGC bus tie	PPM DG	PPM EDG	PPM SHAFT	PPM SHORE	PPM BTB	PPU/GPC	GPU/GPU Hydro
Please note that all the DEIF-specific objects only have one instance, the instance number 1.
0x64	21		x		x	x			QGEN L2 Generator reactive power L2 [kVAr]	x			x	x	x			x	x
			x		x	x			QMAINS L2 Mains reactive power L2 [kVAr]		x								
			x		x	x			QBA L2 Bus A reactive power L2 [kVAr]			x					x		
			x		x	x			QSC L2 Bus A reactive power L2 [kVAr]							x			
0x64	22		x		x	x			QGEN L3 Generator reactive power L3 [kVAr]	x			x	x	x			x	x
			x		x	x			QMAINS L3 Mains reactive power L3 [kVAr]		x								
			x		x	x			QBA L3 Bus A reactive power L3 [kVAr]			x					x		
			x		x	x			QSC L3 Bus A reactive power L3 [kVAr]							x			
0x64	23		x		x	x			QGEN Generator	x			x	x	x			x	x

Class ID	Attribute ID	Type						Attribute name	Product									
		Read only	Write only	Signed	Word	Double word	Bit		AGC	AGC mains	AGC bus tie	PPM DG	PPM EDG	PPM SHAFT	PPM SHORE	PPM BTB	PPU/GPC	GPU/GPU Hydro
Please note that all the DEIF-specific objects only have one instance, the instance number 1.																		
								reactive power [kVAr]										
		x		x	x			QMAINS Mains reactive power [kVAr]		x								
		x		x	x			QBA Bus A reactive power [kVAr]			x					x		
		x		x	x			QSC Bus A reactive power [kVAr]							x			
0x64	24	x		x	x			SGEN L1 Generator apparent power L1 [kVA]	x			x	x	x			x	x
		x		x	x			SMAINS L1 Mains apparent power L1 [kVA]		x								
		x		x	x			SBA L1 Bus A apparent power L1 [kVA]			x					x		
		x		x	x			SSC L1 Bus A apparent power L1 [kVA]							x			
0x64	25	x		x	x			SGEN L2 Generator apparent power L2 [kVA]	x			x	x	x			x	x
		x		x	x			SMAINS L2 Mains apparent power L2 [kVA]		x								

Class ID	Attribute ID	Type						Attribute name	Product									
		Read only	Write only	Signed	Word	Double word	Bit		AGC	AGC mains	AGC bus tie	PPM DG	PPM EDG	PPM SHAFT	PPM SHORE	PPM BTB	PPU/GPC	GPU/GPU Hydro
Please note that all the DEIF-specific objects only have one instance, the instance number 1.																		
		x		x	x			SBA L2 Bus A apparent power L2 [kVA]			x					x		
		x		x	x			SSC L2 Bus A apparent power L2 [kVA]							x			
0x64	26	x		x	x			SGEN L3 Generator apparent power L3 [kVA]	x			x	x	x			x	x
		x		x	x			SMAINS L3 Mains apparent power L3 [kVA]		x								
		x		x	x			SBA L3 Bus A apparent power L3 [kVA]			x					x		
		x		x	x			SSC L3 Bus A apparent power L3 [kVA]							x			
0x64	27	x		x	x			SGEN Generator apparent power [kVA]	x			x	x	x			x	x
		x		x	x			SMAINS Mains apparent power [kVA]		x								
		x		x	x			SBA Bus A apparent power [kVA]			x					x		
		x		x	x			SSC Bus A apparent							x			

Class ID	Attribute ID	Type						Attribute name	Product									
		Read only	Write only	Signed	Word	Double word	Bit		AGC	AGC mains	AGC bus tie	PPM DG	PPM EDG	PPM SHAFT	PPM SHORE	PPM BTB	PPU/GPC	GPU/GPU Hydro
Please note that all the DEIF-specific objects only have one instance, the instance number 1.																		
								power [kVA]										
0x64	28	x				x		RGEN, Export, reactive energy counter [kVArh]	x			x	x	x			x	x
		x				x		RMAINS, Export, reactive energy counter [kVArh]		x								
		x				x		RBA, Export, reactive energy counter [kVArh]			x					x		
		x				x		RSC, Export, reactive energy counter [kVArh]							x			
0x64	29	x				x		RGEN, Export, reactive energy counter month [kVArh]	x			x	x	x			x	x
		x				x		RMAINS, Export, reactive energy counter month [kVArh]		x								
		x				x		RBA, Export, reactive energy counter month [kVArh]			x					x		
		x				x		RSC, Export, reactive							x			

Class ID	Attribute ID	Type						Attribute name	Product									
		Read only	Write only	Signed	Word	Double word	Bit		AGC	AGC mains	AGC bus tie	PPM DG	PPM EDG	PPM SHAFT	PPM SHORE	PPM BTB	PPU/GPC	GPU/GPU Hydro
Please note that all the DEIF-specific objects only have one instance, the instance number 1.																		
								energy counter month [kVArh]										
0x64	30	x				x		RGEN, Export, reactive energy counter week [kVArh]	x			x	x	x			x	x
		x				X		RMAINS, Export, reactive energy counter week [kVArh]		x								
		x				x		RBA, Export, reactive energy counter week [kVArh]			x					x		
		x				x		RSC, Export, reactive energy counter week [kVArh]							x			
0x64	31	x				x		RGEN, Export, reactive energy counter total [kVArh]	x			x	x	x			x	x
		x				x		RMAINS, Export, reactive energy counter total [kVArh]		x								
		x				x		RBA, Export, reactive energy counter total [kVArh]			x					x		
		x				x		RSC, Export, reactive energy counter total							x			

Class ID	Attribute ID	Type						Attribute name	Product									
		Read only	Write only	Signed	Word	Double word	Bit		AGC	AGC mains	AGC bus tie	PPM DG	PPM EDG	PPM SHAFT	PPM SHORE	PPM BTB	PPU/GPC	GPU/GPU Hydro
Please note that all the DEIF-specific objects only have one instance, the instance number 1.																		
								[kVArh]										
0x64	32	x				x		RGEN, Export, active energy counter day [kWh]	x			x	x	x			x	x
		x				x		RMAINS, Export, active energy counter day [kWh]		x								
		x				x		RBA, Export, active energy counter day [kWh]			x					x		
		x				x		RSC, Export, active energy counter day [kWh]							x			
0x64	33	x				x		RGEN, Export, active energy counter week [kWh]	x			x	x	x			x	x
		x				x		RGEN, Export, active energy counter week [kWh]		x								
		x				x		RGEN, Export, active energy counter week [kWh]			x					x		
		x				x		RGEN, Export, active energy counter week [kWh]							x			

Class ID	Attribute ID		Type						Attribute name	Product									
			Read only	Write only	Signed	Word	Double word	Bit		AGC	AGC mains	AGC bus tie	PPM DG	PPM EDG	PPM SHAFT	PPM SHORE	PPM BTB	PPU/GPC	GPU/GPU Hydro
Please note that all the DEIF-specific objects only have one instance, the instance number 1.																			
0x64	34		x				x		RGEN, Export, active energy counter month [kWh]	x			x	x	x			x	x
			x				x		RGEN, Export, active energy counter month [kWh]		x								
			x				x		RGEN, Export, active energy counter month [kWh]			x					x		
			x				x		RGEN, Export, active energy counter month [kWh]							x			
0x64	35		x				x		RGEN, Export, active energy counter total [kWh]	x			x	x	x			x	x
			x				x		RGEN, Export, active energy counter total [kWh]		x								
			x				x		RGEN, Export, active energy counter total [kWh]			x					x		
			x				x		RGEN, Export, active energy counter total [kWh]							x			
0x64	36		x				x		RGEN, import,	x			x	x	x			x	x

Class ID	Attribute ID	Type						Attribute name	Product									
		Read only	Write only	Signed	Word	Double word	Bit		AGC	AGC mains	AGC bus tie	PPM DG	PPM EDG	PPM SHAFT	PPM SHORE	PPM BTB	PPU/GPC	GPU/GPU Hydro
Please note that all the DEIF-specific objects only have one instance, the instance number 1.																		
								reactive energy counter day [kVArh]										
		x				x		RMAINS, import, reactive energy counter day [kVArh]		x								
		x				x		RBA, import, reactive energy counter day [kVArh]			x					x		
		x				x		RSC, import, reactive energy counter day [kVArh]							x			
0x64	37	x				x		RGEN, import, reactive energy counter month [kVArh]	x			x	x	x			x	x
		x				x		RMAINS, import, reactive energy counter month [kVArh]		x								
		x				x		RBA, import, reactive energy counter month [kVArh]			x					x		
		x				x		RSC, import, reactive energy counter month [kVArh]							x			

Class ID	Attribute ID	Type						Attribute name	Product									
		Read only	Write only	Signed	Word	Double word	Bit		AGC	AGC mains	AGC bus tie	PPM DG	PPM EDG	PPM SHAFT	PPM SHORE	PPM BTB	PPU/GPC	GPU/GPU Hydro
Please note that all the DEIF-specific objects only have one instance, the instance number 1.																		
0x64	38	x				x		RGEN, import, reactive energy counter week [kVArh]	x			x	x	x			x	x
		x				x		RMAINS, import, reactive energy counter week [kVArh]		x								
		x				x		RBA, import, reactive energy counter week [kVArh]			x					x		
		x				x		RSC, import, reactive energy counter week [kVArh]							x			
0x64	39	x				x		RGEN, import, reactive energy counter total [kVArh]	x			x	x	x			x	x
		x				x		RMAINS, import, reactive energy counter total [kVArh]		x								
		x				x		RBA, import, reactive energy counter total [kVArh]			x					x		
		x				x		RSC, import, reactive energy counter total [kVArh]							x			
0x64	40	x				x		RGEN, import, active	x			x	x	x			x	x

Class ID	Attribute ID	Type						Attribute name	Product									
		Read only	Write only	Signed	Word	Double word	Bit		AGC	AGC mains	AGC bus tie	PPM DG	PPM EDG	PPM SHAFT	PPM SHORE	PPM BTB	PPU/GPC	GPU/GPU Hydro
Please note that all the DEIF-specific objects only have one instance, the instance number 1.																		
								energy counter day [kWh]										
		x				x		RMAINS, import, active energy counter day [kWh]		x								
		x				x		RBA, import, active energy counter day [kWh]			x					x		
		x				x		RSC, import, active energy counter day [kWh]							x			
0x64	41	x				x		RGEN, import, active energy counter month [kWh]	x			x	x	x			x	x
		x				x		RMAINS, import, active energy counter month [kWh]		x								
		x				x		RBA, import, active energy counter month [kWh]			x					x		
		x				x		RSC, import, active energy counter month [kWh]							x			
0x64	42	x				x		RGEN, import, active energy counter week	x			x	x	x			x	x

Class ID	Attribute ID	Type						Attribute name	Product									
		Read only	Write only	Signed	Word	Double word	Bit		AGC	AGC mains	AGC bus tie	PPM DG	PPM EDG	PPM SHAFT	PPM SHORE	PPM BTB	PPU/GPC	GPU/GPU Hydro
Please note that all the DEIF-specific objects only have one instance, the instance number 1.
								[kWh]										
		x				x		RMAINS, import, active energy counter week [kWh]		x								
		x				x		RBA, import, active energy counter week [kWh]			x					x		
		x				x		RSC, import, active energy counter week [kWh]							x			
0x64	43	x				x		RGEN, import, active energy counter total [kWh]	x			x	x	x			x	x
		x				x		RMAINS, import, active energy counter total [kWh]		x								
		x				x		RBA, import, active energy counter total [kWh]			x					x		
		x				x		RSC, import, active energy counter total [kWh]							x			
0x64	44	x		x	x			PF, Generator PF [CosPhi/100]	x			x	x	x			x	x
		x		x	x			PF, Mains PF		x								

Class ID	Attribute ID	Type						Attribute name	Product									
		Read only	Write only	Signed	Word	Double word	Bit		AGC	AGC mains	AGC bus tie	PPM DG	PPM EDG	PPM SHAFT	PPM SHORE	PPM BTB	PPU/GPC	GPU/GPU Hydro
Please note that all the DEIF-specific objects only have one instance, the instance number 1.																		
								[CosPhi/100]										
		x		x	x			PF, Bus A PF [CosPhi/100]			x					x		
		x		x	x			PF, Shore PF [CosPhi/100]							x			
0x64	45	x		x	x			CosPhi [CosPhi/100]	x	x	x							
0x64	46	x			x			CosPhi type	x	x	x							
0x64	47	x				x		Pulse counter 1	x	x	x							
0x64	48	x				x		Pulse counter 2	x	x	x							
0x64	49	x			x			Demand of peak current 1	x	x	x							
0x64	50	x			x			Demand of peak current 2	x	x	x							
0x64	51	x			x			Demand of peak current 3	x	x	x							
0x64	52	x			x			Demand of of avg. peak current 1	x	x	x							
0x64	53	x			x			Demand of of avg. peak current 2	x	x	x							
0x64	54	x			x			Demand of of avg. peak current 3	x	x	x							
0x64	55	x			x			Bit 8 = DG Hz/V OK, timer expired	x			x	x				x	x

Bus B - (0x65)

Class ID	Attribute ID	Type						Attribute name	Product									
		Read only	Write only	Signed	Word	Double word	Bit		AGC	AGC mains	AGC bus tie	PPM DG	PPM EDG	PPM SHAFT	PPM SHORE	PPM BTB	PPU/GPC	GPU/GPU Hydro
Please note that all the DEIF-specific objects only have one instance, the instance number 1.																		
0x65	1	x			x			U BB L1-L2 [V]	x	x	x	x	x	x	x	x	x	x
0x65	2	x			x			U BB L2-L3 [V]	x	x	x	x	x	x	x	x	x	x
0x65	3	x			x			U BB L3-L1 [V]	x	x	x	x	x	x	x	x	x	x
0x65	4	x			x			V BB L1 [V]	x	x	x	x	x	x	x	x	x	x
0x65	5	x			x			V BB L2 [V]	x	x	x	x	x	x	x	x	x	x
0x65	6	x			x			V BB L3 [V]	x	x	x	x	x	x	x	x	x	x
0x65	7	x			x			f BB L1 [Hz/100]	x	x	x	x	x	x	x	x	x	x
0x65	8	x			x			f BB L2 [Hz/100]	x	x	x	x	x	x	x	x	x	x
0x65	9	x			x			f BB L3 [Hz/100]	x	x	x	x	x	x	x	x	x	x
0x65	10	x		x	x			Phi BB L1-L2, phase angle [Deg/10]	x	x	x	x	x	x	x	x	x	x
0x65	11	x		x	x			Phi BB L2-L3, phase angle [Deg/10]	x	x	x	x	x	x	x	x	x	x
0x65	12	x		x	x			Phi BB L3-L1, phase angle [Deg/10]	x	x	x	x	x	x	x	x	x	x
0x65	13	x		x	x			Phi BB L1-BA L1, phase angle [Deg/10]	x	x	x	x	x	x	x	x	x	x
0x65	14	x		x	x			Phi BB L2-BA L2, phase angle [Deg/10]	x	x	x	x	x	x	x	x	x	x

Class ID	Attribute ID	Type						Attribute name	Product									
		Read only	Write only	Signed	Word	Double word	Bit		AGC	AGC mains	AGC bus tie	PPM DG	PPM EDG	PPM SHAFT	PPM SHORE	PPM BTB	PPU/GPC	GPU/GPU Hydro
Please note that all the DEIF-specific objects only have one instance, the instance number 1.																		
0x65	15	x		x	x			Phi BB L3-BA L3, phase angle [Deg/10]	x	x	x	x	x	x	x	x	x	x
0x65	16	x			x			Bit 13 = BB Hz/V OK	x	x	x	x	x	x	x	x	x	x

Breaker A - (0x66)

Class ID	Attribute ID	Type						Attribute name	Product									
		Read only	Write only	Signed	Word	Double word	Bit		AGC	AGC mains	AGC bus tie	PPM DG	PPM EDG	PPM SHAFT	PPM SHORE	PPM BTB	PPU/GPC	GPU/GPU Hydro
Please note that all the DEIF-specific objects only have one instance, the instance number 1.																		
0x66	1	x			x			MBoper, No. of MB operations	x			x	x				x	x
		x			x			TBoper, No. of TB operations		x								
								SGBoper, No. of SGB operations			x					x		
0x66	2	x					x	GB position on	x			x	x				x	x
		x					x	TB position on		x								
		x					x	BTB position on			x					x		
0x66	3		x				x	Remote GB on	x			x	x				x	x
			x				x	Remote TB on		x								
			x				x	Remote BTB on			x					x		
0x66	4		x				x	Remote GB off	x			x	x				x	x
			x				x	Remote TB off		x								
			x				x	Remote BTB off			x					x		
0x66	5	x			x			Bit 5 = GB synchronising	x			x	x				x	x
		x			x			Bit 5 = TB synchronising		x								

Class ID	Attribute ID	Type						Attribute name	Product									
		Read only	Write only	Signed	Word	Double word	Bit		AGC	AGC mains	AGC bus tie	PPM DG	PPM EDG	PPM SHAFT	PPM SHORE	PPM BTB	PPU/GPC	GPU/GPU Hydro
Please note that all the DEIF-specific objects only have one instance, the instance number 1.
		x			x			Bit 5 = BTB synchronising			x					x		
		x			x			Bit 11 = GB position OFF	x			x	x				x	x
		x			x			Bit 11 = TB position OFF		x								
		x			x			Bit 11 = BTB position OFF			x					x		

Breaker B - (0x67)

Class ID	Attribute ID	Read only	Write only	Signed	Word	Double word	Bit	Attribute name	AGC	AGC mains	AGC bus tie	PPM DG	PPM EDG	PPM SHAFT	PPM SHORE	PPM BTB	PPU/GPC	GPU/GPU Hydro
						Type							**Product**					
Please note that all the DEIF-specific objects only have one instance, the instance number 1.																		
0x67	1	x			x			GBoper, No. of GB operations	x			x	x				x	x
		x			x			TBoper, No. of TB operations		x								
		x			x			BTBoper, No. of BTB operations			x					x		
0x67	2	x					x	MB position on	x	x								
		x					x	SGB position on						x				
		x					x	SCB position on							x			
		x					x	EDG-TB position on					x					
0x67	3		x				x	MB/SG/SC/EDG TB ON	x	x			x	x	x			
0x67	4		x				x	MB/SG/SC/EDG TB OFF	x	x			x	x	x			
0x67	5	x			x			Bit 12 = MB position OFF	x	x								
		x			x			Bit 12 = SGB position OFF						x				
		x			x			Bit 12 = SCB position OFF							x			

Class ID	Attribute ID	Type						Attribute name	Product									
		Read only	Write only	Signed	Word	Double word	Bit		AGC	AGC mains	AGC bus tie	PPM DG	PPM EDG	PPM SHAFT	PPM SHORE	PPM BTB	PPU/GPC	GPU/GPU Hydro
Please note that all the DEIF-specific objects only have one instance, the instance number 1.																		
		x			x			Bit 12 = TB position OFF								x		
		x			x			Bit 14 = MB synchronising	x									

Engine - (0x68)

Class ID	Attribute ID	Read only	Write only	Signed	Word	Double word	Bit	Attribute name	AGC	AGC mains	AGC bus tie	PPM DG	PPM EDG	PPM SHAFT	PPM SHORE	PPM BTB	PPU/GPC	GPU/GPU Hydro
								Type → / **Product** →										
								Please note that all the DEIF-specific objects only have one instance, the instance number 1.										
0x68	1	x				x		Absolute running hours	x			x	x	x			x	x
0x68	2	x				x		Relative running hours	x			x	x	x				
0x68	3	x			x			Running mn. counter, shutdown override	x				x				x	x
0x68	4	x			x			Running hour counter, shutdown override	x				x				x	x
0x68	5	x			x			Start attempts	x			x	x				x	x
0x68	6	x			x			Service timer 1 run. hours	x			x	x	x			x	x
0x68	7	x			x			Service timer 1 run. days	x			x	x	x			x	x
0x68	8	x			x			Service timer 2 run. hours	x			x	x	x			x	x
0x68	9	x			x			Service timer 2 run. days	x			x	x	x			x	x
0x68	10	x			x			RPM	x			x	x	x			x	x
0x68	11	x				x		Running hours load profile	x									

