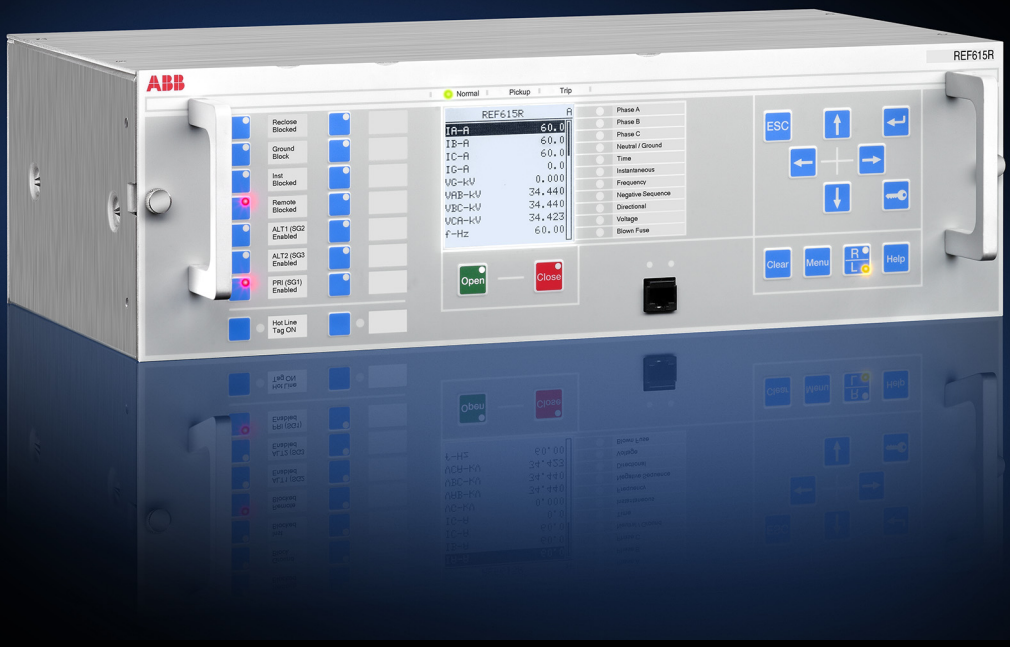

Relion® Protection and Control

Feeder Protection and Control
REF615R
Modbus Point List Manual

Power and productivity
for a better world™

Document ID: 1MRS240052-IB
Issued: 11/04/2016
Revision: B
Product version: 4.1

© Copyright 2016 ABB. All rights reserved.

Copyright

This document and parts thereof must not be reproduced or copied without written permission from ABB, and the contents thereof must not be imparted to a third party, nor used for any unauthorized purpose.

The software or hardware described in this document is furnished under a license and may be used, copied, or disclosed only in accordance with the terms of such license.

Trademarks

ABB and Relion are registered trademarks of ABB Group. All other brand or product names mentioned in this document may be trademarks or registered trademarks of their respective holders.

Warranty

Please inquire about the terms of warranty from your nearest ABB representative.

ABB Inc.
Distribution Automation
4300 Coral Ridge Drive
Coral Springs, FL 33065, USA
Toll-free: 1 (800) 523-2620
Phone: +1 954-752-6700
Fax: +1 954 345-5329
http://www.abb.com/substationautomation

Disclaimer

The data, examples and diagrams in this manual are included solely for the concept or product description and are not to be deemed as a statement of guaranteed properties. All persons responsible for applying the equipment addressed in this manual must satisfy themselves that each intended application is suitable and acceptable, including that any applicable safety or other operational requirements are complied with. In particular, any risks in applications where a system failure and/or product failure would create a risk for harm to property or persons (including but not limited to personal injuries or death) shall be the sole responsibility of the person or entity applying the equipment, and those so responsible are hereby requested to ensure that all measures are taken to exclude or mitigate such risks.