		Type							Product									
Class ID	Attribute ID	Read only	Write only	Signed	Word	Double word	Bit	Attribute name	AGC	AGC mains	AGC bus tie	PPM DG	PPM EDG	PPM SHAFT	PPM SHORE	PPM BTB	PPU/GPC	GPU/GPU Hydro
Please note that all the DEIF-specific objects only have one instance, the instance number 1.																		
0x68	12	x			x			EIC speed [RPM]	x			x	x				x	x
0x68	13	x			x			EIC coolant temp. [deg] [F] [1/1 or 1/10]	x			x	x				x	x
0x68	14	x			x			EIC oil pressure [bar/100] [psi/100]	x			x	x				x	x
0x68	15	x			x			EIC no. of faults	x			x	x				x	x
0x68	16	x			x			EIC oil temp. [deg/10] [F/10]	x			x	x				x	x
0x68	17	x			x			EIC fuel temp. [deg] [F] [1/1 or 1/10]	x			x	x				x	x
0x68	18	x			x			EIC intake manifold #1 P [bar/100] [psi/100]	x			x	x				x	x
0x68	19	x			x			EIC air inlet temp. [deg] [F]	x			x	x				x	x
0x68	20	x			x			EIC coolant level [%/10]	x			x	x				x	x
0x68	21	x			x			EIC fuel rate [L/h] [1/1 or 1/10]	x			x	x				x	x
0x68	22	x			x			EIC charge air press. [bar/100] [psi/100]	x			x	x				x	x
0x68	23	x			x			EIC intake manifold 1 T [deg] [F] [1/1 or 1/10]	x			x	x				x	x

Class ID	Attribute ID	Type						Attribute name	Product									
		Read only	Write only	Signed	Word	Double word	Bit		AGC	AGC mains	AGC bus tie	PPM DG	PPM EDG	PPM SHAFT	PPM SHORE	PPM BTB	PPU/GPC	GPU/GPU Hydro
Please note that all the DEIF-specific objects only have one instance, the instance number 1.																		
0x68	24	x			x			EIC d.d. % torque [%]	x			x	x				x	x
0x68	25	x			x			EIC actual % torque [%]	x			x	x				x	x
0x68	26	x			x			EIC acc. pedal pos. [%]	x			x	x				x	x
0x68	27	x			x			EIC % load, c. speed [%]	x			x	x				x	x
0x68	28	x			x			EIC air inlet pressure [bar/100] [psi/100]	x			x	x				x	x
0x68	29	x			x			EIC exhaust gas temp. [deg/10] [F/10]	x			x	x				x	x
0x68	30	x			x			EIC engine hours [H]	x			x	x				x	x
0x68	31	x			x			EIC oil filter diff. press. [bar/100] [psi/100]	x			x	x				x	x
0x68	32	x			x			EIC battery voltage [V]	x			x	x				x	x
0x68	33	x			x			EIC fuel del. press. [bar/100] [psi/100]	x			x	x				x	x
0x68	34	x			x			EIC oil level [%]	x			x	x				x	x
0x68	35	x			x			EIC crankcase press. [bar/100] [psi/100]	x			x	x				x	x
0x68	36	x			x			EIC coolant pressure [bar/100] [psi/100]	x			x	x				x	x

Class ID	Attribute ID	Type						Attribute name	Product									
		Read only	Write only	Signed	Word	Double word	Bit		AGC	AGC mains	AGC bus tie	PPM DG	PPM EDG	PPM SHAFT	PPM SHORE	PPM BTB	PPU/GPC	GPU/GPU Hydro
Please note that all the DEIF-specific objects only have one instance, the instance number 1.																		
0x68	37	x			x			EIC water in fuel [bit] (1 = Yes, 0)	x			x	x				x	x
0x68	38	x			x			EIC turbo oil temp. [deg/10] [F/10]	x			x	x				x	x
0x68	39	x			x			EIC trap inlet [bar/100] [psi/100]	x			x	x				x	x
0x68	40	x			x			EIC Air filter diff. press. [bar/1000] [psi/1000]	x			x	x				x	x
0x68	41	x			x			EIC Cool filter diff. press. [bar/100] [psi/100]	x			x	x				x	x
0x68	42	x			x			EIC Atm press. [bar/100] [psi/100]	x			x	x				x	x
0x68	43	x			x			EIC Ambient air temp. [deg/10] [F/10]	x			x	x				x	x
0x68	44	x			x			EIC exch. temp. A [deg/10] [F/10]	x			x	x				x	x
0x68	45	x			x			EIC exch. temp. B [deg/10] [F/10]	x			x	x				x	x
0x68	46	x			x			EIC Winding 1 temp. [deg] [F]	x			x	x				x	x
0x68	47	x			x			EIC Winding 2 temp. [deg] [F]	x			x	x				x	x
0x68	48	x			x			EIC Winding 3 temp.	x			x	x				x	x

Class ID	Attribute ID	Type						Attribute name	Product									
		Read only	Write only	Signed	Word	Double word	Bit		AGC	AGC mains	AGC bus tie	PPM DG	PPM EDG	PPM SHAFT	PPM SHORE	PPM BTB	PPU/GPC	GPU/GPU Hydro
Please note that all the DEIF-specific objects only have one instance, the instance number 1.
								[deg] [F]										
0x68	49	x			x			EIC Turbo 1 compr. outlet press. [bar/10] [psi/10]	x			x	x				x	x
0x68	50	x			x			EIC Intercooler temp. [deg/10] [F/10]	x			x	x				x	x
0x68	51	x			x			EIC trip fuel_gaseous [kg]	x			x	x				x	x
0x68	52	x			x			EIC total fuel used_gaseous [ton]	x			x	x				x	x
0x68	53	x			x			EIC engine trip fuel [L]	x			x	x				x	x
0x68	54	x			x			EIC engine total fuel used [kL]	x			x	x				x	x
0x68	55	x			x			EIC trip average fuel rate [L/h]	x			x	x				x	x
0x68	56	x			x			EIC nominal power [kW]	x			x	x				x	x
0x68	57	x				x		EIC trip fuel liquid [L] [1/2 or 1/10]	x			x	x				x	x
0x68	58	x				x		EIC total fuel liquid [L] [1/2 or 1/10]	x			x	x				x	x
0x68	59	x				x		EIC mean trip fuel consumption [L/h] [1/1000]	x			x	x				x	x

Class ID	Attribute ID	Read only	Write only	Signed	Word	Double word	Bit	Attribute name	AGC	AGC mains	AGC bus tie	PPM DG	PPM EDG	PPM SHAFT	PPM SHORE	PPM BTB	PPU/GPC	GPU/GPU Hydro
				Type							**Product**							
								Please note that all the DEIF-specific objects only have one instance, the instance number 1.										
0x68	60	x			x			EIC engine power [kW]	x			x	x				x	x
0x68	61	x			x			EIC intake manifold #1 absolute [bar/100] [psi/100]	x			x	x				x	x
0x68	62	x			x			EIC Air filter diff. pressure [bar/100] [psi/100]	x			x	x				x	x
0x68	63	x			x			EIC Fuel supply pump inlet [bar/100] [psi/100]	x			x	x				x	x
0x68	64	x			x			EIC Fuel filter diff. press. (suction side) [bar/100] [psi/100]	x			x	x				x	x
0x68	65	x			x			EIC Fuel filter diff. pressure [bar/100] [psi/100]	-4									
0x68	66	x			x			EIC Speed demand source	-4									
0x68	67	x			x			EIC lube oil pressure LO limit [mbar/100]	-4									
0x68	68	x			x			EIC lube oil pressure LOLO limit [mbar/100]	-4									
0x68	69	x			x			EIC fuel pressure	-4									

Class ID	Attribute ID	Type						Attribute name	Product									
		Read only	Write only	Signed	Word	Double word	Bit		AGC	AGC mains	AGC bus tie	PPM DG	PPM EDG	PPM SHAFT	PPM SHORE	PPM BTB	PPU/GPC	GPU/GPU Hydro
Please note that all the DEIF-specific objects only have one instance, the instance number 1.
								[bar/100]										
0x68	70	x			x			EIC coolant limit HI [deg/10] [F/10]	-4									
0x68	71	x			x			EIC coolant limit HIHI [deg/10] [F/10]	-4									
0x68	72	x			x			EIC intercooler coolant [deg/10] [F/10]	-4									
0x68	73	x			x			EIC ECU temperature [deg/10] [F/10]	-4									
0x68	74	x			x			EIC actual droop [%/10]	-4									
0x68	75	x			x			EIC act. inject. quantity [%/10]	-4									
0x68	76	x					x	Remote start	x			x	x				x	x
0x68	77	x					x	Remote stop	x			x	x				x	x
0x68	78	x			x			Bit 7 = Running detect. timer expired	x			x	x	x			x	x

Digital inputs - (0x6E)

Class ID	Attribute ID	Read only	Write only	Signed	Word	Double word	Bit	Attribute name	AGC	AGC mains	AGC bus tie	PPM DG	PPM EDG	PPM SHAFT	PPM SHORE	PPM BTB	PPU/GPC	GPU/GPU Hydro
				Type				**Attribute name**						**Product**				
								Please note that all the DEIF-specific objects only have one instance, the instance number 1.										
0x6E	1	x					x	Digital input	97	97	97	97	97	97	97	97	97	97
0x6E	2	x					x	Digital input	96	96	96	96	96	96	96	96	96	96
0x6E	3	x					x	Digital input	95	95	95	95	95	95	95	95	95	95
0x6E	4	x					x	Digital input	94	94	94	94	94	94	94	94	94	94
0x6E	5	x					x	Digital input	93	93	93	93	93	93	93	93	93	93
0x6E	6	x					x	Digital input	92	92	92	92	92	92	92	92	92	92
0x6E	7	x					x	Digital input	91	91	91	91	91	91	91	91	91	91
0x6E	8	x					x	Digital input	133	133	133	133	133	133	133	133	133	133
0x6E	9	x					x	Digital input	132	132	132	132	132	132	132	132	132	132
0x6E	10	x					x	Digital input	131	131	131	131	131	131	131	131	131	131
0x6E	11	x					x	Digital input	130	130	130	130	130	130	130	130	130	130
0x6E	12	x					x	Digital input	129	129	129	129	129	129	129	129	129	129
0x6E	13	x					x	Digital input	128	128	128	128	128	128	128	128	128	128
0x6E	14	x					x	Digital input	127	127	127	127	127	127	127	127	127	127
0x6E	15 to 28							Reserved										
0x6E	29	x					x	Digital input	43	43	43	43	43	43	43	43	43	43
0x6E	30	x					x	Digital input	44	44	44	44	44	44	44	44	44	44

Class ID	Attribute ID	Type						Attribute name	Product									
		Read only	Write only	Signed	Word	Double word	Bit		AGC	AGC mains	AGC bus tie	PPM DG	PPM EDG	PPM SHAFT	PPM SHORE	PPM BTB	PPU/GPC	GPU/GPU Hydro
Please note that all the DEIF-specific objects only have one instance, the instance number 1.																		
0x6E	31	x					x	Digital input	45	45	45	45	45	45	45	45	45	45
0x6E	32	x					x	Digital input	46	46	46	46	46	46	46	46	46	46
0x6E	33	x					x	Digital input	47	47	47	47	47	47	47	47	47	47
0x6E	34	x					x	Digital input	48	48	48	48	48	48	48	48	48	48
0x6E	35	x					x	Digital input	49	49	49	49	49	49	49	49	49	49
0x6E	36	x					x	Digital input	50	50	50	50	50	50	50	50	50	50
0x6E	37	x					x	Digital input	51	51	51	51	51	51	51	51	51	51
0x6E	38	x					x	Digital input	52	52	52	52	52	52	52	52	52	52
0x6E	39	x					x	Digital input	53	53	53	53	53	53	53	53	53	53
0x6E	40	x					x	Digital input	54	54	54	54	54	54	54	54	54	54
0x6E	41	x					x	Digital input	55	55	55	55	55	55	55	55	55	55
0x6E	42	x					x	Digital input	23	23	23	23	23	23	23	23	23	23
0x6E	43	x					x	Digital input	24	24	24	24	24	24	24	24	24	24
0x6E	44	x					x	Digital input	25	25	25	25	25	25	25	25	25	25
0x6E	45	x					x	Digital input	26	26	26	26	26	26	26	26	26	26
0x6E	46	x					x	Digital input	27	27	27	27	27	27	27	27	27	27
0x6E	47 to 83							Reserved										
0x6E	84	x					x	Digital input (emer. stop)	118	118	118	118	118	118	118	118	118	118
0x6E	85	x					x	Digital input	117	117	117	117	117	117	117	117	117	117

Class ID	Attribute ID	Type						Attribute name	Product									
		Read only	Write only	Signed	Word	Double word	Bit		AGC	AGC mains	AGC bus tie	PPM DG	PPM EDG	PPM SHAFT	PPM SHORE	PPM BTB	PPU/GPC	GPU/GPU Hydro
Please note that all the DEIF-specific objects only have one instance, the instance number 1.																		
0x6E	86	x					x	Digital input	116	116	116	116	116	116	116	116	116	116
0x6E	87	x					x	Digital input	115	115	115	115	115	115	115	115	115	115
0x6E	88	x					x	Digital input	114	114	114	114	114	114	114	114	114	114
0x6E	89	x					x	Digital input	113	113	113	113	113	113	113	113	113	113
0x6E	90	x					x	Digital input	112	112	112	112	112	112	112	112	112	112
0x6E	91	x					x	Stop coil superv. (M4)	123	123	123	123	123	123	123	123	123	123
0x6E	92	x					x	Multi-func. input cable fail.	108	108	108	108	108	108	108	108	108	108
0x6E	93	x					x	Multi-func. input cable fail.	105	105	105	105	105	105	105	105	105	105
0x6E	94	x					x	Multi-func. input cable fail.	102	102	102	102	102	102	102	102	102	102
0x6E	95	x					x	External digital input	1	1	1	1	1	1	1	1	1	1
0x6E	96	x					x	External digital input	2	2	2	2	2	2	2	2	2	2
0x6E	97	x					x	External digital input	3	3	3	3	3	3	3	3	3	3
0x6E	98	x					x	External digital input	4	4	4	4	4	4	4	4	4	4
0x6E	99	x					x	External digital input	5	5	5	5	5	5	5	5	5	5
0x6E	100	x					x	External digital input	6	6	6	6	6	6	6	6	6	6
0x6E	101	x					x	External digital input	7	7	7	7	7	7	7	7	7	7
0x6E	102	x					x	External digital input	8	8	8	8	8	8	8	8	8	8

Class ID	Attribute ID	Type						Attribute name	Product									
		Read only	Write only	Signed	Word	Double word	Bit		AGC	AGC mains	AGC bus tie	PPM DG	PPM EDG	PPM SHAFT	PPM SHORE	PPM BTB	PPU/GPC	GPU/GPU Hydro
Please note that all the DEIF-specific objects only have one instance, the instance number 1.																		
0x6E	103	x					x	External digital input	9	9	9	9	9	9	9	9	9	9
0x6E	104	x					x	External digital input	10	10	10	10	10	10	10	10	10	10
0x6E	105	x					x	External digital input	11	11	11	11	11	11	11	11	11	11
0x6E	106	x					x	External digital input	12	12	12	12	12	12	12	12	12	12
0x6E	107	x					x	External digital input	13	13	13	13	13	13	13	13	13	13
0x6E	108	x					x	External digital input	14	14	14	14	14	14	14	14	14	14
0x6E	109	x					x	External digital input	15	15	15	15	15	15	15	15	15	15
0x6E	110	x					x	External digital input	16	16	16	16	16	16	16	16	16	16

Digital outputs - (0x6F)

Class ID	Attribute ID	Read only	Write only	Signed	Word	Double word	Bit	Attribute name	AGC	AGC mains	AGC bus tie	PPM DG	PPM EDG	PPM SHAFT	PPM SHORE	PPM BTB	PPU/GPC	GPU/GPU Hydro
								Type						**Product**				
Please note that all the DEIF-specific objects only have one instance, the instance number 1.																		
0x6F	1	x					x	Relay	65	65	65	65	65	65	65	65	65	65
0x6F	2	x					x	Relay	67	67	67	67	67	67	67	67	67	67
0x6F	3	x					x	Relay	69	69	69	69	69	69	69	69	69	69
0x6F	4	x					x	Relay	71	71	71	71	71	71	71	71	71	71
0x6F	5	x					x	Relay	132	132	132	132	132	132	132	132	132	132
0x6F	6	x					x	Relay	130	130	130	130	130	130	130	130	130	130
0x6F	7	x					x	Relay	128	128	128	128	128	128	128	128	128	128
0x6F	8	x					x	Relay	126	126	126	126	126	126	126	126	126	126
0x6F	9	x					x	Relay	96	96	96	96	96	96	96	96	96	96
0x6F	10	x					x	Relay	94	94	94	94	94	94	94	94	94	94
0x6F	11	x					x	Relay	92	92	92	92	92	92	92	92	92	92
0x6F	12	x					x	Relay	90	90	90	90	90	90	90	90	90	90
0x6F	13 to 16							Reserved										
0x6F	17	x					x	Relay	57	57	57	57	57	57	57	57	57	57
0x6F	18	x					x	Relay	59	59	59	59	59	59	59	59	59	59
0x6F	19	x					x	Relay	61	61	61	61	61	61	61	61	61	61

Class ID	Attribute ID	Type						Attribute name	Product									
		Read only	Write only	Signed	Word	Double word	Bit		AGC	AGC mains	AGC bus tie	PPM DG	PPM EDG	PPM SHAFT	PPM SHORE	PPM BTB	PPU/GPC	GPU/GPU Hydro
Please note that all the DEIF-specific objects only have one instance, the instance number 1.																		
0x6F	20	x					x	Relay	63	63	63	63	63	63	63	63	63	63
0x6F	21 to 25							Reserved										
0x6F	26	x					x	Relay	5	5	5	5	5	5	5	5	5	5
0x6F	27	x					x	Relay	8	8	8	8	8	8	8	8	8	8
0x6F	28	x					x	Relay	11	11	11	11	11	11	11	11	11	11
0x6F	29	x					x	Relay	14	14	14	14	14	14	14	14	14	14
0x6F	30	x					x	Relay	17	17	17	17	17	17	17	17	17	17
0x6F	31	x					x	Relay	T20	T20	T20	T20	T20	T20	T20	T20	T20	T20
0x6F	32	x					x	Relay	T21	T21	T21	T21	T21	T21	T21	T21	T21	T21
0x6F	33 to 49							Reserved										
0x6F	50	x					x	Run. coil	x	x	x	x	x	x	x	x	x	x
0x6F	51	x					x	Start prepare	x	x	x	x	x	x	x	x	x	x
0x6F	52	x					x	Start relay (crank)	x	x	x	x	x	x	x	x	x	x
0x6F	53	x					x	Stop coil	x	x	x	x	x	x	x	x	x	x
0x6F	54	x					x	LED CAN B	x	x	x	x	x	x	x	x	x	x
0x6F	55	x					x	LED CAN A	x	x	x	x	x	x	x	x	x	x
0x6F	56	x					x	LED USB	x	x	x	x	x	x	x	x	x	x
0x6F	57	x					x	External digital output	1	1	1	1	1	1	1	1	1	1
0x6F	58	x					x	External digital output	2	2	2	2	2	2	2	2	2	2

Class ID	Attribute ID	Type						Attribute name	Product									
		Read only	Write only	Signed	Word	Double word	Bit		AGC	AGC mains	AGC bus tie	PPM DG	PPM EDG	PPM SHAFT	PPM SHORE	PPM BTB	PPU/GPC	GPU/GPU Hydro
Please note that all the DEIF-specific objects only have one instance, the instance number 1.																		
0x6F	59	x					x	External digital output	3	3	3	3	3	3	3	3	3	3
0x6F	60	x					x	External digital output	4	4	4	4	4	4	4	4	4	4
0x6F	61	x					x	External digital output	5	5	5	5	5	5	5	5	5	5
0x6F	62	x					x	External digital output	6	6	6	6	6	6	6	6	6	6
0x6F	63	x					x	External digital output	7	7	7	7	7	7	7	7	7	7
0x6F	64	x					x	External digital output	8	8	8	8	8	8	8	8	8	8
0x6F	65	x					x	External digital output	9	9	9	9	9	9	9	9	9	9
0x6F	66	x					x	External digital output	10	10	10	10	10	10	10	10	10	10
0x6F	67	x					x	External digital output	11	11	11	11	11	11	11	11	11	11
0x6F	68	x					x	External digital output	12	12	12	12	12	12	12	12	12	12
0x6F	69	x					x	External digital output	13	13	13	13	13	13	13	13	13	13
0x6F	70	x					x	External digital output	14	14	14	14	14	14	14	14	14	14
0x6F	71	x					x	External digital output	15	15	15	15	15	15	15	15	15	15
0x6F	72	x					x	External digital output	16	16	16	16	16	16	16	16	16	16

Analogue inputs - (0x69)

Class ID	Attribute ID	Read only	Write only	Signed	Word	Double word	Bit	Attribute name	AGC	AGC mains	AGC bus tie	PPM DG	PPM EDG	PPM SHAFT	PPM SHORE	PPM BTB	PPU/GPC	GPU/GPU Hydro
						Type							**Product**						
Please note that all the DEIF-specific objects only have one instance, the instance number 1.																			
0x69	1	x			x			Multi input 102 unscaled	x	x	x	x	x	x	x	x	x	x
0x69	2	x			x			Multi input 105 unscaled	x	x	x	x	x	x	x	x	x	x
0x69	3	x			x			Multi input 108 unscaled	x	x	x	x	x	x	x	x	x	x
0x69	4	x			x			Multi input 102 scaled	x	x	x	x	x	x	x	x	x	x
0x69	5	x			x			Multi input 105 scaled	x	x	x	x	x	x	x	x	x	x
0x69	6	x			x			Multi input 108 scaled	x	x	x	x	x	x	x	x	x	x
0x69	7	x			x			4-20 mA input 91 scaled	x	x	x	x	x	x	x	x	x	x
0x69	8	x			x			4-20 mA input 93 scaled	x	x	x	x	x	x	x	x	x	x
0x69	9	x			x			4-20 mA input 95 scaled	x	x	x	x	x	x	x	x	x	x
0x69	10	x			x			4-20 mA input 97 scaled	x	x	x	x	x	x	x	x	x	x
0x69	11	x			x			Analogue input 127	x	x	x	x	x	x	x	x		
0x69	12	x			x			Analogue input 129	x	x	x	x	x	x	x	x		
0x69	13	x			x			Analogue input 131	x	x	x	x	x	x	x	x		

Class ID	Attribute ID	Type						Attribute name	Product									
		Read only	Write only	Signed	Word	Double word	Bit		AGC	AGC mains	AGC bus tie	PPM DG	PPM EDG	PPM SHAFT	PPM SHORE	PPM BTB	PPU/GPC	GPU/GPU Hydro
Please note that all the DEIF-specific objects only have one instance, the instance number 1.																		
0x69	14	x			x			Analogue input 133	x	x	x	x	x	x	x	x		
0x69	15	x			x			External analogue input 1 (unscaled)	x	x	x	x	x	x	x	x	x	x
0x69	16	x			x			External analogue input 2 (unscaled)	x	x	x	x	x	x	x	x	x	x
0x69	17	x			x			External analogue input 3 (unscaled)	x	x	x	x	x	x	x	x	x	x
0x69	18	x			x			External analogue input 4 (unscaled)	x	x	x	x	x	x	x	x	x	x
0x69	19	x			x			External analogue input 5 (unscaled)	x	x	x	x	x	x	x	x	x	x
0x69	20	x			x			External analogue input 6 (unscaled)	x	x	x	x	x	x	x	x	x	x
0x69	21	x			x			External analogue input 7 (unscaled)	x	x	x	x	x	x	x	x	x	x
0x69	22	x			x			External analogue input 8 (unscaled)	x	x	x	x	x	x	x	x	x	x

Power management - (0x6A)

Class ID	Attribute ID	Type						Attribute name	Product									
		Read only	Write only	Signed	Word	Double word	Bit		AGC	AGC mains	AGC bus tie	PPM DG	PPM EDG	PPM SHAFT	PPM SHORE	PPM BTB	PPU/GPC	GPU/GPU Hydro
Please note that all the DEIF-specific objects only have one instance, the instance number 1.																		
0x6A	1	x			x			Total power	x			x	x	x	x	x		
0x6A	2	x			x			Available power	x			x	x	x	x	x		
0x6A	3	x			x			Total nominal power	x			x	x	x	x	x		
0x6A	4	x			x			Total genset power	x			x	x	x	x	x		
0x6A	5	x			x			Total reactive power	x			x	x	x	x	x		
0x6A	6	x			x			Number of gensets	x			x	x	x	x	x		
0x6A	7	x			x			Mains selection	x									
0x6A	8	x			x			Load-dependent stop	x			x						
0x6A	9	x			x			Load-dependent start	x			x						
0x6A	10	x			x			Stop genset calculation	x			x						
0x6A	11	x			x			Nominal power genset	1			1						
0x6A	12	x			x			Nominal power genset	2			2						
0x6A	13	x			x			Nominal power genset	3			3						
0x6A	14	x			x			Nominal power genset	4			4						

Class ID	Attribute ID	Type						Attribute name	Product									
		Read only	Write only	Signed	Word	Double word	Bit		AGC	AGC mains	AGC bus tie	PPM DG	PPM EDG	PPM SHAFT	PPM SHORE	PPM BTB	PPU/GPC	GPU/GPU Hydro
Please note that all the DEIF-specific objects only have one instance, the instance number 1.
0x6A	15	x			x			Nominal power genset	5			5						
0x6A	16	x			x			Nominal power genset	6			6						
0x6A	17	x			x			Nominal power genset	7			7						
0x6A	18	x			x			Nominal power genset	8			8						
0x6A	19	x			x			Nominal power genset	9			9						
0x6A	20	x			x			Nominal power genset	10			10						
0x6A	21	x			x			Nominal power genset	11			11						
0x6A	22	x			x			Nominal power genset	12			12						
0x6A	23	x			x			Nominal power genset	13			13						
0x6A	24	x			x			Nominal power genset	14			14						
0x6A	25	x			x			Nominal power genset	15			15						
0x6A	26	x			x			Nominal power genset	16			16						
0x6A	27	x			x			Power genset	1			1						

Class ID	Attribute ID	Type						Attribute name	Product									
		Read only	Write only	Signed	Word	Double word	Bit		AGC	AGC mains	AGC bus tie	PPM DG	PPM EDG	PPM SHAFT	PPM SHORE	PPM BTB	PPU/GPC	GPU/GPU Hydro
Please note that all the DEIF-specific objects only have one instance, the instance number 1.																		
0x6A	28	x			x			Power genset	2			2						
0x6A	29	x			x			Power genset	3			3						
0x6A	30	x			x			Power genset	4			4						
0x6A	31	x			x			Power genset	5			5						
0x6A	32	x			x			Power genset	6			6						
0x6A	33	x			x			Power genset	7			7						
0x6A	34	x			x			Power genset	8			8						
0x6A	35	x			x			Power genset	9			9						
0x6A	36	x			x			Power genset	10			10						
0x6A	37	x			x			Power genset	11			11						
0x6A	38	x			x			Power genset	12			12						
0x6A	39	x			x			Power genset	13			13						
0x6A	40	x			x			Power genset	14			14						
0x6A	41	x			x			Power genset	15			15						
0x6A	42	x			x			Power genset	16			16						
0x6A	43	x			x			Reactive power genset	1			1						
0x6A	44	x			x			Reactive power genset	2			2						
0x6A	45	x			x			Reactive power genset	3			3						

Class ID	Attribute ID	Type						Attribute name	Product									
		Read only	Write only	Signed	Word	Double word	Bit		AGC	AGC mains	AGC bus tie	PPM DG	PPM EDG	PPM SHAFT	PPM SHORE	PPM BTB	PPU/GPC	GPU/GPU Hydro
Please note that all the DEIF-specific objects only have one instance, the instance number 1.																		
0x6A	46	x			x			Reactive power genset	4			4						
0x6A	47	x			x			Reactive power genset	5			5						
0x6A	48	x			x			Reactive power genset	6			6						
0x6A	49	x			x			Reactive power genset	7			7						
0x6A	50	x			x			Reactive power genset	8			8						
0x6A	51	x			x			Reactive power genset	9			9						
0x6A	52	x			x			Reactive power genset	10			10						
0x6A	53	x			x			Reactive power genset	11			11						
0x6A	54	x			x			Reactive power genset	12			12						
0x6A	55	x			x			Reactive power genset	13			13						
0x6A	56	x			x			Reactive power genset	14			14						
0x6A	57	x			x			Reactive power genset	15			15						
0x6A	58	x			x			Reactive power	16			16						

Class ID	Attribute ID	Type						Attribute name	Product									
		Read only	Write only	Signed	Word	Double word	Bit		AGC	AGC mains	AGC bus tie	PPM DG	PPM EDG	PPM SHAFT	PPM SHORE	PPM BTB	PPU/GPC	GPU/GPU Hydro
Please note that all the DEIF-specific objects only have one instance, the instance number 1.																		
								genset										
0x6A	59	x			x			Power, mains 1A	x									
0x6A	60	x			x			Power, mains 1B	x									
0x6A	61	x			x			Power, mains 2A	x									
0x6A	62	x			x			Power, mains 2B	x									
0x6A	63	x			x			Reactive power mains 1A	x									
0x6A	64	x			x			Reactive power mains 1B	x									
0x6A	65	x			x			Reactive power mains 2A	x									
0x6A	66	x			x			Reactive power mains 2B	x									
0x6A	67	x			x			Power mains 17	x									
		x			x			Power shaft 17						x				
		x			x			Power shore 17							x			
0x6A	68	x			x			Power mains 18	x									
		x			x			Power shaft 18						x				
		x			x			Power shore 18							x			
0x6A	69	x			x			Power mains 19	x									
		x			x			Power shaft 19						x				

Class ID	Attribute ID	Type						Attribute name	Product									
		Read only	Write only	Signed	Word	Double word	Bit		AGC	AGC mains	AGC bus tie	PPM DG	PPM EDG	PPM SHAFT	PPM SHORE	PPM BTB	PPU/GPC	GPU/GPU Hydro
Please note that all the DEIF-specific objects only have one instance, the instance number 1.
		x			x			Power shore 19							x			
0x6A	70	x			x			Power mains 20	x									
		x			x			Power shaft 20						x				
		x			x			Power shore 20							x			
0x6A	71	x			x			Power mains 21	x									
0x6A	72	x			x			Power mains 22	x									
0x6A	73	x			x			Power mains 23	x									
0x6A	74	x			x			Power mains 24	x									
0x6A	75	x			x			Power mains 25	x									
0x6A	76	x			x			Power mains 26	x									
0x6A	77	x			x			Power mains 27	x									
0x6A	78	x			x			Power mains 28	x									
0x6A	79	x			x			Power mains 29	x									
0x6A	80	x			x			Power mains 30	x									
0x6A	81	x			x			Power mains 31	x									
0x6A	82	x			x			Power mains 32	x									
0x6A	83	x			x			Reactive power mains 17	x									
		x			x			Reactive power shaft 17						x				

Class ID	Attribute ID	Read only	Write only	Signed	Word	Double word	Bit	Attribute name	AGC	AGC mains	AGC bus tie	PPM DG	PPM EDG	PPM SHAFT	PPM SHORE	PPM BTB	PPU/GPC	GPU/GPU Hydro
								Type					**Product**					
Please note that all the DEIF-specific objects only have one instance, the instance number 1.																		
		x			x			Reactive power shore 17							x			
0x6A	84	x			x			Reactive power mains 18	x									
		x			x			Reactive power shaft 18						x				
		x			x			Reactive power shore 18							x			
0x6A	85	x			x			Reactive power mains 19	x									
		x			x			Reactive power shaft 19						x				
		x			x			Reactive power shore 19							x			
0x6A	86	x			x			Reactive power mains 20	x									
		x			x			Reactive power shaft 20						x				
		x			x			Reactive power shore 20							x			
0x6A	87	x			x			Reactive power mains 21	x									
0x6A	88	x			x			Reactive power mains 22	x									
0x6A	89	x			x			Reactive power	x									

Class ID	Attribute ID	Type						Attribute name	Product									
		Read only	Write only	Signed	Word	Double word	Bit		AGC	AGC mains	AGC bus tie	PPM DG	PPM EDG	PPM SHAFT	PPM SHORE	PPM BTB	PPU/GPC	GPU/GPU Hydro
Please note that all the DEIF-specific objects only have one instance, the instance number 1.																		
								mains 23										
0x6A	90	x			x			Reactive power mains 24	x									
0x6A	91	x			x			Reactive power mains 25	x									
0x6A	92	x			x			Reactive power mains 26	x									
0x6A	93	x			x			Reactive power mains 27	x									
0x6A	94	x			x			Reactive power mains 28	x									
0x6A	95	x			x			Reactive power mains 29	x									
0x6A	96	x			x			Reactive power mains 30	x									
0x6A	97	x			x			Reactive power mains 31	x									
0x6A	98	x			x			Reactive power mains 32	x									
0x6A	99	x			x			Power bus tie breaker 33	x							x		
0x6A	100	x			x			Power bus tie breaker 34	x							x		
0x6A	101	x			x			Power bus tie breaker 35	x							x		

Class ID	Attribute ID	Type						Attribute name	Product									
		Read only	Write only	Signed	Word	Double word	Bit		AGC	AGC mains	AGC bus tie	PPM DG	PPM EDG	PPM SHAFT	PPM SHORE	PPM BTB	PPU/GPC	GPU/GPU Hydro
Please note that all the DEIF-specific objects only have one instance, the instance number 1.																		
0x6A	102	x			x			Power bus tie breaker 36	x							x		
0x6A	103	x			x			Power bus tie breaker 37	x							x		
0x6A	104	x			x			Power bus tie breaker 38	x							x		
0x6A	105	x			x			Power bus tie breaker 39	x							x		
0x6A	106	x			x			Power bus tie breaker 40	x							x		
0x6A	107	x			x			Reactive power bus tie breaker 33	x									
0x6A	108	x			x			Reactive power bus tie breaker 34	x									
0x6A	109	x			x			Reactive power bus tie breaker 35	x									
0x6A	110	x			x			Reactive power bus tie breaker 36	x									
0x6A	111	x			x			Reactive power bus tie breaker 37	x									
0x6A	112	x			x			Reactive power bus tie breaker 38	x									
0x6A	113	x			x			Reactive power bus tie breaker 39	x									
0x6A	114	x			x			Reactive power bus	x									

Class ID	Attribute ID	Type						Attribute name	Product									
		Read only	Write only	Signed	Word	Double word	Bit		AGC	AGC mains	AGC bus tie	PPM DG	PPM EDG	PPM SHAFT	PPM SHORE	PPM BTB	PPU/GPC	GPU/GPU Hydro
Please note that all the DEIF-specific objects only have one instance, the instance number 1.
								tie breaker 40										
0x6A	115	x			x			Plant mode mains 17	x									
0x6A	116	x			x			Plant mode mains 18	x									
0x6A	117	x			x			Plant mode mains 19	x									
0x6A	118	x			x			Plant mode mains 20	x									
0x6A	119	x			x			Plant mode mains 21	x									
0x6A	120	x			x			Plant mode mains 22	x									
0x6A	121	x			x			Plant mode mains 23	x									
0x6A	122	x			x			Plant mode mains 24	x									
0x6A	123	x			x			Plant mode mains 25	x									
0x6A	124	x			x			Plant mode mains 26	x									
0x6A	125	x			x			Plant mode mains 27	x									
0x6A	126	x			x			Plant mode mains 28	x									
0x6A	127	x			x			Plant mode mains 29	x									
0x6A	128	x			x			Plant mode mains 30	x									
0x6A	129	x			x			Plant mode mains 31	x									
0x6A	130	x			x			Plant mode mains 32	x									
0x6A	131	x			x			Bus power mains 17	x									
0x6A	132	x			x			Bus power mains 18	x									

Class ID	Attribute ID	Type						Attribute name	Product									
		Read only	Write only	Signed	Word	Double word	Bit		AGC	AGC mains	AGC bus tie	PPM DG	PPM EDG	PPM SHAFT	PPM SHORE	PPM BTB	PPU/GPC	GPU/GPU Hydro
Please note that all the DEIF-specific objects only have one instance, the instance number 1.																		
0x6A	133	x			x			Bus power mains 19	x									
0x6A	134	x			x			Bus power mains 20	x									
0x6A	135	x			x			Bus power mains 21	x									
0x6A	136	x			x			Bus power mains 22	x									
0x6A	137	x			x			Bus power mains 23	x									
0x6A	138	x			x			Bus power mains 24	x									
0x6A	139	x			x			Bus power mains 25	x									
0x6A	140	x			x			Bus power mains 26	x									
0x6A	141	x			x			Bus power mains 27	x									
0x6A	142	x			x			Bus power mains 28	x									
0x6A	143	x			x			Bus power mains 29	x									
0x6A	144	x			x			Bus power mains 30	x									
0x6A	145	x			x			Bus power mains 31	x									
0x6A	146	x			x			Bus power mains 32	x									
0x6A	147	x			x			Bit 0 = ID 17 mains transducer-configured	x	x	x							
		x			x			Bit 1 = ID 18 mains transducer-configured	x	x	x							
		x			x			Bit 2 = ID 19 mains	x	x	x							

Class ID	Attribute ID	Type						Attribute name	Product									
		Read only	Write only	Signed	Word	Double word	Bit		AGC	AGC mains	AGC bus tie	PPM DG	PPM EDG	PPM SHAFT	PPM SHORE	PPM BTB	PPU/GPC	GPU/GPU Hydro
Please note that all the DEIF-specific objects only have one instance, the instance number 1.
								transducer-configured										
		x			x			Bit 3 = ID 20 mains transducer-configured	x	x	x							
		x			x			Bit 4 = ID 21 mains transducer-configured	x	x	x							
		x			x			Bit 5 = ID 22 mains transducer-configured	x	x	x							
		x			x			Bit 6 = ID 23 mains transducer-configured	x	x	x							
		x			x			Bit 7 = ID 24 mains transducer-configured	x	x	x							
		x			x			Bit 8 = ID 25 mains transducer-configured	x	x	x							
		x			x			Bit 9 = ID 26 mains transducer-configured	x	x	x							
		x			x			Bit 10 = ID 27 mains transducer-	x	x	x							

Class ID	Attribute ID		Type						Attribute name	Product									
			Read only	Write only	Signed	Word	Double word	Bit		AGC	AGC mains	AGC bus tie	PPM DG	PPM EDG	PPM SHAFT	PPM SHORE	PPM BTB	PPU/GPC	GPU/GPU Hydro
Please note that all the DEIF-specific objects only have one instance, the instance number 1.																			
									configured										
			x			x			Bit 11 = ID 28 mains transducer-configured	x	x	x							
			x			x			Bit 12 = ID 29 mains transducer-configured	x	x	x							
			x			x			Bit 13 = ID 30 mains transducer-configured	x	x	x							
			x			x			Bit 14 = ID 31 mains transducer-configured	x	x	x							
			x			x			Bit 15 = ID 32 mains transducer-configured	x	x	x							
0x6A	148		x			x			Bit 0 = ID 17 TB transducer-configured	x	x	x							
			x			x			Bit 1 = ID 18 TB transducer-configured	x	x	x							
			x			x			Bit 2 = ID 19 TB transducer-configured	x	x	x							

Class ID	Attribute ID	Type						Attribute name	Product									
		Read only	Write only	Signed	Word	Double word	Bit		AGC	AGC mains	AGC bus tie	PPM DG	PPM EDG	PPM SHAFT	PPM SHORE	PPM BTB	PPU/GPC	GPU/GPU Hydro
Please note that all the DEIF-specific objects only have one instance, the instance number 1.																		
		x			x			Bit 3 = ID 20 TB transducer-configured	x	x	x							
		x			x			Bit 4 = ID 21 TB transducer-configured	x	x	x							
		x			x			Bit 5 = ID 22 TB transducer-configured	x	x	x							
		x			x			Bit 6 = ID 23 TB transducer-configured	x	x	x							
		x			x			Bit 7 = ID 24 TB transducer-configured	x	x	x							
		x			x			Bit 8 = ID 25 TB transducer-configured	x	x	x							
		x			x			Bit 9 = ID 26 TB transducer-configured	x	x	x							
		x			x			Bit 10 = ID 27 TB transducer-configured	x	x	x							
		x			x			Bit 11 = ID 28 TB	x	x	x							