This product is designed to be connected and to communicate information and data via a network interface, which should be connected to a secure network. It is sole responsibility of person or entity responsible for network administration to ensure a secure connection to the network and to establish and maintain any appropriate measures (such as but not limited to the installation of firewalls, application of authentication measures, encryption of data, installation of anti virus programs, etc) to protect the product, the network, its system and the interface against any kind of security breaches, unauthorized access, interference, intrusion, leakage and/or theft of data or information. ABB is not liable for damages and/or losses related to such security breaches, unauthorized access, interference, intrusion, leakage and/or theft of data or information

This document has been carefully checked by ABB but deviations cannot be completely ruled out. In case any errors are detected, the reader is kindly requested to notify the manufacturer. Other than under explicit contractual commitments, in no event shall ABB be responsible or liable for any loss or damage resulting from the use of this manual or the application of the equipment.

Conformity

This product complies with the directive of the Council of the European Communities on the approximation of the laws of the Member States relating to electromagnetic compatibility (EMC Directive 2004/108/EC) and concerning electrical equipment for use within specified voltage limits (Low-voltage directive 2006/95/EC). This conformity is the result of tests conducted by ABB in accordance with the product standards EN 50263 and EN 60255-26 for the EMC directive, and with the product standards EN 60255-6 and EN 60255-27 for the low voltage directive. The protection relay is designed in accordance with the international standards of the IEC 60255 series and ANSI C37.90.

Table of contents

Section 1 Introduction 3
This manual 3
Intended audience 3
Product documentation 4
Product documentation set 4
Document revision history 5
Related documentation 5
Symbols and conventions 5
Safety indication symbols 5
Manual conventions 6
Functions, codes and symbols 6

Section 2 Modbus data mappings 11
Overview 11
Point list for REF615R v 4.0 11

Section 3 Glossary 105

Section 1 Introduction

1.1 This manual

The point list manual describes the outlook and properties of the data points specific to the protection relay. The manual should be used in conjunction with the corresponding communication protocol manual.

1.2 Intended audience

This manual addresses the communication system engineer or system integrator responsible for pre-engineering and engineering for communication setup in a substation from a protection relay perspective.

The system engineer or system integrator must have a basic knowledge of communication in protection and control systems and thorough knowledge of the specific communication protocol.