Class ID	Attribute ID	Type						Attribute name	Product									
		Read only	Write only	Signed	Word	Double word	Bit		AGC	AGC mains	AGC bus tie	PPM DG	PPM EDG	PPM SHAFT	PPM SHORE	PPM BTB	PPU/GPC	GPU/GPU Hydro
Please note that all the DEIF-specific objects only have one instance, the instance number 1.																		
								transducer-configured										
		x			x			Bit 12 = ID 29 TB transducer-configured	x	x	x							
		x			x			Bit 13 = ID 30 TB transducer-configured	x	x	x							
		x			x			Bit 14 = ID 31 TB transducer-configured	x	x	x							
		x			x			Bit 15 = ID 32 TB transducer-configured	x	x	x							
0x6A	149	x			x			Bit 0 = ID 33 BTB transducer-configured	x	x	x							
		x			x			Bit 1 = ID 34 BTB transducer-configured	x	x	x							
		x			x			Bit 2 = ID 35 BTB transducer-configured	x	x	x							
		x			x			Bit 3 = ID 36 BTB transducer-	x	x	x							

Class ID	Attribute ID	Type						Attribute name	Product									
		Read only	Write only	Signed	Word	Double word	Bit		AGC	AGC mains	AGC bus tie	PPM DG	PPM EDG	PPM SHAFT	PPM SHORE	PPM BTB	PPU/GPC	GPU/GPU Hydro
Please note that all the DEIF-specific objects only have one instance, the instance number 1.
								configured										
		x			x			Bit 4 = ID 37 BTB transducer-configured	x	x	x							
		x			x			Bit 5 = ID 38 BTB transducer-configured	x	x	x							
		x			x			Bit 6 = ID 39 BTB transducer-configured	x	x	x							
		x			x			Bit 7 = ID 40 BTB transducer-configured	x	x	x							
0x6A	150	x			x			Bit 0 = ID 33 BTB controlled	x	x	x							
		x			x			Bit 1 = ID 34 BTB controlled	x	x	x							
		x			x			Bit 2 = ID 35 BTB controlled	x	x	x							
		x			x			Bit 3 = ID 36 BTB controlled	x	x	x							
		x			x			Bit 4 = ID 37 BTB controlled	x	x	x							
		x			x			Bit 5 = ID 38 BTB controlled	x	x	x							

Class ID	Attribute ID	Read only	Write only	Signed	Word	Double word	Bit	Attribute name	AGC	AGC mains	AGC bus tie	PPM DG	PPM EDG	PPM SHAFT	PPM SHORE	PPM BTB	PPU/GPC	GPU/GPU Hydro
								Type				**Product**						
								Please note that all the DEIF-specific objects only have one instance, the instance number 1.										
		x			x			Bit 6 = ID 39 BTB controlled	x	x	x							
		x			x			Bit 7 = ID 40 BTB controlled	x	x	x							
0x6A	151	x			x			ID 17 nominal power	x	x	x							
0x6A	152	x			x			ID 18 nominal power	x	x	x							
0x6A	153	x			x			ID 19 nominal power	x	x	x							
0x6A	154	x			x			ID 20 nominal power	x	x	x							
0x6A	155	x			x			ID 21 nominal power	x	x	x							
0x6A	156	x			x			ID 22 nominal power	x	x	x							
0x6A	157	x			x			ID 23 nominal power	x	x	x							
0x6A	158	x			x			ID 24 nominal power	x	x	x							
0x6A	159	x			x			ID 25 nominal power	x	x	x							
0x6A	160	x			x			ID 26 nominal power	x	x	x							
0x6A	161	x			x			ID 27 nominal power	x	x	x							
0x6A	162	x			x			ID 28 nominal power	x	x	x							
0x6A	163	x			x			ID 29 nominal power	x	x	x							
0x6A	164	x			x			ID 30 nominal power	x	x	x							
0x6A	165	x			x			ID 31 nominal power	x	x	x							
0x6A	166	x			x			ID 32 nominal power	x	x	x							

Class ID	Attribute ID	Type						Attribute name	Product									
		Read only	Write only	Signed	Word	Double word	Bit		AGC	AGC mains	AGC bus tie	PPM DG	PPM EDG	PPM SHAFT	PPM SHORE	PPM BTB	PPU/GPC	GPU/GPU Hydro
Please note that all the DEIF-specific objects only have one instance, the instance number 1.																		
0x6A	167	x			x			Bit 0 = ID 1 Transducer-configured				x	x	x	x	x		
		x			x			Bit 1 = ID 2 Transducer-configured				x	x	x	x	x		
		x			x			Bit 2 = ID 3 Transducer-configured				x	x	x	x	x		
		x			x			Bit 3 = ID 4 Transducer-configured				x	x	x	x	x		
		x			x			Bit 4 = ID 5 Transducer-configured				x	x	x	x	x		
		x			x			Bit 5 = ID 6 Transducer-configured				x	x	x	x	x		
		x			x			Bit 6 = ID 7 Transducer-configured				x	x	x	x	x		
		x			x			Bit 7 = ID 8 Transducer-configured				x	x	x	x	x		
		x			x			Bit 8 = ID 9				x	x	x	x	x		

Class ID	Attribute ID	Type						Attribute name	Product									
		Read only	Write only	Signed	Word	Double word	Bit		AGC	AGC mains	AGC bus tie	PPM DG	PPM EDG	PPM SHAFT	PPM SHORE	PPM BTB	PPU/GPC	GPU/GPU Hydro
Please note that all the DEIF-specific objects only have one instance, the instance number 1.																		
								Transducer-configured										
		x			x			Bit 9 = ID 10 Transducer-configured				x	x	x	x	x		
		x			x			Bit 10 = ID 11 Transducer-configured				x	x	x	x	x		
		x			x			Bit 11 = ID 12 Transducer-configured				x	x	x	x	x		
		x			x			Bit 12 = ID 13 Transducer-configured				x	x	x	x	x		
		x			x			Bit 13 = ID 14 Transducer-configured				x	x	x	x	x		
		x			x			Bit 14 = ID 15 Transducer-configured				x	x	x	x	x		
		x			x			Bit 15 = ID 16 Transducer-configured				x	x	x	x	x		
0x6A	168	x			x			ID 1 Transducer-measured value				x	x	x	x	x		

Class ID	Attribute ID	Type						Attribute name	Product									
		Read only	Write only	Signed	Word	Double word	Bit		AGC	AGC mains	AGC bus tie	PPM DG	PPM EDG	PPM SHAFT	PPM SHORE	PPM BTB	PPU/GPC	GPU/GPU Hydro
Please note that all the DEIF-specific objects only have one instance, the instance number 1.																		
0x6A	169	x			x			ID 2 Transducer-measured value				x	x	x	x	x		
0x6A	170	x			x			ID 3 Transducer-measured value				x	x	x	x	x		
0x6A	171	x			x			ID 4 Transducer-measured value				x	x	x	x	x		
0x6A	172	x			x			ID 5 Transducer-measured value				x	x	x	x	x		
0x6A	173	x			x			ID 6 Transducer-measured value				x	x	x	x	x		
0x6A	174	x			x			ID 7 Transducer-measured value				x	x	x	x	x		
0x6A	175	x			x			ID 8 Transducer-measured value				x	x	x	x	x		
0x6A	176	x			x			ID 9 Transducer-measured value				x	x	x	x	x		
0x6A	177	x			x			ID 10 Transducer-measured value				x	x	x	x	x		
0x6A	178	x			x			ID 11Transducer-measured value				x	x	x	x	x		
0x6A	179	x			x			ID 12 Transducer-measured value				x	x	x	x	x		
0x6A	180	x			x			ID 13 Transducer-measured value				x	x	x	x	x		
0x6A	181	x			x			ID 14 Transducer-				x	x	x	x	x		

Class ID	Attribute ID	Type						Attribute name	Product									
		Read only	Write only	Signed	Word	Double word	Bit		AGC	AGC mains	AGC bus tie	PPM DG	PPM EDG	PPM SHAFT	PPM SHORE	PPM BTB	PPU/GPC	GPU/GPU Hydro
Please note that all the DEIF-specific objects only have one instance, the instance number 1.
								measured value										
0x6A	182	x			x			ID 15 Transducer-measured value				x	x	x	x	x		
0x6A	183	x			x			ID 16 Transducer-measured value				x	x	x	x	x		
0x6A	184	x			x			Bit 0 = TB available	x									
		x			x			Bit 0 = Shore unit available							x			
		x			x			Bit 1 = Mains unit available	x									
		x			x			Bit 1 = SG unit available							x			
		x			x			Bit 2 = Any MB pos. ON	x									
		x			x			Bit 2 = Any SGB/SCB pos ON							x	x		
		x			x			Bit 3 = Any MB pos. OFF	x									
		x			x			Bit 3 = Any SGB/SCB pos OFF							x	x		
		x			x			Bit 4 = TB pos. ON (Mains Command Unit)	x									
		x			x			Bit 4 = SCB pos ON								x		

Class ID	Attribute ID	Type						Attribute name	Product									
		Read only	Write only	Signed	Word	Double word	Bit		AGC	AGC mains	AGC bus tie	PPM DG	PPM EDG	PPM SHAFT	PPM SHORE	PPM BTB	PPU/GPC	GPU/GPU Hydro
Please note that all the DEIF-specific objects only have one instance, the instance number 1.																		
		x			x			Bit 5 = TB pos. OFF (Mains Command Unit)	x									
		x			x			Bit 5 = SCB pos OFF							x			
		x			x			Bit 6 = Any GB pos. ON	x			x	x	x				
		x			x			Bit 7 = Any GB pos. OFF	x			x	x	x				
		x			x			Bit 8 = Any TB pos. ON	x					x				
		x			x			Bit 9 = Any TB pos. OFF	x					x				
		x			x			Bit 10 = Any BTB pos. ON	x									
		x			x			Bit 11 = Any BTB pos. OFF	x									
0x6A	185	x			x			Bit 0 = GB pos. ON ID 1	x	x	x	x	x	x	x	x		
		x			x			Bit 1 = GB pos. ON ID 2	x	x	x	x	x	x	x	x		
		x			x			Bit 2 = GB pos. ON ID 3	x	x	x	x	x	x	x	x		
		x			x			Bit 3 = GB pos. ON ID 4	x	x	x	x	x	x	x	x		

Class ID	Attribute ID	Type						Attribute name	Product									
		Read only	Write only	Signed	Word	Double word	Bit		AGC	AGC mains	AGC bus tie	PPM DG	PPM EDG	PPM SHAFT	PPM SHORE	PPM BTB	PPU/GPC	GPU/GPU Hydro
Please note that all the DEIF-specific objects only have one instance, the instance number 1.																		
		x			x			Bit 4 = GB pos. ON ID 5	x	x	x	x	x	x	x	x		
		x			x			Bit 5 = GB pos. ON ID 6	x	x	x	x	x	x	x	x		
		x			x			Bit 6 = GB pos. ON ID 7	x	x	x	x	x	x	x	x		
		x			x			Bit 7 = GB pos. ON ID 8	x	x	x	x	x	x	x	x		
		x			x			Bit 8 = GB pos. ON ID 9	x	x	x	x	x	x	x	x		
		x			x			Bit 9 = GB pos. ON ID 10	x	x	x	x	x	x	x	x		
		x			x			Bit 10 = GB pos. ON ID 11	x	x	x	x	x	x	x	x		
		x			x			Bit 11 = GB pos. ON ID 12	x	x	x	x	x	x	x	x		
		x			x			Bit 12 = GB pos. ON ID 13	x	x	x	x	x	x	x	x		
		x			x			Bit 13 = GB pos. ON ID 14	x	x	x	x	x	x	x	x		
		x			x			Bit 14 = GB pos. ON ID 15	x	x	x	x	x	x	x	x		
		x			x			Bit 15 = GB pos. ON ID 16	x	x	x	x	x	x	x	x		
0x6A	186	x			x			Bit 0 = GB pos. OFF	x	x	x	x	x	x	x	x		

Class ID	Attribute ID	Type						Attribute name	Product									
		Read only	Write only	Signed	Word	Double word	Bit		AGC	AGC mains	AGC bus tie	PPM DG	PPM EDG	PPM SHAFT	PPM SHORE	PPM BTB	PPU/GPC	GPU/GPU Hydro
Please note that all the DEIF-specific objects only have one instance, the instance number 1.																		
								ID 1										
		x			x			Bit 1 = GB pos. OFF ID 2	x	x	x	x	x	x	x	x		
		x			x			Bit 2 = GB pos. OFF ID 3	x	x	x	x	x	x	x	x		
		x			x			Bit 3 = GB pos. OFF ID 4	x	x	x	x	x	x	x	x		
		x			x			Bit 4 = GB pos. OFF ID 5	x	x	x	x	x	x	x	x		
		x			x			Bit 5 = GB pos. OFF ID 6	x	x	x	x	x	x	x	x		
		x			x			Bit 6 = GB pos. OFF ID 7	x	x	x	x	x	x	x	x		
		x			x			Bit 7 = GB pos. OFF ID 8	x	x	x	x	x	x	x	x		
		x			x			Bit 8 = GB pos. OFF ID 9	x	x	x	x	x	x	x	x		
		x			x			Bit 9 = GB pos. OFF ID 10	x	x	x	x	x	x	x	x		
		x			x			Bit 10 = GB pos. OFF ID 11	x	x	x	x	x	x	x	x		
		x			x			Bit 11 = GB pos. OFF ID 12	x	x	x	x	x	x	x	x		
		x			x			Bit 12 = GB pos. OFF ID 13	x	x	x	x	x	x	x	x		

Class ID	Attribute ID	Type						Attribute name	Product									
		Read only	Write only	Signed	Word	Double word	Bit		AGC	AGC mains	AGC bus tie	PPM DG	PPM EDG	PPM SHAFT	PPM SHORE	PPM BTB	PPU/GPC	GPU/GPU Hydro
Please note that all the DEIF-specific objects only have one instance, the instance number 1.																		
		x			x			Bit 13 = GB pos. OFF ID 14	x	x	x	x	x	x	x	x		
		x			x			Bit 14 = GB pos. OFF ID 15	x	x	x	x	x	x	x	x		
		x			x			Bit 15 = GB pos. OFF ID 16	x	x	x	x	x	x	x	x		
0x6A	187	x			x			Bit 0 = DG Hz/V OK, ID 1	x	x	x	x	x	x	x	x		
		x			x			Bit 1 = DG Hz/V OK, ID 2	x	x	x	x	x	x	x	x		
		x			x			Bit 2 = DG Hz/V OK, ID 3	x	x	x	x	x	x	x	x		
		x			x			Bit 3 = DG Hz/V OK, ID 4	x	x	x	x	x	x	x	x		
		x			x			Bit 4 = DG Hz/V OK, ID 5	x	x	x	x	x	x	x	x		
		x			x			Bit 5 = DG Hz/V OK, ID 6	x	x	x	x	x	x	x	x		
		x			x			Bit 6 = DG Hz/V OK, ID 7	x	x	x	x	x	x	x	x		
		x			x			Bit 7 = DG Hz/V OK, ID 8	x	x	x	x	x	x	x	x		
		x			x			Bit 8 = DG Hz/V OK, ID 9	x	x	x	x	x	x	x	x		
		x			x			Bit 9 = DG Hz/V OK,	x	x	x	x	x	x	x	x		

Class ID	Attribute ID	Type						Attribute name	Product									
		Read only	Write only	Signed	Word	Double word	Bit		AGC	AGC mains	AGC bus tie	PPM DG	PPM EDG	PPM SHAFT	PPM SHORE	PPM BTB	PPU/GPC	GPU/GPU Hydro
Please note that all the DEIF-specific objects only have one instance, the instance number 1.
								ID10										
		x			x			Bit 10 = DG Hz/V OK, ID 11	x	x	x	x	x	x	x	x		
		x			x			Bit 11 = DG Hz/V OK, ID 12	x	x	x	x	x	x	x	x		
		x			x			Bit 12 = DG Hz/V OK, ID 13	x	x	x	x	x	x	x	x		
		x			x			Bit 13 = DG Hz/V OK, ID 14	x	x	x	x	x	x	x	x		
		x			x			Bit 14 = DG Hz/V OK, ID 15	x	x	x	x	x	x	x	x		
		x			x			Bit 15 = DG Hz/V OK, ID 16	x	x	x	x	x	x	x	x		
0x6A	188	x			x			Bit 0 = Mains OK, single mains	x	x	x							
		x			x			Bit 1 = Mains OK, mains 1A	x	x	x							
		x			x			Bit 2 = Mains OK, mains 1B	x	x	x							
		x			x			Bit 3 = Mains OK, mains 2A	x	x	x							
		x			x			Bit 4 = Mains OK, mains 2B	x	x	x							
0x6A	189	x			x			Bit 0 = Ready for auto start, ID 1	x	x	x	x	x	x	x	x		

Class ID	Attribute ID	Type						Attribute name	Product									
		Read only	Write only	Signed	Word	Double word	Bit		AGC	AGC mains	AGC bus tie	PPM DG	PPM EDG	PPM SHAFT	PPM SHORE	PPM BTB	PPU/GPC	GPU/GPU Hydro
Please note that all the DEIF-specific objects only have one instance, the instance number 1.																		
		x			x			Bit 1 = Ready for auto start, ID 2	x	x	x	x	x	x	x	x		
		x			x			Bit 2 = Ready for auto start, ID 3	x	x	x	x	x	x	x	x		
		x			x			Bit 3 = Ready for auto start, ID 4	x	x	x	x	x	x	x	x		
		x			x			Bit 4 = Ready for auto start, ID 5	x	x	x	x	x	x	x	x		
		x			x			Bit 5 = Ready for auto start, ID 6	x	x	x	x	x	x	x	x		
		x			x			Bit 6 = Ready for auto start, ID 7	x	x	x	x	x	x	x	x		
		x			x			Bit 7 = Ready for auto start, ID 8	x	x	x	x	x	x	x	x		
		x			x			Bit 8 = Ready for auto start, ID 9	x	x	x	x	x	x	x	x		
		x			x			Bit 9 = Ready for auto start, ID 10	x	x	x	x	x	x	x	x		
		x			x			Bit 10 = Ready for auto start, ID 11	x	x	x	x	x	x	x	x		
		x			x			Bit 11 = Ready for auto start, ID 12	x	x	x	x	x	x	x	x		
		x			x			Bit 12 = Ready for auto start, ID 13	x	x	x	x	x	x	x	x		
		x			x			Bit 13 = Ready for	x	x	x	x	x	x	x	x		

Class ID	Attribute ID	Type						Attribute name	Product									
		Read only	Write only	Signed	Word	Double word	Bit		AGC	AGC mains	AGC bus tie	PPM DG	PPM EDG	PPM SHAFT	PPM SHORE	PPM BTB	PPU/GPC	GPU/GPU Hydro
Please note that all the DEIF-specific objects only have one instance, the instance number 1.																		
								auto start, ID 14										
		x			x			Bit 14 = Ready for auto start, ID 15	x	x	x	x	x	x	x	x		
		x			x			Bit 15 = Ready for auto start, ID 16	x	x	x	x	x	x	x	x		
0x6A	190	x			x			Bit 0 = Mains not in semi, single mains	x	x	x							
		x			x			Bit 1 = Mains not in semi, mains 1A	x	x	x							
		x			x			Bit 2 = Mains not in semi, mains 1B	x	x	x							
		x			x			Bit 3 = Mains not in semi, mains 2A	x	x	x							
		x			x			Bit 4 = Mains not in semi, mains 2B	x	x	x							
0x6A	191	x			x			Bit 0 = Any alarms, ID 1	x	x	x	x	x	x	x	x		
		x			x			Bit 1 = Any alarms, ID 2	x	x	x	x	x	x	x	x		
		x			x			Bit 2 = Any alarms, ID 3	x	x	x	x	x	x	x	x		
		x			x			Bit 3 = Any alarms, ID 4	x	x	x	x	x	x	x	x		
		x			x			Bit 4 = Any alarms, ID 5	x	x	x	x	x	x	x	x		

Class ID	Attribute ID	Type						Attribute name	Product									
		Read only	Write only	Signed	Word	Double word	Bit		AGC	AGC mains	AGC bus tie	PPM DG	PPM EDG	PPM SHAFT	PPM SHORE	PPM BTB	PPU/GPC	GPU/GPU Hydro
Please note that all the DEIF-specific objects only have one instance, the instance number 1.																		
		x			x			Bit 5 = Any alarms, ID 6	x	x	x	x	x	x	x	x		
		x			x			Bit 6 = Any alarms, ID 7	x	x	x	x	x	x	x	x		
		x			x			Bit 7 = Any alarms, ID 8	x	x	x	x	x	x	x	x		
		x			x			Bit 8 = Any alarms, ID 9	x	x	x	x	x	x	x	x		
		x			x			Bit 9 = Any alarms, ID 10	x	x	x	x	x	x	x	x		
		x			x			Bit 10 = Any alarms, ID 11	x	x	x	x	x	x	x	x		
		x			x			Bit 11 = Any alarms, ID 12	x	x	x	x	x	x	x	x		
		x			x			Bit 12 = Any alarms, ID 13	x	x	x	x	x	x	x	x		
		x			x			Bit 13 = Any alarms, ID 14	x	x	x	x	x	x	x	x		
		x			x			Bit 14 = Any alarms, ID 15	x	x	x	x	x	x	x	x		
		x			x			Bit 15 = Any alarms, ID 16	x	x	x	x	x	x	x	x		
0x6A	192	x			x			Bit 0 = Any alarms, single mains	x	x	x							
		x			x			Bit 1 = Any alarms,	x	x	x							