1.3 Product documentation

1.3.1 Product documentation set

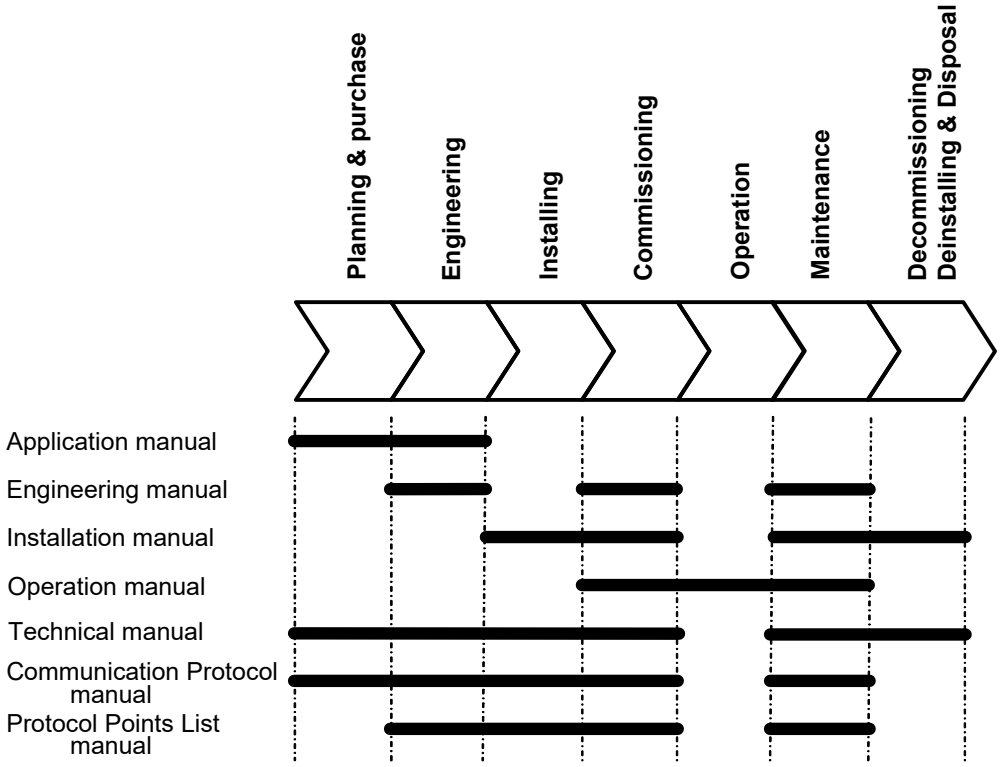

Figure 1: The intended use of manuals in different lifecycles

The engineering manual contains instructions on how to engineer the protection relays using the different tools in PCM600. The manual provides instructions on how to set up a PCM600 project and insert protection relays to the project structure. The manual also recommends a sequence for engineering of protection and control functions, LHMI functions as well as communication engineering for IEC 61850 and Modbus DNP3.

The installation manual contains instructions on how to install the protection relay. The manual provides procedures for mechanical and electrical installation. The chapters are organized in chronological order in which the protection relay should be installed.

The operation manual contains instructions on how to operate the protection relay once it has been commissioned. The manual provides instructions for monitoring, controlling and setting the protection relay. The manual also describes how to identify disturbances and how to view calculated and measured power grid data to determine the cause of a fault.

The application manual contains application descriptions and setting guidelines sorted per function. The manual can be used to find out when and for what purpose a typical protection function can be used. The manual can also be used when calculating settings.

The technical manual contains application and functionality descriptions and lists function blocks, logic diagrams, input and output signals, setting parameters and technical data

sorted per function. The manual can be used as a technical reference during the engineering phase, installation and commissioning phase, and during normal service.

The communication protocol manual describes a communication protocol supported by the protection relay. The manual concentrates on vendor-specific implementations. The point list manual describes the outlook and properties of the data points specific to the protection relay. The manual should be used in conjunction with the corresponding communication protocol manual.

1.3.2 Document revision history

Document revision/date	Product version	History
A/11/22/2013	4.0	First release
B/11/04/2016	4.1	Content update

Download the latest documents from the ABB web site http://www.abb.com/substationautomation.

1.3.3 Related documentation

Name of the document	Document ID
Modbus Communication Protocol Manual	1MRS240047-IB

1.4 Symbols and conventions

1.4.1 Safety indication symbols

The caution icon indicates important information or warning related to the concept discussed in the text. It might indicate the presence of a hazard which could result in corruption of software or damage to equipment or property.

The information icon alerts the reader to important facts and conditions.

The tip icon indicates advice on, for example, how to design your project or how to use a certain function.

Although warning hazards are related to personal injury, it should be understood that operation of damaged equipment could, under certain operational conditions, result in degraded process performance leading to personal injury or death. Therefore, comply fully with all warning and caution notices.

1.4.2 Manual conventions

Conventions used in protection relay manuals. A particular convention may not be used in this manual.

- Abbreviations and acronyms in this manual are spelled out in the glossary. The glossary also contains definitions of important terms.
- Push button navigation in the LHMI menu structure is presented by using the push button icons, for example:

  To navigate between the options, use and .
- HMI menu paths are presented in bold, for example:

  Select **Main menu > Settings**.
- LHMI messages are shown in Courier font, for example:

  To save the changes in non-volatile memory, select `Yes` and press .
- Parameter names are shown in italics, for example:

  The function can be enabled and disabled with the *Operation* setting.
- Parameter values are indicated with quotation marks, for example:

  The corresponding parameter values are "Enabled" and "Disabled".
- Protection relay input/output messages and monitored data names are shown in Courier font, for example:

  When the function picks up, the `PICKUP` output is set to TRUE.
- Dimensions are provided both in inches and mm. If it is not specifically mentioned then the dimension is in mm.

1.4.3 Functions, codes and symbols

Table 1: REF615R functions, codes and symbols

Function	IEC 61850	ANSI/C37.2	IEC 60617
Protection			
Three-phase non-directional overcurrent protection, low stage, instance 1	PHLPTOC1	51P-1	3I> (1)
Three-phase non-directional overcurrent protection, high stage, instance 1	PHHPTOC1	50P-1	3I>> (1)
Three-phase non-directional overcurrent protection, high stage, instance 2	PHHPTOC2	50P-2	3I>> (2)
Three-phase non-directional overcurrent protection, instantaneous stage, instance 1	PHIPTOC1	50P-3	3I>>> (1)
Three-phase non-directional long time overcurrent protection, low stage, instance 1	PHLTPTOC1	51LT	3I> (3)
Three-phase directional overcurrent protection, low stage, instance 1	DPHLPDOC1	67/51P	3I> -> (1)
Three-phase directional overcurrent protection, high stage, instance 1	DPHHPDOC1	67/50P-1	3I>> -> (1)
Three-phase directional overcurrent protection, high stage, instance 2	DPHHPDOC2	67/50P-2	3I>> -> (2)
Non-directional earth-fault protection, low stage, instance 1	EFLPTOC1	51G	Io> (1)

Function	IEC 61850	ANSI/C37.2	IEC 60617
Non-directional earth-fault protection, low stage, instance 2	EFLPTOC2	51N-1	Io> (2)
Non-directional earth-fault protection, low stage, instance 4	EFLPTOC4	50SEF	Io> (4)
Non-directional earth-fault protection, high stage, instance 1	EFHPTOC1	50G-1	Io>> (1)
Non-directional earth-fault protection, high stage, instance 2	EFHPTOC2	50G-2	Io>> (2)
Non-directional earth-fault protection, high stage, instance 3	EFHPTOC3	50N-1	Io>> (3)
Non-directional earth-fault protection, high stage, instance 4	EFHPTOC4	50N-2	Io>> (4)
Non-directional earth-fault protection, instantaneous stage, instance 1	EFIPTOC1	50G-3	Io>>> (1)
Non-directional earth-fault protection, instantaneous stage, instance 2	EFIPTOC2	50N-3	Io>>> (2)
Directional earth-fault protection, low stage, instance 1	DEFLPDEF1	67/51N	Io> -> (1)
Directional earth-fault protection, high stage, instance 1	DEFHPDEF1	67/50N-1	Io>> -> (1)
Directional earth-fault protection, high stage, instance 2	DEFHPDEF2	67/50N-2	Io>> -> (2)
Three phase directional power protection, instance 1	DPSRDIR1	32P-1	I1-> (1)
Ground directional power protection, instance 1	DNZSRDIR1	32N-1	I2 ->, Io-> (1)
Negative-sequence overcurrent protection, instance 1	NSPTOC1	46-1	I2> (1)
Negative-sequence overcurrent protection, instance 2	NSPTOC2	46-2	I2> (2)
Phase discontinuity protection	PDNSPTOC1	46PD	I2/I1>
Residual overvoltage protection, instance 1	ROVPTOV1	59G	Uo> (1)
Residual overvoltage protection, instance 2	ROVPTOV2	59N-1	Uo> (2)
Three-phase undervoltage protection, instance 1	PHPTUV1	27-1	3U< (1)
Three-phase undervoltage protection, instance 2	PHPTUV2	27-2	3U< (2)
Three-phase overvoltage protection, instance 1	PHPTOV1	59-1	3U> (1)
Three-phase overvoltage protection, instance 2	PHPTOV2	59-2	3U> (2)
Negative-sequence overvoltage protection, instance 1	NSPTOV1	47-1	U2> (1)
Negative-sequence overvoltage protection, instance 2	NSPTOV2	47-2	U2> (2)
Frequency protection, instance 1	FRPFRQ1	81-1	f>/f<,df/dt (1)
Frequency protection, instance 2	FRPFRQ2	81-2	f>/f<,df/dt (2)
Voltage per hertz protection, instance 1	OEPVPH1	24	U/f> (1)
Three-phase thermal protection for feeders, cables and distribution transformers, Instance 1	T1PTTR1	49F-1	3Ith>F (1)
Numerical stabilized low impedance restricted earth-fault protection	LREFPNDF1	87LOZREF	dIoLo>
Circuit breaker failure protection, instance 1	CCBRBRF1	50BF-1	3I>/Io>BF (1)
Three-phase inrush detector, instance 1	INRPHAR1	INR-1	3I2f> (1)
Master trip, instance 1	TRPPTRC1	86/94-1	Master Trip (1)
Master trip, instance 2	TRPPTRC2	86/94-2	Master Trip (2)
Arc protection, instance 1	ARCSARC1	AFD-1	ARC (1)
Arc protection, instance 2	ARCSARC2	AFD-2	ARC (2)