Class ID	Attribute ID	Type						Attribute name	Product									
		Read only	Write only	Signed	Word	Double word	Bit		AGC	AGC mains	AGC bus tie	PPM DG	PPM EDG	PPM SHAFT	PPM SHORE	PPM BTB	PPU/GPC	GPU/GPU Hydro
Please note that all the DEIF-specific objects only have one instance, the instance number 1.																		
								mains 1A										
		x			x			Bit 2 = Any alarms, mains 1B	x	x	x							
		x			x			Bit 3 = Any alarms, mains 2A	x	x	x							
		x			x			Bit 4 = Any alarms, mains 2B	x	x	x							
		x			x			Bit 0 = Engine running, ID 1	x	x	x	x	x	x	x	x		
		x			x			Bit 1 = Engine running, ID 2	x	x	x	x	x	x	x	x		
		x			x			Bit 2 = Engine running, ID 3	x	x	x	x	x	x	x	x		
		x			x			Bit 3 = Engine running, ID 4	x	x	x	x	x	x	x	x		
		x			x			Bit 4 = Engine running, ID 5	x	x	x	x	x	x	x	x		
		x			x			Bit 5 = Engine running, ID 6	x	x	x	x	x	x	x	x		
		x			x			Bit 6 = Engine running, ID 7	x	x	x	x	x	x	x	x		
		x			x			Bit 7 = Engine running, ID 8	x	x	x	x	x	x	x	x		
		x			x			Bit 8 = Engine running, ID 9	x	x	x	x	x	x	x	x		

Class ID	Attribute ID	Type						Attribute name	Product									
		Read only	Write only	Signed	Word	Double word	Bit		AGC	AGC mains	AGC bus tie	PPM DG	PPM EDG	PPM SHAFT	PPM SHORE	PPM BTB	PPU/GPC	GPU/GPU Hydro
Please note that all the DEIF-specific objects only have one instance, the instance number 1.																		
		x			x			Bit 9 = Engine running, ID 10	x	x	x	x	x	x	x	x		
		x			x			Bit 10 = Engine running, ID 11	x	x	x	x	x	x	x	x		
		x			x			Bit 11 = Engine running, ID 12	x	x	x	x	x	x	x	x		
		x			x			Bit 12 = Engine running, ID 13	x	x	x	x	x	x	x	x		
		x			x			Bit 13 = Engine running, ID 14	x	x	x	x	x	x	x	x		
		x			x			Bit 14 = Engine running, ID 15	x	x	x	x	x	x	x	x		
		x			x			Bit 15 = Engine running, ID 16	x	x	x	x	x	x	x	x		
0x6A	193	x			x			Bit 0 = MB pos. ON, single mains	x	x	x							
		x			x			Bit 1 = MB pos. ON, mains 1A	x	x	x							
		x			x			Bit 2 = MB pos. ON, mains 1B	x	x	x							
		x			x			Bit 3 = MB pos. ON, mains 2A	x	x	x							
		x			x			Bit 4 = MB pos. ON, mains 2B	x	x	x							
		x			x			Bit 5 = MB pos. OFF,	x	x	x							

Class ID	Attribute ID	Read only	Write only	Signed	Word	Double word	Bit	Attribute name	AGC	AGC mains	AGC bus tie	PPM DG	PPM EDG	PPM SHAFT	PPM SHORE	PPM BTB	PPU/GPC	GPU/GPU Hydro
Please note that all the DEIF-specific objects only have one instance, the instance number 1.
								single mains										
		x			x			Bit 6 = MB pos. OFF, mains 1A	x	x	x							
		x			x			Bit 7 = MB pos. OFF, mains 1B	x	x	x							
		x			x			Bit 8 = MB pos. OFF, mains 2A	x	x	x							
		x			x			Bit 9 = MB pos. OFF, mains 2B	x	x	x							
0x6A	194	x			x			Bit 0 = GB synchronising, ID 1	x	x	x	x	x	x	x	x		
		x			x			Bit 1 = GB synchronising, ID 2	x	x	x	x	x	x	x	x		
		x			x			Bit 2 = GB synchronising, ID 3	x	x	x	x	x	x	x	x		
		x			x			Bit 3 = GB synchronising, ID 4	x	x	x	x	x	x	x	x		
		x			x			Bit 4 = GB synchronising, ID 5	x	x	x	x	x	x	x	x		
		x			x			Bit 5 = GB synchronising, ID 6	x	x	x	x	x	x	x	x		
		x			x			Bit 6 = GB synchronising, ID 7	x	x	x	x	x	x	x	x		
		x			x			Bit 7 = GB synchronising, ID 8	x	x	x	x	x	x	x	x		

Class ID	Attribute ID		Type						Attribute name	Product									
			Read only	Write only	Signed	Word	Double word	Bit		AGC	AGC mains	AGC bus tie	PPM DG	PPM EDG	PPM SHAFT	PPM SHORE	PPM BTB	PPU/GPC	GPU/GPU Hydro
Please note that all the DEIF-specific objects only have one instance, the instance number 1.																			
			x			x			Bit 8 = GB synchronising, ID 9	x	x	x	x	x	x	x	x		
			x			x			Bit 9 = GB synchronising, ID 10	x	x	x	x	x	x	x	x		
			x			x			Bit 10 = GB synchronising, ID 11	x	x	x	x	x	x	x	x		
			x			x			Bit 11 = GB synchronising, ID 12	x	x	x	x	x	x	x	x		
			x			x			Bit 12 = GB synchronising, ID 13	x	x	x	x	x	x	x	x		
			x			x			Bit 13 = GB synchronising, ID 14	x	x	x	x	x	x	x	x		
			x			x			Bit 14 = GB synchronising, ID 15	x	x	x	x	x	x	x	x		
			x			x			Bit 15 = GB synchronising, ID 16	x	x	x	x	x	x	x	x		
0x6A	195		x			x			Bit 0 = Mains OK, ID 17	x	x	x							
			x			x			Bit 0 = Shaft OK, ID 17				x	x	x	x	x		
			x			x			Bit 0 = Shore OK, ID 17				x	x	x	x	x		
			x			x			Bit 1 = Mains OK, ID 18	x	x	x							
			x			x			Bit 1 = Shaft OK, ID				x	x	x	x	x		

Class ID	Attribute ID	Type						Attribute name	Product									
		Read only	Write only	Signed	Word	Double word	Bit		AGC	AGC mains	AGC bus tie	PPM DG	PPM EDG	PPM SHAFT	PPM SHORE	PPM BTB	PPU/GPC	GPU/GPU Hydro
Please note that all the DEIF-specific objects only have one instance, the instance number 1.
								18										
		x			x			Bit 1 = Shore OK, ID 18				x	x	x	x	x		
		x			x			Bit 2 = Mains OK, ID 19	x	x	x							
		x			x			Bit 2 = Shaft OK, ID 19				x	x	x	x	x		
		x			x			Bit 2 = Shore OK, ID 19				x	x	x	x	x		
		x			x			Bit 3 = Mains OK, ID 20	x	x	x							
		x			x			Bit 3 = Shaft OK, ID 20				x	x	x	x	x		
		x			x			Bit 3 = Shore OK, ID 20				x	x	x	x	x		
		x			x			Bit 4 = Mains OK, ID 21	x	x	x							
		x			x			Bit 5 = Mains OK, ID 22	x	x	x							
		x			x			Bit 6 = Mains OK, ID 23	x	x	x							
		x			x			Bit 7 = Mains OK, ID 24	x	x	x							
		x			x			Bit 8 = Mains OK, ID 25	x	x	x							

Class ID	Attribute ID	Type						Attribute name	Product									
		Read only	Write only	Signed	Word	Double word	Bit		AGC	AGC mains	AGC bus tie	PPM DG	PPM EDG	PPM SHAFT	PPM SHORE	PPM BTB	PPU/GPC	GPU/GPU Hydro
Please note that all the DEIF-specific objects only have one instance, the instance number 1.
		x			x			Bit 9 = Mains OK, ID 26	x	x	x							
		x			x			Bit 10 = Mains OK, ID 27	x	x	x							
		x			x			Bit 11 = Mains OK, ID 28	x	x	x							
		x			x			Bit 12 = Mains OK, ID 29	x	x	x							
		x			x			Bit 13 = Mains OK, ID 30	x	x	x							
		x			x			Bit 14 = Mains OK, ID 31	x	x	x							
		x			x			Bit 15 = Mains OK, ID 32	x	x	x							
0x6A	196	x			x			Bit 0 = Mains not in semi 17	x	x	x							
		x			x			Bit 1 = Mains not in semi 18	x	x	x							
		x			x			Bit 2 = Mains not in semi 19	x	x	x							
		x			x			Bit 3 = Mains not in semi 20	x	x	x							
		x			x			Bit 4 = Mains not in semi 21	x	x	x							
		x			x			Bit 5 = Mains not in	x	x	x							

Class ID	Attribute ID	Type						Attribute name	Product									
		Read only	Write only	Signed	Word	Double word	Bit		AGC	AGC mains	AGC bus tie	PPM DG	PPM EDG	PPM SHAFT	PPM SHORE	PPM BTB	PPU/GPC	GPU/GPU Hydro
Please note that all the DEIF-specific objects only have one instance, the instance number 1.																		
								semi 22										
		x			x			Bit 6 = Mains not in semi 23	x	x	x							
		x			x			Bit 7 = Mains not in semi 24	x	x	x							
		x			x			Bit 8 = Mains not in semi 25	x	x	x							
		x			x			Bit 9 = Mains not in semi 26	x	x	x							
		x			x			Bit 10 = Mains not in semi 27	x	x	x							
		x			x			Bit 11 = Mains not in semi 28	x	x	x							
		x			x			Bit 12 = Mains not in semi 29	x	x	x							
		x			x			Bit 13 = Mains not in semi 30	x	x	x							
		x			x			Bit 14 = Mains not in semi 31	x	x	x							
		x			x			Bit 15 = Mains not in semi 32	x	x	x							
0x6A	197	x			x			Bit 0 = Any alarms, mains ID 17	x	x	x							
		x			x			Bit 0 = Any alarms, shaft ID 17				x	x	x	x	x		

Class ID	Attribute ID	Type						Attribute name	Product									
		Read only	Write only	Signed	Word	Double word	Bit		AGC	AGC mains	AGC bus tie	PPM DG	PPM EDG	PPM SHAFT	PPM SHORE	PPM BTB	PPU/GPC	GPU/GPU Hydro
Please note that all the DEIF-specific objects only have one instance, the instance number 1.
		x			x			Bit 0 = Any alarms, shore ID 17				x	x	x	x	x		
		x			x			Bit 1 = Any alarms, mains ID 18	x	x	x							
		x			x			Bit 1 = Any alarms, shaft ID 18				x	x	x	x	x		
		x			x			Bit 1 = Any alarms, shore ID 18				x	x	x	x	x		
		x			x			Bit 2 = Any alarms, mains ID 19	x	x	x							
		x			x			Bit 2 = Any alarms, shaft ID 19				x	x	x	x	x		
		x			x			Bit 2 = Any alarms, shore ID 19				x	x	x	x	x		
		x			x			Bit 3 = Any alarms, mains ID 20	x	x	x							
		x			x			Bit 3 = Any alarms, shaft ID 20				x	x	x	x	x		
		x			x			Bit 3 = Any alarms, shore ID 20				x	x	x	x	x		
		x			x			Bit 4 = Any alarms, mains ID 21	x	x	x							
		x			x			Bit 5 = Any alarms, mains ID 22	x	x	x							
		x			x			Bit 6 = Any alarms,	x	x	x							

Class ID	Attribute ID	Type						Attribute name	Product									
		Read only	Write only	Signed	Word	Double word	Bit		AGC	AGC mains	AGC bus tie	PPM DG	PPM EDG	PPM SHAFT	PPM SHORE	PPM BTB	PPU/GPC	GPU/GPU Hydro
Please note that all the DEIF-specific objects only have one instance, the instance number 1.																		
								mains ID 23										
		x			x			Bit 7 = Any alarms, mains ID 24	x	x	x							
		x			x			Bit 8 = Any alarms, mains ID 25	x	x	x							
		x			x			Bit 9 = Any alarms, mains ID 26	x	x	x							
		x			x			Bit 10 = Any alarms, mains ID 27	x	x	x							
		x			x			Bit 11 = Any alarms, mains ID 28	x	x	x							
		x			x			Bit 12 = Any alarms, mains ID 29	x	x	x							
		x			x			Bit 13 = Any alarms, mains ID 30	x	x	x							
		x			x			Bit 14 = Any alarms, mains ID 31	x	x	x							
		x			x			Bit 15 = Any alarms, mains ID 32	x	x	x							
0x6A	198	x			x			Bit 0 = MB pos. ON, ID 17	x	x	x							
		x			x			Bit 0 = SGB/SCB ON, ID 17				x	x	x	x	x		
		x			x			Bit 1 = MB pos. ON, ID 18	x	x	x							

Class ID	Attribute ID		Type						Attribute name	Product									
			Read only	Write only	Signed	Word	Double word	Bit		AGC	AGC mains	AGC bus tie	PPM DG	PPM EDG	PPM SHAFT	PPM SHORE	PPM BTB	PPU/GPC	GPU/GPU Hydro
Please note that all the DEIF-specific objects only have one instance, the instance number 1.																			
			x			x			Bit 1 = SGB ON, ID 18				x	x	x	x	x		
			x			x			Bit 2 = MB pos. ON, ID 19	x	x	x							
			x			x			Bit 2 = SGB/SCB ON, ID 19				x	x	x	x	x		
			x			x			Bit 3 = MB pos. ON, ID 20	x	x	x							
			x			x			Bit 3 = SGB/SCB ON, ID 20				x	x	x	x	x		
			x			x			Bit 4 = MB pos. ON, ID 21	x	x	x							
			x			x			Bit 5 = MB pos. ON, ID 22	x	x	x							
			x			x			Bit 6 = MB pos. ON, ID 23	x	x	x							
			x			x			Bit 7 = MB pos. ON, ID 24	x	x	x							
			x			x			Bit 8 = MB pos. ON, ID 25	x	x	x							
			x			x			Bit 9 = MB pos. ON, ID 26	x	x	x							
			x			x			Bit 10 = MB pos. ON, ID 27	x	x	x							
			x			x			Bit 11 = MB pos. ON,	x	x	x							

Class ID	Attribute ID		Type						Attribute name	Product									
			Read only	Write only	Signed	Word	Double word	Bit		AGC	AGC mains	AGC bus tie	PPM DG	PPM EDG	PPM SHAFT	PPM SHORE	PPM BTB	PPU/GPC	GPU/GPU Hydro
Please note that all the DEIF-specific objects only have one instance, the instance number 1.																			
									ID 28										
			x			x			Bit 12 = MB pos. ON, ID 29	x	x	x							
			x			x			Bit 13 = MB pos. ON, ID 30	x	x	x							
			x			x			Bit 14 = MB pos. ON, ID 31	x	x	x							
			x			x			Bit 15 = MB pos. ON, ID 32	x	x	x							
0x6A	199		x			x			Bit 0 = MB pos. OFF, ID 17	x	x	x							
			x			x			Bit 0 = SGB/SCB pos OFF, ID 17				x	x	x	x	x		
			x			x			Bit 1 = MB pos. OFF, ID 18	x	x	x							
			x			x			Bit 1 = SGB/SCB pos OFF, ID 18				x	x	x	x	x		
			x			x			Bit 2 = MB pos. OFF, ID 19	x	x	x							
			x			x			Bit 2 = SGB/SCB pos OFF, ID 19				x	x	x	x	x		
			x			x			Bit 3 = MB pos. OFF, ID 20	x	x	x							
			x			x			Bit 4 = MB pos. OFF, ID 21	x	x	x							

Class ID	Attribute ID	Type						Attribute name	Product									
		Read only	Write only	Signed	Word	Double word	Bit		AGC	AGC mains	AGC bus tie	PPM DG	PPM EDG	PPM SHAFT	PPM SHORE	PPM BTB	PPU/GPC	GPU/GPU Hydro
Please note that all the DEIF-specific objects only have one instance, the instance number 1.
		x			x			Bit 5 = MB pos. OFF, ID 22	x	x	x							
		x			x			Bit 6 = MB pos. OFF, ID 23	x	x	x							
		x			x			Bit 7 = MB pos. OFF, ID 24	x	x	x							
		x			x			Bit 8 = MB pos. OFF, ID 25	x	x	x							
		x			x			Bit 9 = MB pos. OFF, ID 26	x	x	x							
		x			x			Bit 10 = MB pos. OFF, ID 27	x	x	x							
		x			x			Bit 11 = MB pos. OFF, ID 28	x	x	x							
		x			x			Bit 12 = MB pos. OFF, ID 29	x	x	x							
		x			x			Bit 13 = MB pos. OFF, ID 30	x	x	x							
		x			x			Bit 14 = MB pos. OFF, ID 31	x	x	x							
		x			x			Bit 15 = MB pos. OFF, ID 32	x	x	x							
0x6A	200	x			x			Bit 0 = Mains failure, ID 17	x	x	x							
		x			x			Bit 1 = Mains failure,	x	x	x							

Class ID	Attribute ID		Type						Attribute name	Product									
			Read only	Write only	Signed	Word	Double word	Bit		AGC	AGC mains	AGC bus tie	PPM DG	PPM EDG	PPM SHAFT	PPM SHORE	PPM BTB	PPU/GPC	GPU/GPU Hydro
Please note that all the DEIF-specific objects only have one instance, the instance number 1.																			
									ID 18										
			x			x			Bit 2 = Mains failure, ID 19	x	x	x							
			x			x			Bit 3 = Mains failure, ID 20	x	x	x							
			x			x			Bit 4 = Mains failure, ID 21	x	x	x							
			x			x			Bit 5 = Mains failure, ID 22	x	x	x							
			x			x			Bit 6 = Mains failure, ID 23	x	x	x							
			x			x			Bit 7 = Mains failure, ID 24	x	x	x							
			x			x			Bit 8 = Mains failure, ID 25	x	x	x							
			x			x			Bit 9 = Mains failure, ID 26	x	x	x							
			x			x			Bit 10 = Mains failure, ID 27	x	x	x							
			x			x			Bit 11 = Mains failure, ID 28	x	x	x							
			x			x			Bit 12 = Mains failure, ID 29	x	x	x							
			x			x			Bit 13 = Mains failure, ID 30	x	x	x							

Class ID	Attribute ID	Read only	Write only	Signed	Word	Double word	Bit	Attribute name	AGC	AGC mains	AGC bus tie	PPM DG	PPM EDG	PPM SHAFT	PPM SHORE	PPM BTB	PPU/GPC	GPU/GPU Hydro
								Type → / **Product** →										
								Please note that all the DEIF-specific objects only have one instance, the instance number 1.										
		x			x			Bit 14 = Mains failure, ID 31	x	x	x							
		x			x			Bit 15 = Mains failure, ID 32	x	x	x							
0x6A	201	x			x			Bit 0 = MB synchronising, ID 17	x	x	x							
		x			x			Bit 0 = SGB/SCB synchronising, ID 17				x	x	x	x	x		
		x			x			Bit 1 = MB synchronising, ID 18	x	x	x							
		x			x			Bit 1 = SGB/SCB synchronising, ID 18				x	x	x	x	x		
		x			x			Bit 2 = MB synchronising, ID 19	x	x	x							
		x			x			Bit 2 = SGB/SCB synchronising, ID 19				x	x	x	x	x		
		x			x			Bit 3 = MB synchronising, ID 20	x	x	x							
		x			x			Bit 3 = SGB/SCB synchronising, ID 20				x	x	x	x	x		
		x			x			Bit 4 = MB synchronising, ID 21	x	x	x							
		x			x			Bit 5 = MB synchronising, ID 22	x	x	x							
		x			x			Bit 6 = MB	x	x	x							