Function	IEC 61850	ANSI/C37.2	IEC 60617
Arc protection, instance 3	ARCSARC3	AFD-3	ARC (3)
High impedance fault detection	PHIZ1	HIZ	PHIZ1
Load shedding and restoration, instance 1	LSHDPFRQ1	81LSH-1	UFLS/R (1)
Load shedding and restoration, instance 2	LSHDPFRQ2	81LSH-2	UFLS/R (2)
Loss of phase, instance 1	PHPTUC1	37-1	3I< (1)
Control			
Circuit-breaker control, instance 1	CBXCBR1	52-1	I <-> O CB (1)
Auto-reclosing	DARREC1	79	O -> I
Synchronism and energizing check	SECRSYN1	25	SYNC
Condition Monitoring			
Circuit-breaker condition monitoring, instance 1	SSCBR1	52CM-1	CBCM (1)
Current circuit supervision	CCRDIF1	CCM	MCS 3I
Fuse failure supervision, instance 1	SEQRFUF1	60-1	FUSEF (1)
Cable fault detection	RCFD1	CFD	RCFD
Measurement			
Three-phase current measurement, instance 1	CMMXU1	IA, IB, IC	3I
Sequence current measurement, instance 1	CSMSQI1	I1, I2, I0	I1, I2, I0
Residual current measurement, instance 1	RESCMMXU1	IG	Io
Three-phase voltage measurement, instance 1	VMMXU1	VA, VB, VC	3U
Residual voltage measurement, instance 1	RESVMMXU1	VG	Uo
Sequence voltage measurement, instance 1	VSMSQI1	V1, V2, V0	U1, U2, U0
Single-phase power and energy measurement, instance 1	SPEMMXU1	SP, SE-1	SP, SE
Three-phase power and energy measurement, instance 1	PEMMXU1	P, E-1	P, E
Current total demand distortion, instance 1	CMHAI1	PQI-1	PQM3I
Voltage total harmonic distortion, instance 1	VMHAI1	PQVPH-1	PQM3U
Voltage variation, instance 1	PHQVVR1	PQSS-1	PQ 3U<>
Voltage unbalance, instance 1	VSQVUB1	PQVUB-1	PQMUBU(1)
Load profile	LDPMSTA1	LoadProf	-
Frequency measurement, instance 1	FMMXU1	f	f
Other Function			
Minimum pulse timer (2 pcs), instance 1	TPGAPC1	TP (1)	TP (1)
Minimum pulse timer (2 pcs), instance 2	TPGAPC2	TP (2)	TP (2)
Minimum pulse timer (2 pcs), instance 3	TPGAPC3	TP (3)	TP (3)
Minimum pulse timer (2 pcs), instance 4	TPGAPC4	TP (4)	TP (4)
Minimum pulse timer (2 pcs, second resolution), instance 1	TPSGAPC1	62CLD-1	TPS (1)
Minimum pulse timer (2 pcs, minute resolution), instance 1	TPMGAPC1	62CLD-2	TPM (1)
Pulse timer (8 pcs), instance 1	PTGAPC1	PT-1	PT (1)
Pulse timer (8 pcs), instance 2	PTGAPC2	PT-2	PT (2)