Class ID	Attribute ID	Type						Attribute name	Product									
		Read only	Write only	Signed	Word	Double word	Bit		AGC	AGC mains	AGC bus tie	PPM DG	PPM EDG	PPM SHAFT	PPM SHORE	PPM BTB	PPU/GPC	GPU/GPU Hydro
Please note that all the DEIF-specific objects only have one instance, the instance number 1.																		
								synchronising, ID 23										
		x			x			Bit 7 = MB synchronising, ID 24	x	x	x							
		x			x			Bit 8 = MB synchronising, ID 25	x	x	x							
		x			x			Bit 9 = MB synchronising, ID 26	x	x	x							
		x			x			Bit 10 = MB synchronising, ID 27	x	x	x							
		x			x			Bit 11 = MB synchronising, ID 28	x	x	x							
		x			x			Bit 12 = MB synchronising, ID 29	x	x	x							
		x			x			Bit 13 = MB synchronising, ID 30	x	x	x							
		x			x			Bit 14 = MB synchronising, ID 31	x	x	x							
		x			x			Bit 15 = MB synchronising, ID 32	x	x	x							
0x6A	202	x			x			Bit 0 = TB pos. ON, ID 17	x	x	x							
		x			x			Bit 1 = TB pos. ON, ID 18	x	x	x							
		x			x			Bit 2 = TB pos. ON, ID 19	x	x	x							

Class ID	Attribute ID		Type						Attribute name	Product									
			Read only	Write only	Signed	Word	Double word	Bit		AGC	AGC mains	AGC bus tie	PPM DG	PPM EDG	PPM SHAFT	PPM SHORE	PPM BTB	PPU/GPC	GPU/GPU Hydro
Please note that all the DEIF-specific objects only have one instance, the instance number 1.																			
			x			x			Bit 3 = TB pos. ON, ID 20	x	x	x							
			x			x			Bit 4 = TB pos. ON, ID 21	x	x	x							
			x			x			Bit 5 = TB pos. ON, ID 22	x	x	x							
			x			x			Bit 6 = TB pos. ON, ID 23	x	x	x							
			x			x			Bit 7 = TB pos. ON, ID 24	x	x	x							
			x			x			Bit 8 = TB pos. ON, ID 25	x	x	x							
			x			x			Bit 9 = TB pos. ON, ID 26	x	x	x							
			x			x			Bit 10 = TB pos. ON, ID 27	x	x	x							
			x			x			Bit 11 = TB pos. ON, ID 28	x	x	x							
			x			x			Bit 12 = TB pos. ON, ID 29	x	x	x							
			x			x			Bit 13 = TB pos. ON, ID 30	x	x	x							
			x			x			Bit 14 = TB pos. ON, ID 31	x	x	x							
			x			x			Bit 15 = TB pos. ON,	x	x	x							

Class ID	Attribute ID		Type						Attribute name	Product									
			Read only	Write only	Signed	Word	Double word	Bit		AGC	AGC mains	AGC bus tie	PPM DG	PPM EDG	PPM SHAFT	PPM SHORE	PPM BTB	PPU/GPC	GPU/GPU Hydro
Please note that all the DEIF-specific objects only have one instance, the instance number 1.
									ID 32										
0x6A	203		x			x			Bit 0 = TB pos. OFF, ID 17	x	x	x							
			x			x			Bit 1 = TB pos. OFF, ID 18	x	x	x							
			x			x			Bit 2 = TB pos. OFF, ID 19	x	x	x							
			x			x			Bit 3 = TB pos. OFF, ID 20	x	x	x							
			x			x			Bit 4 = TB pos. OFF, ID 21	x	x	x							
			x			x			Bit 5 = TB pos. OFF, ID 22	x	x	x							
			x			x			Bit 6 = TB pos. OFF, ID 23	x	x	x							
			x			x			Bit 7 = TB pos. OFF, ID 24	x	x	x							
			x			x			Bit 8 = TB pos. OFF, ID 25	x	x	x							
			x			x			Bit 9 = TB pos. OFF, ID 26	x	x	x							
			x			x			Bit 10 = TB pos. OFF, ID 27	x	x	x							
			x			x			Bit 11 = TB pos. OFF, ID 28	x	x	x							

Class ID	Attribute ID	Type						Attribute name	Product									
		Read only	Write only	Signed	Word	Double word	Bit		AGC	AGC mains	AGC bus tie	PPM DG	PPM EDG	PPM SHAFT	PPM SHORE	PPM BTB	PPU/GPC	GPU/GPU Hydro
Please note that all the DEIF-specific objects only have one instance, the instance number 1.																		
		x			x			Bit 12 = TB pos. OFF, ID 29	x	x	x							
		x			x			Bit 13 = TB pos. OFF, ID 30	x	x	x							
		x			x			Bit 14 = TB pos. OFF, ID 31	x	x	x							
		x			x			Bit 15 = TB pos. OFF, ID 32	x	x	x							
0x6A	204	x			x			Bit 0 = TB synchronising, ID 17	x	x	x							
		x			x			Bit 1 = TB synchronising, ID 18	x	x	x							
		x			x			Bit 2 = TB synchronising, ID 19	x	x	x							
		x			x			Bit 3 = TB synchronising, ID 20	x	x	x							
		x			x			Bit 4 = TB synchronising, ID 21	x	x	x							
		x			x			Bit 5 = TB synchronising, ID 22	x	x	x							
		x			x			Bit 6 = TB synchronising, ID 23	x	x	x							
		x			x			Bit 7 = TB synchronising, ID 24	x	x	x							
		x			x			Bit 8 = TB	x	x	x							

Class ID	Attribute ID	Type						Attribute name	Product									
		Read only	Write only	Signed	Word	Double word	Bit		AGC	AGC mains	AGC bus tie	PPM DG	PPM EDG	PPM SHAFT	PPM SHORE	PPM BTB	PPU/GPC	GPU/GPU Hydro
Please note that all the DEIF-specific objects only have one instance, the instance number 1.
								synchronising, ID 25										
		x			x			Bit 9 = TB synchronising, ID 26	x	x	x							
		x			x			Bit 10 = TB synchronising, ID 27	x	x	x							
		x			x			Bit 11 = TB synchronising, ID 28	x	x	x							
		x			x			Bit 12 = TB synchronising, ID 29	x	x	x							
		x			x			Bit 13 = TB synchronising, ID 30	x	x	x							
		x			x			Bit 14 = TB synchronising, ID 31	x	x	x							
		x			x			Bit 15 = TB synchronising, ID 32	x	x	x							
	205	x			x			Bit 0 = Any alarms, BTB ID 33	x	x	x	x	x	x	x	x		
		x			x			Bit 1 = Any alarms, BTB ID 34	x	x	x	x	x	x	x	x		
		x			x			Bit 2 = Any alarms, BTB ID 35	x	x	x	x	x	x	x	x		
		x			x			Bit 3 = Any alarms, BTB ID 36	x	x	x	x	x	x	x	x		
		x			x			Bit 4 = Any alarms, BTB ID 37	x	x	x	x	x	x	x	x		

Class ID	Attribute ID	Read only	Write only	Signed	Word	Double word	Bit	Attribute name	AGC	AGC mains	AGC bus tie	PPM DG	PPM EDG	PPM SHAFT	PPM SHORE	PPM BTB	PPU/GPC	GPU/GPU Hydro
				Type									**Product**						
								Please note that all the DEIF-specific objects only have one instance, the instance number 1.										
		x			x			Bit 5 = Any alarms, BTB ID 38	x	x	x	x	x	x	x	x		
		x			x			Bit 6 = Any alarms, BTB ID 39	x	x	x	x	x	x	x	x		
		x			x			Bit 7 = Any alarms, BTB ID 40	x	x	x	x	x	x	x	x		
0x6A	206	x			x			Bit 0 = BTB pos. ON, ID 33	x	x	x	x	x	x	x	x		
		x			x			Bit 1 = BTB pos. ON, ID 34	x	x	x	x	x	x	x	x		
		x			x			Bit 2 = BTB pos. ON, ID 35	x	x	x	x	x	x	x	x		
		x			x			Bit 3 = BTB pos. ON, ID 36	x	x	x	x	x	x	x	x		
		x			x			Bit 4 = BTB pos. ON, ID 37	x	x	x	x	x	x	x	x		
		x			x			Bit 5 = BTB pos. ON, ID 38	x	x	x	x	x	x	x	x		
		x			x			Bit 6 = BTB pos. ON, ID 39	x	x	x	x	x	x	x	x		
		x			x			Bit 7 = BTB pos. ON, ID 40	x	x	x	x	x	x	x	x		
0x6A	207	x			x			Bit 0 = BTB pos. OFF, ID 33	x	x	x	x	x	x	x	x		
		x			x			Bit 1 = BTB pos.	x	x	x	x	x	x	x	x		

Class ID	Attribute ID		Type						Attribute name	Product									
			Read only	Write only	Signed	Word	Double word	Bit		AGC	AGC mains	AGC bus tie	PPM DG	PPM EDG	PPM SHAFT	PPM SHORE	PPM BTB	PPU/GPC	GPU/GPU Hydro
Please note that all the DEIF-specific objects only have one instance, the instance number 1.																			
									OFF, ID 34										
			x			x			Bit 2 = BTB pos. OFF, ID 35	x	x	x	x	x	x	x	x		
			x			x			Bit 3 = BTB pos. OFF, ID 36	x	x	x	x	x	x	x	x		
			x			x			Bit 4 = BTB pos. OFF, ID 37	x	x	x	x	x	x	x	x		
			x			x			Bit 5 = BTB pos. OFF, ID 38	x	x	x	x	x	x	x	x		
			x			x			Bit 6 = BTB pos. OFF, ID 39	x	x	x	x	x	x	x	x		
			x			x			Bit 7 = BTB pos. OFF, ID 40	x	x	x	x	x	x	x	x		
0x6A	208		x			x			Bit 0 = BTB synchronising, ID 33	x	x	x	x	x	x	x	x		
			x			x			Bit 1 = BTB synchronising, ID 34	x	x	x	x	x	x	x	x		
			x			x			Bit 2 = BTB synchronising, ID 35	x	x	x	x	x	x	x	x		
			x			x			Bit 3 = BTB synchronising, ID 36	x	x	x	x	x	x	x	x		
			x			x			Bit 4 = BTB synchronising, ID 37	x	x	x	x	x	x	x	x		
			x			x			Bit 5 = BTB synchronising, ID 38	x	x	x	x	x	x	x	x		

Class ID	Attribute ID	Type						Attribute name	Product									
		Read only	Write only	Signed	Word	Double word	Bit		AGC	AGC mains	AGC bus tie	PPM DG	PPM EDG	PPM SHAFT	PPM SHORE	PPM BTB	PPU/GPC	GPU/GPU Hydro
Please note that all the DEIF-specific objects only have one instance, the instance number 1.																		
		x			x			Bit 6 = BTB synchronising, ID 39	x	x	x	x	x	x	x	x		
		x			x			Bit 7 = BTB synchronising, ID 40	x	x	x	x	x	x	x	x		
0x6A	209	x			x			Bit 0 = Ext. comm. error, ID 1	x	x	x	x	x	x	x	x		
		x			x			Bit 1 = Ext. comm. error, ID 2	x	x	x	x	x	x	x	x		
		x			x			Bit 2 = Ext. comm. error, ID 3	x	x	x	x	x	x	x	x		
		x			x			Bit 3 = Ext. comm. error, ID 4	x	x	x	x	x	x	x	x		
		x			x			Bit 4 = Ext. comm. error, ID 5	x	x	x	x	x	x	x	x		
		x			x			Bit 5 = Ext. comm. error, ID 6	x	x	x	x	x	x	x	x		
		x			x			Bit 6 = Ext. comm. error, ID 7	x	x	x	x	x	x	x	x		
		x			x			Bit 7 = Ext. comm. error, ID 8	x	x	x	x	x	x	x	x		
		x			x			Bit 8 = Ext. comm. error, ID 9	x	x	x	x	x	x	x	x		
		x			x			Bit 9 = Ext. comm. error, ID 10	x	x	x	x	x	x	x	x		
		x			x			Bit 10 = Ext. comm.	x	x	x	x	x	x	x	x		

Class ID	Attribute ID		Type					Attribute name	Product									
		Read only	Write only	Signed	Word	Double word	Bit		AGC	AGC mains	AGC bus tie	PPM DG	PPM EDG	PPM SHAFT	PPM SHORE	PPM BTB	PPU/GPC	GPU/GPU Hydro
Please note that all the DEIF-specific objects only have one instance, the instance number 1.																		
								error, ID 11										
		x			x			Bit 11 = Ext. comm. error, ID 12	x	x	x	x	x	x	x	x		
		x			x			Bit 12 = Ext. comm. error, ID 13	x	x	x	x	x	x	x	x		
		x			x			Bit 13 = Ext. comm. error, ID 14	x	x	x	x	x	x	x	x		
		x			x			Bit 14 = Ext. comm. error, ID 15	x	x	x	x	x	x	x	x		
		x			x			Bit 15 = Ext. comm. error, ID 16	x	x	x	x	x	x	x	x		
0x6A	210	x			x			Bit 0 = Ext. comm. error, ID 17	x	x	x	x	x	x	x	x		
		x			x			Bit 1 = Ext. comm. error, ID 18	x	x	x	x	x	x	x	x		
		x			x			Bit 2 = Ext. comm. error, ID 19	x	x	x	x	x	x	x	x		
		x			x			Bit 3 = Ext. comm. error, ID 20	x	x	x	x	x	x	x	x		
		x			x			Bit 4 = Ext. comm. error, ID 21	x	x	x	x	x	x	x	x		
		x			x			Bit 5 = Ext. comm. error, ID 22	x	x	x	x	x	x	x	x		
		x			x			Bit 6 = Ext. comm. error, ID 23	x	x	x	x	x	x	x	x		

Class ID	Attribute ID	Type						Attribute name	Product									
		Read only	Write only	Signed	Word	Double word	Bit		AGC	AGC mains	AGC bus tie	PPM DG	PPM EDG	PPM SHAFT	PPM SHORE	PPM BTB	PPU/GPC	GPU/GPU Hydro
Please note that all the DEIF-specific objects only have one instance, the instance number 1.																		
		x			x			Bit 7 = Ext. comm. error, ID 24	x	x	x	x	x	x	x	x		
		x			x			Bit 8 = Ext. comm. error, ID 25	x	x	x	x	x	x	x	x		
		x			x			Bit 9 = Ext. comm. error, ID 26	x	x	x	x	x	x	x	x		
		x			x			Bit 10 = Ext. comm. error, ID 27	x	x	x	x	x	x	x	x		
		x			x			Bit 11 = Ext. comm. error, ID 28	x	x	x	x	x	x	x	x		
		x			x			Bit 12 = Ext. comm. error, ID 29	x	x	x	x	x	x	x	x		
		x			x			Bit 13 = Ext. comm. error, ID 30	x	x	x	x	x	x	x	x		
		x			x			Bit 14 = Ext. comm. error, ID 31	x	x	x	x	x	x	x	x		
		x			x			Bit 15 = Ext. comm. error, ID 32	x	x	x	x	x	x	x	x		
0x6A	211	x			x			Bit 0 = Ext. comm. error, ID 33	x	x	x	x	x	x	x	x		
		x			x			Bit 1 = Ext. comm. error, ID 34	x	x	x	x	x	x	x	x		
		x			x			Bit 2 = Ext. comm. error, ID 35	x	x	x	x	x	x	x	x		
		x			x			Bit 3 = Ext. comm.	x	x	x	x	x	x	x	x		

Class ID	Attribute ID	Type						Attribute name	Product									
		Read only	Write only	Signed	Word	Double word	Bit		AGC	AGC mains	AGC bus tie	PPM DG	PPM EDG	PPM SHAFT	PPM SHORE	PPM BTB	PPU/GPC	GPU/GPU Hydro
Please note that all the DEIF-specific objects only have one instance, the instance number 1.																		
								error, ID 36										
		x			x			Bit 4 = Ext. comm. error, ID 37	x	x	x	x	x	x	x	x		
		x			x			Bit 5 = Ext. comm. error, ID 38	x	x	x	x	x	x	x	x		
		x			x			Bit 6 = Ext. comm. error, ID 39	x	x	x	x	x	x	x	x		
		x			x			Bit 7 = Ext. comm. error, ID 40	x	x	x	x	x	x	x	x		
0x6A	212	x			x			Bit 0 = EDG TB pos. ON, ID 1				x	x	x	x	x		
		x			x			Bit 1 = EDG TB pos. ON, ID 2				x	x	x	x	x		
		x			x			Bit 2 = EDG TB pos. ON, ID 3				x	x	x	x	x		
		x			x			Bit 3 = EDG TB pos. ON, ID 4				x	x	x	x	x		
		x			x			Bit 4 = EDG TB pos. ON, ID 5				x	x	x	x	x		
		x			x			Bit 5 = EDG TB pos. ON, ID 6				x	x	x	x	x		
		x			x			Bit 6 = EDG TB pos. ON, ID 7				x	x	x	x	x		
		x			x			Bit 7 = EDG TB pos. ON, ID 8				x	x	x	x	x		

Class ID	Attribute ID	Type						Attribute name	Product									
		Read only	Write only	Signed	Word	Double word	Bit		AGC	AGC mains	AGC bus tie	PPM DG	PPM EDG	PPM SHAFT	PPM SHORE	PPM BTB	PPU/GPC	GPU/GPU Hydro
Please note that all the DEIF-specific objects only have one instance, the instance number 1.
		x			x			Bit 8 = EDG TB pos. ON, ID 9				x	x	x	x	x		
		x			x			Bit 9 = EDG TB pos. ON, ID 10				x	x	x	x	x		
		x			x			Bit 10 = EDG TB pos. ON, ID 11				x	x	x	x	x		
		x			x			Bit 11 = EDG TB pos. ON, ID 12				x	x	x	x	x		
		x			x			Bit 12 = EDG TB pos. ON, ID 13				x	x	x	x	x		
		x			x			Bit 13 = EDG TB pos. ON, ID 14				x	x	x	x	x		
		x			x			Bit 14 = EDG TB pos. ON, ID 15				x	x	x	x	x		
		x			x			Bit 15 = EDG TB pos. ON, ID 16				x	x	x	x	x		
0x6A	213	x			x			Bit 0 = EDG TB pos. OFF, ID 1				x	x	x	x	x		
		x			x			Bit 1 = EDG TB pos. OFF, ID 2				x	x	x	x	x		
		x			x			Bit 2 = EDG TB pos. OFF, ID 3				x	x	x	x	x		
		x			x			Bit 3 = EDG TB pos. OFF, ID 4				x	x	x	x	x		
		x			x			Bit 4 = EDG TB pos.				x	x	x	x	x		

Class ID	Attribute ID	Type						Attribute name	Product									
		Read only	Write only	Signed	Word	Double word	Bit		AGC	AGC mains	AGC bus tie	PPM DG	PPM EDG	PPM SHAFT	PPM SHORE	PPM BTB	PPU/GPC	GPU/GPU Hydro
Please note that all the DEIF-specific objects only have one instance, the instance number 1.																		
								OFF, ID 5										
		x			x			Bit 5 = EDG TB pos. OFF, ID 6				x	x	x	x	x		
		x			x			Bit 6 = EDG TB pos. OFF, ID 7				x	x	x	x	x		
		x			x			Bit 7 = EDG TB pos. OFF, ID 8				x	x	x	x	x		
		x			x			Bit 8 = EDG TB pos. OFF, ID 9				x	x	x	x	x		
		x			x			Bit 9 = EDG TB pos. OFF, ID 10				x	x	x	x	x		
		x			x			Bit 10 = EDG TB pos. OFF, ID 11				x	x	x	x	x		
		x			x			Bit 11 = EDG TB pos. OFF, ID 12				x	x	x	x	x		
		x			x			Bit 12 = EDG TB pos. OFF, ID 13				x	x	x	x	x		
		x			x			Bit 13 = EDG TB pos. OFF, ID 14				x	x	x	x	x		
		x			x			Bit 14 = EDG TB pos. OFF, ID 15				x	x	x	x	x		
		x			x			Bit 15 = EDG TB pos. OFF, ID 16				x	x	x	x	x		
0x6A	214	x			x			Bit 0 = Shaft/shore running ID 17				x	x	x	x	x		

Class ID	Attribute ID	Type						Attribute name	Product									
		Read only	Write only	Signed	Word	Double word	Bit		AGC	AGC mains	AGC bus tie	PPM DG	PPM EDG	PPM SHAFT	PPM SHORE	PPM BTB	PPU/GPC	GPU/GPU Hydro
Please note that all the DEIF-specific objects only have one instance, the instance number 1.																		
		x			x			Bit 1 = Shaft/shore running ID 18				x	x	x	x	x		
		x			x			Bit 2 = Shaft/shore running ID 19				x	x	x	x	x		
		x			x			Bit 3 = Shaft/shore running ID 20				x	x	x	x			
0x6A	215	x			x			Bit 0 = BB Hz/V OK, ID 1	x	x	x	x	x	x	x	x		
		x			x			Bit 1 = BB Hz/V OK, ID 2	x	x	x	x	x	x	x	x		
		x			x			Bit 2 = BB Hz/V OK, ID 3	x	x	x	x	x	x	x	x		
		x			x			Bit 3 = BB Hz/V OK, ID 4	x	x	x	x	x	x	x	x		
		x			x			Bit 4 = BB Hz/V OK, ID 5	x	x	x	x	x	x	x	x		
		x			x			Bit 5 = BB Hz/V OK, ID 6	x	x	x	x	x	x	x	x		
		x			x			Bit 6 = BB Hz/V OK, ID 7	x	x	x	x	x	x	x	x		
		x			x			Bit 7 = BB Hz/V OK, ID 8	x	x	x	x	x	x	x	x		
		x			x			Bit 8 = BB Hz/V OK, ID 9	x	x	x	x	x	x	x	x		
		x			x			Bit 9 = BB Hz/V OK,	x	x	x	x	x	x	x	x		

Class ID	Attribute ID	Type						Attribute name	Product									
		Read only	Write only	Signed	Word	Double word	Bit		AGC	AGC mains	AGC bus tie	PPM DG	PPM EDG	PPM SHAFT	PPM SHORE	PPM BTB	PPU/GPC	GPU/GPU Hydro
Please note that all the DEIF-specific objects only have one instance, the instance number 1.																		
								ID 10										
		x			x			Bit 10 = BB Hz/V OK, ID 11	x	x	x	x	x	x	x	x		
		x			x			Bit 11 = BB Hz/V OK, ID 12	x	x	x	x	x	x	x	x		
		x			x			Bit 12 = BB Hz/V OK, ID 13	x	x	x	x	x	x	x	x		
		x			x			Bit 13 = BB Hz/V OK, ID 14	x	x	x	x	x	x	x	x		
		x			x			Bit 14 = BB Hz/V OK, ID 15	x	x	x	x	x	x	x	x		
		x			x			Bit 15 = BB Hz/V OK, ID 16	x	x	x	x	x	x	x	x		
0x6A	216	x			x			Bit 0 = BB Hz/V OK, ID 17	x	x	x	x	x	x	x	x		
		x			x			Bit 1 = BB Hz/V OK, ID 18	x	x	x	x	x	x	x	x		
		x			x			Bit 2 = BB Hz/V OK, ID 19	x	x	x	x	x	x	x	x		
		x			x			Bit 3 = BB Hz/V OK, ID 20	x	x	x	x	x	x	x	x		
		x			x			Bit 4 = BB Hz/V OK, ID 21	x	x	x							
		x			x			Bit 5 = BB Hz/V OK, ID 22	x	x	x							

Class ID	Attribute ID	Type						Attribute name	Product									
		Read only	Write only	Signed	Word	Double word	Bit		AGC	AGC mains	AGC bus tie	PPM DG	PPM EDG	PPM SHAFT	PPM SHORE	PPM BTB	PPU/GPC	GPU/GPU Hydro
Please note that all the DEIF-specific objects only have one instance, the instance number 1.
		x			x			Bit 6 = BB Hz/V OK, ID 23	x	x	x							
		x			x			Bit 7 = BB Hz/V OK, ID 24	x	x	x							
		x			x			Bit 8 = BB Hz/V OK, ID 25	x	x	x							
		x			x			Bit 9 = BB Hz/V OK, ID 26	x	x	x							
		x			x			Bit 10 = BB Hz/V OK, ID 27	x	x	x							
		x			x			Bit 11 = BB Hz/V OK, ID 28	x	x	x							
		x			x			Bit 12 = BB Hz/V OK, ID 29	x	x	x							
		x			x			Bit 13 = BB Hz/V OK, ID 30	x	x	x							
		x			x			Bit 14 = BB Hz/V OK, ID 31	x	x	x							
		x			x			Bit 15 = BB Hz/V OK, ID 32	x	x	x							
0x6A	217	x			x			Bit 0 = BB Hz/V OK, ID 33	x	x	x	x	x	x	x	x		
		x			x			Bit 1 = BB Hz/V OK, ID 34	x	x	x	x	x	x	x	x		
		x			x			Bit 2 = BB Hz/V OK,	x	x	x	x	x	x	x	x		

Class ID	Attribute ID	Type						Attribute name	Product									
		Read only	Write only	Signed	Word	Double word	Bit		AGC	AGC mains	AGC bus tie	PPM DG	PPM EDG	PPM SHAFT	PPM SHORE	PPM BTB	PPU/GPC	GPU/GPU Hydro
Please note that all the DEIF-specific objects only have one instance, the instance number 1.
								ID 35										
		x			x			Bit 3 = BB Hz/V OK, ID 36	x	x	x	x	x	x	x	x		
		x			x			Bit 4 = BB Hz/V OK, ID 37	x	x	x	x	x	x	x	x		
		x			x			Bit 5 = BB Hz/V OK, ID 38	x	x	x	x	x	x	x	x		
		x			x			Bit 6 = BB Hz/V OK, ID 39	x	x	x	x	x	x	x	x		
		x			x			Bit 7 = BB Hz/V OK, ID 40	x	x	x	x	x	x	x	x		
0x6A	218	x			x			Bit 0 = BB Hz/V present, ID 1	x	x	x	x	x	x	x	x		
		x			x			Bit 1 = BB Hz/V present, ID 2	x	x	x	x	x	x	x	x		
		x			x			Bit 2 = BB Hz/V present, ID 3	x	x	x	x	x	x	x	x		
		x			x			Bit 3 = BB Hz/V present, ID 4	x	x	x	x	x	x	x	x		
		x			x			Bit 4 = BB Hz/V present, ID 5	x	x	x	x	x	x	x	x		
		x			x			Bit 5 = BB Hz/V present, ID 6	x	x	x	x	x	x	x	x		
		x			x			Bit 6 = BB Hz/V present, ID 7	x	x	x	x	x	x	x	x		

Class ID	Attribute ID	Type						Attribute name	Product									
		Read only	Write only	Signed	Word	Double word	Bit		AGC	AGC mains	AGC bus tie	PPM DG	PPM EDG	PPM SHAFT	PPM SHORE	PPM BTB	PPU/GPC	GPU/GPU Hydro
Please note that all the DEIF-specific objects only have one instance, the instance number 1.																		
		x			x			Bit 7 = BB Hz/V present, ID 8	x	x	x	x	x	x	x	x		
		x			x			Bit 8 = BB Hz/V present, ID 9	x	x	x	x	x	x	x	x		
		x			x			Bit 9 = BB Hz/V present, ID 10	x	x	x	x	x	x	x	x		
		x			x			Bit 10 = BB Hz/V present, ID 11	x	x	x	x	x	x	x	x		
		x			x			Bit 11 = BB Hz/V present, ID 12	x	x	x	x	x	x	x	x		
		x			x			Bit 12 = BB Hz/V present, ID 13	x	x	x	x	x	x	x	x		
		x			x			Bit 13 = BB Hz/V present, ID 14	x	x	x	x	x	x	x	x		
		x			x			Bit 14 = BB Hz/V present, ID 15	x	x	x	x	x	x	x	x		
		x			x			Bit 15 = BB Hz/V present, ID 16	x	x	x	x	x	x	x	x		
0x6A	219	x			x			Bit 0 = BB Hz/V present, ID 17	x	x	x	x	x	x	x	x		
		x			x			Bit 1 = BB Hz/V present, ID 18	x	x	x	x	x	x	x	x		
		x			x			Bit 2 = BB Hz/V present, ID 19	x	x	x	x	x	x	x	x		
		x			x			Bit 3 = BB Hz/V	x	x	x	x	x	x	x	x		

Class ID	Attribute ID		Type						Attribute name	Product									
			Read only	Write only	Signed	Word	Double word	Bit		AGC	AGC mains	AGC bus tie	PPM DG	PPM EDG	PPM SHAFT	PPM SHORE	PPM BTB	PPU/GPC	GPU/GPU Hydro
Please note that all the DEIF-specific objects only have one instance, the instance number 1.
									present, ID 20										
			x			x			Bit 4 = BB Hz/V present, ID 21	x	x	x							
			x			x			Bit 5 = BB Hz/V present, ID 22	x	x	x							
			x			x			Bit 6 = BB Hz/V present, ID 23	x	x	x							
			x			x			Bit 7 = BB Hz/V present, ID 24	x	x	x							
			x			x			Bit 8 = BB Hz/V present, ID 25	x	x	x							
			x			x			Bit 9 = BB Hz/V present, ID 26	x	x	x							
			x			x			Bit 10 = BB Hz/V present, ID 27	x	x	x							
			x			x			Bit 11 = BB Hz/V present, ID 28	x	x	x							
			x			x			Bit 12 = BB Hz/V present, ID 29	x	x	x							
			x			x			Bit 13 = BB Hz/V present, ID 30	x	x	x							
			x			x			Bit 14 = BB Hz/V present, ID 31	x	x	x							
			x			x			Bit 15 = BB Hz/V present, ID 32	x	x	x							

Class ID	Attribute ID	Type						Attribute name	Product									
		Read only	Write only	Signed	Word	Double word	Bit		AGC	AGC mains	AGC bus tie	PPM DG	PPM EDG	PPM SHAFT	PPM SHORE	PPM BTB	PPU/GPC	GPU/GPU Hydro
Please note that all the DEIF-specific objects only have one instance, the instance number 1.																		
0x6A	220	x			x			Bit 0 = BB Hz/V present, ID 33	x	x	x	x	x	x	x			
		x			x			Bit 1 = BB Hz/V present, ID 34	x	x	x	x	x	x	x			
		x			x			Bit 2 = BB Hz/V present, ID 35	x	x	x	x	x	x	x			
		x			x			Bit 3 = BB Hz/V present, ID 36	x	x	x	x	x	x	x			
		x			x			Bit 4 = BB Hz/V present, ID 37	x	x	x	x	x	x	x			
		x			x			Bit 5 = BB Hz/V present, ID 38	x	x	x	x	x	x	x			
		x			x			Bit 6 = BB Hz/V present, ID 39	x	x	x	x	x	x	x			
		x			x			Bit 7 = BB Hz/V present, ID 40	x	x	x	x	x	x	x			
0x6A	221	x			x			Bit 0 = BA Hz/V OK, ID 32	x	x	x	x	x	x	x			
		x			x			Bit 1 = BA Hz/V OK, ID 33	x	x	x	x	x	x	x			
		x			x			Bit 2 = BA Hz/V OK, ID 34	x	x	x	x	x	x	x			
		x			x			Bit 3 = BA Hz/V OK, ID 35	x	x	x	x	x	x	x			
		x			x			Bit 4 = BA Hz/V OK,	x	x	x	x	x	x	x			

Class ID	Attribute ID		Type						Attribute name	Product									
			Read only	Write only	Signed	Word	Double word	Bit		AGC	AGC mains	AGC bus tie	PPM DG	PPM EDG	PPM SHAFT	PPM SHORE	PPM BTB	PPU/GPC	GPU/GPU Hydro
Please note that all the DEIF-specific objects only have one instance, the instance number 1.																			
									ID 36										
			x			x			Bit 5 = BA Hz/V OK, ID 37	x	x	x	x	x	x	x			
			x			x			Bit 6 = BA Hz/V OK, ID 38	x	x	x	x	x	x	x			
			x			x			Bit 7 = BA Hz/V OK, ID 39	x	x	x	x	x	x	x			
0x6A	222		x			x			Bit 0 = BA Hz/V present, ID 1			x	x	x	x	x			
			x			x			Bit 0 = Mains present, ID 1		x								
			x			x			Bit 0 = DG Hz/V present, ID 1	x									
			x			x			Bit 1 = BA Hz/V present, ID 2			x	x	x	x	x			
			x			x			Bit 1 = Mains present, ID 2		x								
			x			x			Bit 1 = DG Hz/V present, ID 2	x									
			x			x			Bit 2 = BA Hz/V present, ID 3			x	x	x	x	x			
			x			x			Bit 2 = Mains present, ID 3		x								
			x			x			Bit 2 = DG Hz/V present, ID 3	x									

Class ID	Attribute ID		Type						Attribute name	Product									
			Read only	Write only	Signed	Word	Double word	Bit		AGC	AGC mains	AGC bus tie	PPM DG	PPM EDG	PPM SHAFT	PPM SHORE	PPM BTB	PPU/GPC	GPU/GPU Hydro
Please note that all the DEIF-specific objects only have one instance, the instance number 1.																			
			x			x			Bit 3 = BA Hz/V present, ID 4			x	x	x	x	x			
			x			x			Bit 3 = Mains present, ID 4		x								
			x			x			Bit 3 = DG Hz/V present, ID 4	x									
			x			x			Bit 4 = BA Hz/V present, ID 5			x	x	x	x	x			
			x			x			Bit 4 = Mains present, ID 5		x								
			x			x			Bit 4 = DG Hz/V present, ID 5	x									
			x			x			Bit 5 = BA Hz/V present, ID 6			x	x	x	x	x			
			x			x			Bit 5 = Mains present, ID 6		x								
			x			x			Bit 5 = DG Hz/V present, ID 6	x									
			x			x			Bit 6 = BA Hz/V present, ID 7			x	x	x	x	x			
			x			x			Bit 6 = Mains present, ID 7		x								
			x			x			Bit 6 = DG Hz/V present, ID 7	x									
			x			x			Bit 7 = BA Hz/V			x	x	x	x	x			

Class ID	Attribute ID	Type						Attribute name	Product									
		Read only	Write only	Signed	Word	Double word	Bit		AGC	AGC mains	AGC bus tie	PPM DG	PPM EDG	PPM SHAFT	PPM SHORE	PPM BTB	PPU/GPC	GPU/GPU Hydro
Please note that all the DEIF-specific objects only have one instance, the instance number 1.																		
								present, ID 8										
		x			x			Bit 7 = Mains present, ID 8		x								
		x			x			Bit 7 = DG Hz/V present, ID 8	x									
		x			x			Bit 8 = BA Hz/V present, ID 9			x	x	x	x	x			
		x			x			Bit 8 = Mains present, ID 9		x								
		x			x			Bit 8 = DG Hz/V present, ID 9	x									
		x			x			Bit 9 = BA Hz/V present, ID 10			x	x	x	x	x			
		x			x			Bit 9 = Mains present, ID 10		x								
		x			x			Bit 9 = DG Hz/V present, ID 10	x									
		x			x			Bit 10 = BA Hz/V present, ID 11			x	x	x	x	x			
		x			x			Bit 10 = Mains present, ID 11		x								
		x			x			Bit 10 = DG Hz/V present, ID 11	x									
		x			x			Bit 11 = BA Hz/V present, ID 12			x	x	x	x	x			

Class ID	Attribute ID	Type						Attribute name	Product									
		Read only	Write only	Signed	Word	Double word	Bit		AGC	AGC mains	AGC bus tie	PPM DG	PPM EDG	PPM SHAFT	PPM SHORE	PPM BTB	PPU/GPC	GPU/GPU Hydro
Please note that all the DEIF-specific objects only have one instance, the instance number 1.																		
		x			x			Bit 11 = Mains present, ID 12		x								
		x			x			Bit 11 = DG Hz/V present, ID 12	x									
		x			x			Bit 12 = BA Hz/V present, ID 13			x	x	x	x	x			
		x			x			Bit 12 = Mains present, ID 13		x								
		x			x			Bit 12 = DG Hz/V present, ID 13	x									
		x			x			Bit 13 = BA Hz/V present, ID 14			x	x	x	x	x			
		x			x			Bit 13 = Mains present, ID 14		x								
		x			x			Bit 13 = DG Hz/V present, ID 14	x									
		x			x			Bit 14 = BA Hz/V present, ID 15			x	x	x	x	x			
		x			x			Bit 14 = Mains present, ID 15		x								
		x			x			Bit 14 = DG Hz/V present, ID 15	x									
		x			x			Bit 15 = BA Hz/V present, ID 16			x	x	x	x	x			
		x			x			Bit 15 = Mains		x								

Class ID	Attribute ID	Type						Attribute name	Product									
		Read only	Write only	Signed	Word	Double word	Bit		AGC	AGC mains	AGC bus tie	PPM DG	PPM EDG	PPM SHAFT	PPM SHORE	PPM BTB	PPU/GPC	GPU/GPU Hydro
Please note that all the DEIF-specific objects only have one instance, the instance number 1.																		
								present, ID 16										
		x			x			Bit 15 = DG Hz/V present, ID 16	x									
0x6A	223	x			x			Bit 0 = BA Hz/V present, ID 17			x	x	x	x	x			
		x			x			Bit 0 = Mains present, ID 17		x								
		x			x			Bit 0 = DG Hz/V present, ID 17	x									
		x			x			Bit 1 = BA Hz/V present, ID 18			x	x	x	x	x			
		x			x			Bit 1 = Mains present, ID 18		x								
		x			x			Bit 1 = DG Hz/V present, ID 18	x									
		x			x			Bit 2 = BA Hz/V present, ID 19			x	x	x	x	x			
		x			x			Bit 2 = Mains present, ID 19		x								
		x			x			Bit 2 = DG Hz/V present, ID 19	x									
		x			x			Bit 3 = BA Hz/V present, ID 20			x	x	x	x	x			
		x			x			Bit 3 = Mains present, ID 20		x								

Class ID	Attribute ID		Type						Attribute name	Product									
		Read only	Write only	Signed	Word	Double word	Bit			AGC	AGC mains	AGC bus tie	PPM DG	PPM EDG	PPM SHAFT	PPM SHORE	PPM BTB	PPU/GPC	GPU/GPU Hydro
Please note that all the DEIF-specific objects only have one instance, the instance number 1.																			
		x			x				Bit 3 = DG Hz/V present, ID 20	x									
		x			x				Bit 4 = BA Hz/V present, ID 21			x	x	x	x	x			
		x			x				Bit 4 = Mains present, ID 21		x								
		x			x				Bit 4 = DG Hz/V present, ID 21	x									
		x			x				Bit 5 = BA Hz/V present, ID 22				x						
		x			x				Bit 5 = Mains present, ID 22		x								
		x			x				Bit 5 = DG Hz/V present, ID 22	x									
		x			x				Bit 6 = BA Hz/V present, ID 23				x						
		x			x				Bit 6 = Mains present, ID 23		x								
		x			x				Bit 6 = DG Hz/V present, ID 23	x									
		x			x				Bit 7 = BA Hz/V present, ID 24				x						
		x			x				Bit 7 = Mains present, ID 24		x								
		x			x				Bit 7 = DG Hz/V	x									

Class ID	Attribute ID	Read only	Write only	Signed	Word	Double word	Bit	Attribute name	AGC	AGC mains	AGC bus tie	PPM DG	PPM EDG	PPM SHAFT	PPM SHORE	PPM BTB	PPU/GPC	GPU/GPU Hydro
								Type					**Product**					
								Please note that all the DEIF-specific objects only have one instance, the instance number 1.										
								present, ID 24										
		x			x			Bit 8 = BA Hz/V present, ID 25			x							
		x			x			Bit 8 = Mains present, ID 25		x								
		x			x			Bit 8 = DG Hz/V present, ID 25	x									
		x			x			Bit 9 = BA Hz/V present, ID 26			x							
		x			x			Bit 9 = Mains present, ID 26		x								
		x			x			Bit 9 = DG Hz/V present, ID 26	x									
		x			x			Bit 10 = BA Hz/V present, ID 27			x							
		x			x			Bit 10 = Mains present, ID 27		x								
		x			x			Bit 10 = DG Hz/V present, ID 27	x									
		x			x			Bit 11 = BA Hz/V present, ID 28			x							
		x			x			Bit 11 = Mains present, ID 28		x								
		x			x			Bit 11 = DG Hz/V present, ID 28	x									

Class ID	Attribute ID		Type						Attribute name	Product									
			Read only	Write only	Signed	Word	Double word	Bit		AGC	AGC mains	AGC bus tie	PPM DG	PPM EDG	PPM SHAFT	PPM SHORE	PPM BTB	PPU/GPC	GPU/GPU Hydro
Please note that all the DEIF-specific objects only have one instance, the instance number 1.																			
			x			x			Bit 12 = BA Hz/V present, ID 29			x							
			x			x			Bit 12 = Mains present, ID 29		x								
			x			x			Bit 12 = DG Hz/V present, ID 29	x									
			x			x			Bit 13 = BA Hz/V present, ID 30			x							
			x			x			Bit 13 = Mains present, ID 30		x								
			x			x			Bit 13 = DG Hz/V present, ID 30	x									
			x			x			Bit 14 = BA Hz/V present, ID 31			x							
			x			x			Bit 14 = Mains present, ID 31		x								
			x			x			Bit 14 = DG Hz/V present, ID 31	x									
			x			x			Bit 15 = BA Hz/V present, ID 32			x							
			x			x			Bit 15 = Mains present, ID 32		x								
			x			x			Bit 15 = DG Hz/V present, ID 32	x									
0x6A	224		x			x			Bit 0 = BA Hz/V			x	x	x	x	x	x		

Class ID	Attribute ID		Type						Attribute name	Product									
			Read only	Write only	Signed	Word	Double word	Bit		AGC	AGC mains	AGC bus tie	PPM DG	PPM EDG	PPM SHAFT	PPM SHORE	PPM BTB	PPU/GPC	GPU/GPU Hydro
Please note that all the DEIF-specific objects only have one instance, the instance number 1.																			
									present, ID 33										
			x			x			Bit 0 = Mains present, ID 33		x								
			x			x			Bit 0 = DG Hz/V present, ID 33	x									
			x			x			Bit 1 = BA Hz/V present, ID 34				x	x	x	x	x		
			x			x			Bit 1 = Mains present, ID 34		x								
			x			x			Bit 1 = DG Hz/V present, ID 34	x									
			x			x			Bit 2 = BA Hz/V present, ID 35				x	x	x	x	x		
			x			x			Bit 2 = Mains present, ID 35		x								
			x			x			Bit 2 = DG Hz/V present, ID 35	x									
			x			x			Bit 3 = BA Hz/V present, ID 36				x	x	x	x	x		
			x			x			Bit 3 = Mains present, ID 36		x								
			x			x			Bit 3 = DG Hz/V present, ID 36	x									
			x			x			Bit 4 = BA Hz/V present, ID 37				x	x	x	x	x		

Class ID	Attribute ID	Type						Attribute name	Product									
		Read only	Write only	Signed	Word	Double word	Bit		AGC	AGC mains	AGC bus tie	PPM DG	PPM EDG	PPM SHAFT	PPM SHORE	PPM BTB	PPU/GPC	GPU/GPU Hydro
Please note that all the DEIF-specific objects only have one instance, the instance number 1.																		
		x			x			Bit 4 = Mains present, ID 37		x								
		x			x			Bit 4 = DG Hz/V present, ID 37	x									
		x			x			Bit 5 = BA Hz/V present, ID 38				x	x	x	x	x		
		x			x			Bit 5 = Mains present, ID 38		x								
		x			x			Bit 5 = DG Hz/V present, ID 38	x									
		x			x			Bit 6 = BA Hz/V present, ID 39				x	x	x	x	x		
		x			x			Bit 6 = Mains present, ID 39		x								
		x			x			Bit 6 = DG Hz/V present, ID 39	x									
		x			x			Bit 7 = BA Hz/V present, ID 40				x	x	x	x	x		
		x			x			Bit 7 = Mains present, ID 40		x								
		x			x			Bit 7 = DG Hz/V present, ID 40	x									
0x6A	225	x			x			Bit 0 = EDG TB synchronising ID 1				x	x	x	x	x		
		x			x			Bit 1 = EDG TB				x	x	x	x	x		

Class ID	Attribute ID	Type						Attribute name	Product									
		Read only	Write only	Signed	Word	Double word	Bit		AGC	AGC mains	AGC bus tie	PPM DG	PPM EDG	PPM SHAFT	PPM SHORE	PPM BTB	PPU/GPC	GPU/GPU Hydro
Please note that all the DEIF-specific objects only have one instance, the instance number 1.																		
								synchronising ID 2										
		x			x			Bit 2 = EDG TB synchronising ID 3				x	x	x	x	x		
		x			x			Bit 3 = EDG TB synchronising ID 4				x	x	x	x	x		
		x			x			Bit 4 = EDG TB synchronising ID 5				x	x	x	x	x		
		x			x			Bit 5 = EDG TB synchronising ID 6				x	x	x	x	x		
		x			x			Bit 6 = EDG TB synchronising ID 7				x	x	x	x	x		
		x			x			Bit 7 = EDG TB synchronising ID 8				x	x	x	x	x		
		x			x			Bit 8 = EDG TB synchronising ID 9				x	x	x	x	x		
		x			x			Bit 9 = EDG TB synchronising ID 10				x	x	x	x	x		
		x			x			Bit 10 = EDG TB synchronising ID 11				x	x	x	x	x		
		x			x			Bit 11 = EDG TB synchronising ID 12				x	x	x	x	x		
		x			x			Bit 12 = EDG TB synchronising ID 13				x	x	x	x	x		
		x			x			Bit 13 = EDG TB synchronising ID 14				x	x	x	x	x		

Class ID	Attribute ID	Type						Attribute name	Product									
		Read only	Write only	Signed	Word	Double word	Bit		AGC	AGC mains	AGC bus tie	PPM DG	PPM EDG	PPM SHAFT	PPM SHORE	PPM BTB	PPU/GPC	GPU/GPU Hydro
Please note that all the DEIF-specific objects only have one instance, the instance number 1.
		x			x			Bit 14 = EDG TB synchronising ID 15				x	x	x	x	x		
		x			x			Bit 15 = EDG TB synchronising ID 16				x	x	x	x	x		

5. Applications

Configuration of the device

Electronic Data Sheet (EDS) - a file that contains configuration data for specific device types. An EDS file is an electronic description of all details of a CIP device that are relevant for the configuration of the device.

The EDS file can be downloaded to a PLC for configuring a device, but it is not mandatory as the paper documentation can also be used for this purpose. Please contact the DEIF support team for checking the availability of this Ethernet/IP EDS file.

Adding a Multi-line 2 unit as new module inside the Rockwell PLC RSLogix software if you do not have any EDS file for this

The module type to import must be the Generic Ethernet Module one:
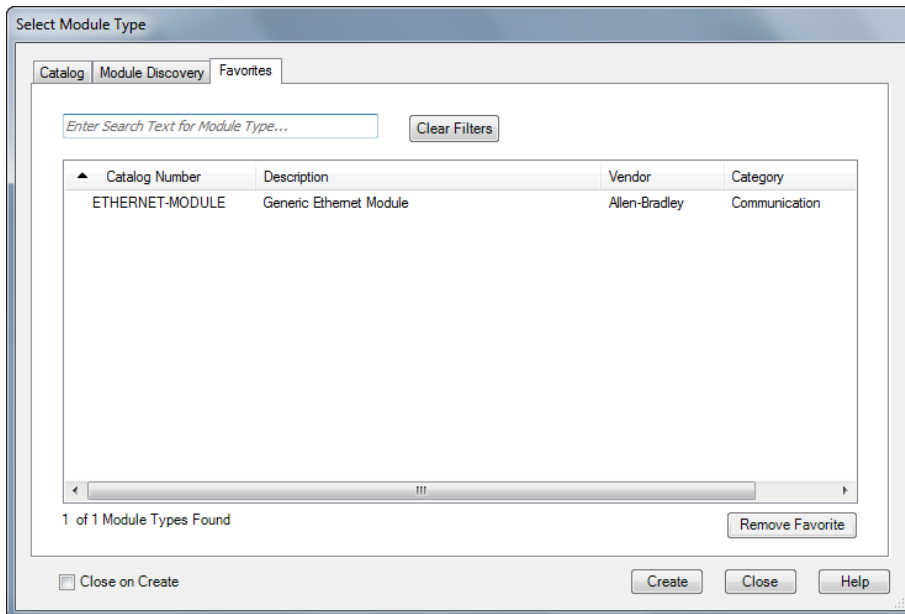
It must be configured in this way:
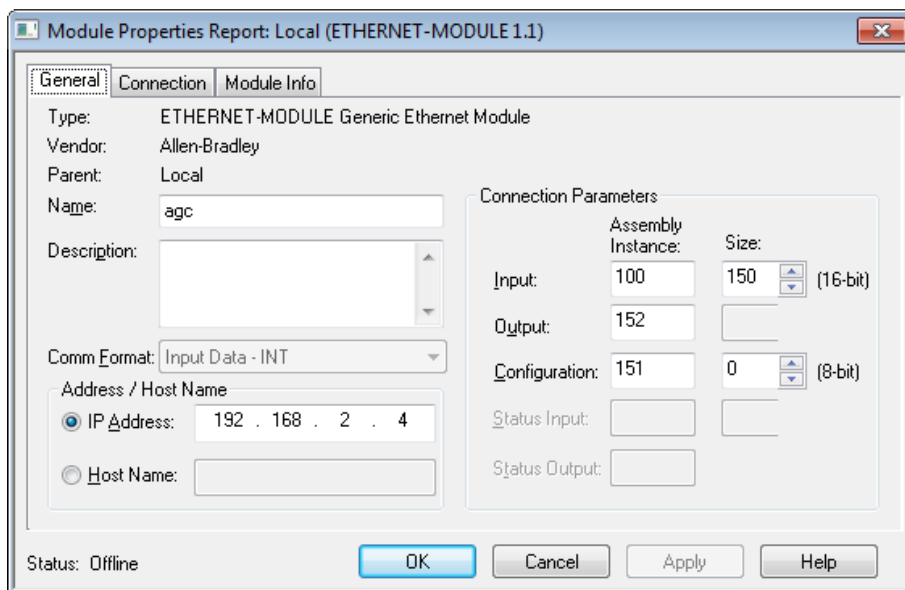
Input assembly instance must be 100 with a size of 150 words or 300 bytes.
Output assembly instance must be 152 without size.

Configuration assembly instance must be 151, but its size can be anything.
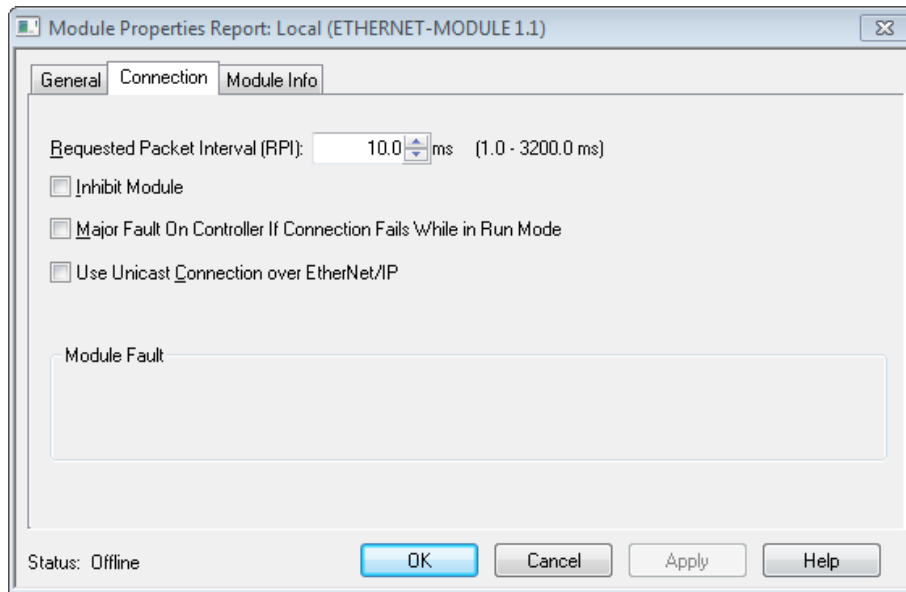
You can tick "Use Unicast Connection over Ethernet/IP" or leave it unticked. The RPI delay should not be lower than 10 ms.

Finally, you can check that this new module implicit data is now visible inside the controller tags:
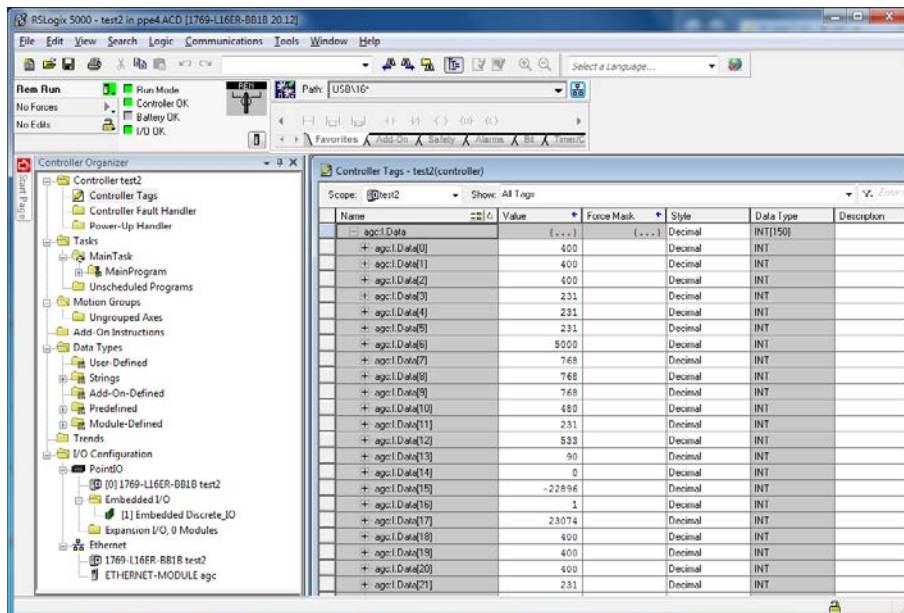
Using the EIPscan software (v2.2) with a DEIF Multi-line 2 unit

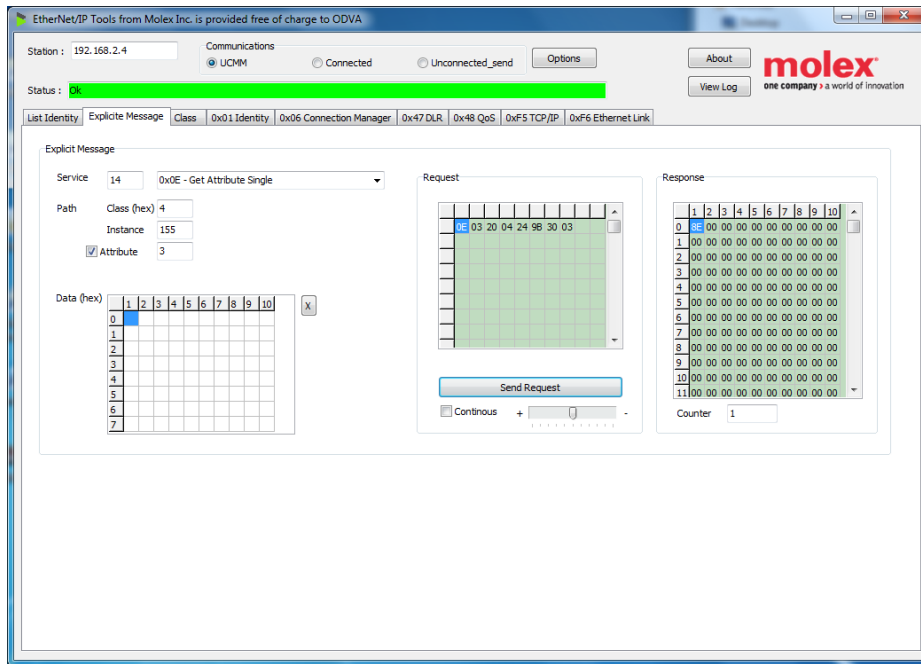Example 1: Reading the implicit data of a Multi-line 2 unit:
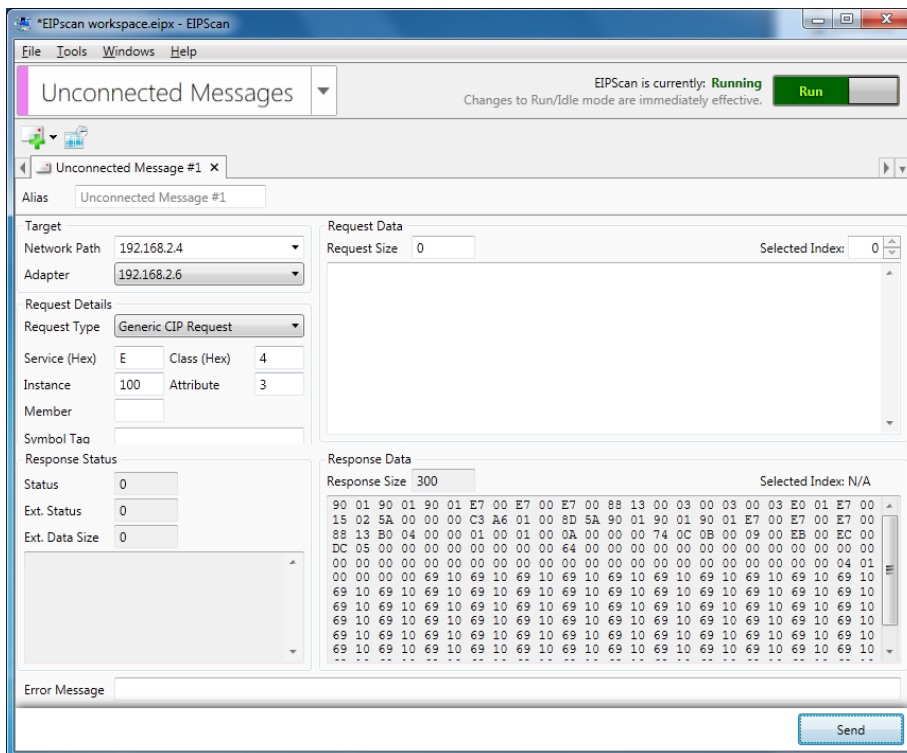
Example 2: Reading the power supply data (voltage on terminals 1 and 2) of a Multi-line 2 unit:
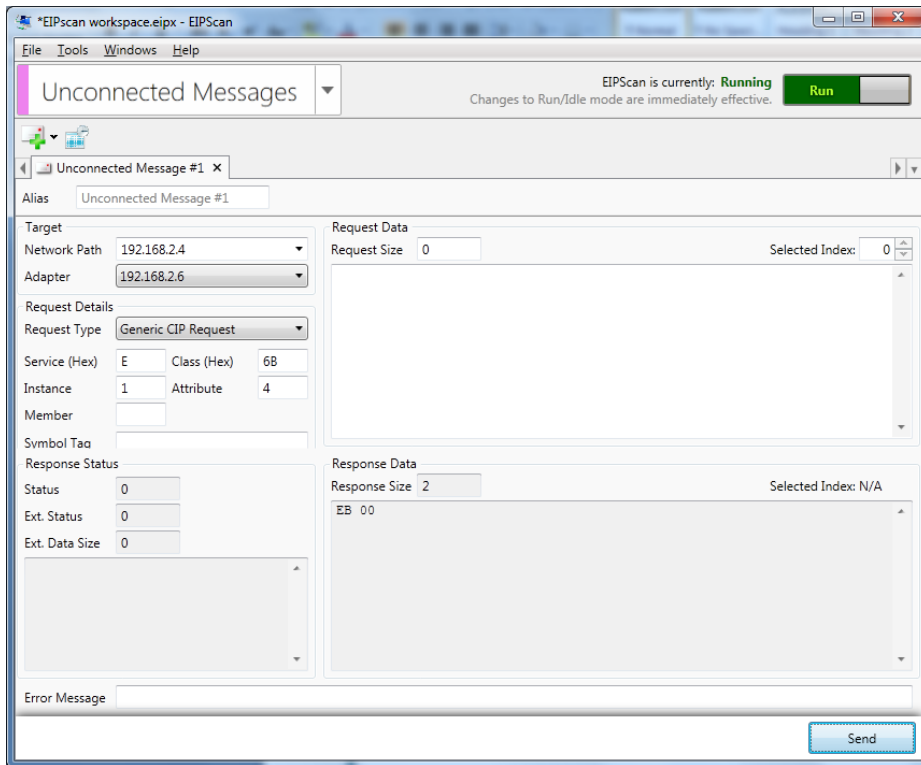
Using the Molex EIP tool software (v2v3) with a DEIF Multi-line 2 unit

Example: Reading the A alarms status of a Multi-line 2 unit:

DEIF A/S reserves the right to change any of the above.