Function	IEC 61850	ANSI/C37.2	IEC 60617
Time delay off (8 pcs), instance 1	TOFGAPC1	TOF-1	TOF (1)
Time delay off (8 pcs), instance 2	TOFGAPC2	TOF-2	TOF (2)
Time delay on (8 pcs), instance 1	TONGAPC1	TON -1	TON (1)
Time delay on (8 pcs), instance 2	TONGAPC2	TON -2	TON (2)
Set reset (8 pcs), instance 1	SRGAPC1	SR-1	SR (1)
Set reset (8 pcs), instance 2	SRGAPC2	SR-2	SR (2)
Set reset (8 pcs), instance 3	SRGAPC3	SR-3	SR (3)
Set reset (8 pcs), instance 4	SRGAPC4	SR-4	SR (4)
Move (8 pcs), instance 1	MVGAPC1	MV-1	MV (1)
Move (8 pcs), instance 2	MVGAPC2	MV-2	MV (2)
Move (8 pcs), instance 3	MVGAPC3	MV-3	MV (3)
Move (8 pcs), instance 4	MVGAPC4	MV-4	MV (4)
Move (8 pcs), instance 5	MVGAPC5	MV-5	MV (5)
Move (8 pcs), instance 6	MVGAPC6	MV-6	MV (6)
Move (8 pcs), instance 7	MVGAPC7	MV-7	MV (7)
Move (8 pcs), instance 8	MVGAPC8	MV-8	MV (8)
Generic control points, instance 1	SPCGGIO1	CNTRL-1	SPC(1)
Generic control points, instance 2	SPCGGIO2	CNTRL-2	SPC(2)
Generic control points, instance 3	SPCGGIO3	CNTRL-3	SPC(3)
Remote Generic control points, instance 1	SPCRGGIO1	RCNTRL-1	SRCR(1)
Local Generic control points, instance 1	SPCLGGIO1	LCNTRL-1	SPCL(1)
Programmable buttons(16 buttons), instance 1	FKEYGGIO1	FKEY	FKEY
Generic Up-Down Counters, instance 1	UDFCNT1	CTR-1	CTR(1)
Generic Up-Down Counters, instance 2	UDFCNT2	CTR-2	CTR(2)
Generic Up-Down Counters, instance 3	UDFCNT3	CTR-3	CTR(3)
Shift register, instance 1	SHFTGAPC1	SHFT-1	SHFT(1)
Shift register, instance 2	SHFTGAPC2	SHFT-2	SHFT(2)
Shift register, instance 3	SHFTGAPC3	SHFT-3	SHFT(3)

Section 2 Modbus data mappings

2.1 Overview

This document describes the Modbus data points and structures available in REF615R Ver. 4.1 protection relay.

Point list table columns

Coil Addr (0x)	Coil (0x) PLC address
Input Add (1x)	Input (1x) PLC address
Register (:Bit) Addr (4x)	Register PLC address, and bit within register
Dc	Data category
MCD	Momentary Change Detect
Type	Register type and value interpretation; signed or unsigned
Scale	Scale factor, default value is 1
Offset	Offset factor, default value is 0
Description	Data description
IEC61850 Data Attribute Name	Protection relays internal IEC61850 signal name
Control Structure	Internal control structure identity
Control Register Addr	Register PLC Address, available for control operation
Control Bit Number	Control bit within control register for control operation
W	Writable Register

2.2 Point list for REF615R v 4.0

Table 2: System Status / Configuration Block

4x Register (:Bit) Addr.	Dc	Type	Scale	OffSet	Description	IEC61850 Data Attribute Name
129:0	0	u16	1	0	Selftest status	
129:1	0	u16	1	0	Contact Input Changed	
129:2	0	u16	1	0	spare	
129:3	0	u16	1	0	Remote Edit Disabled	
129:4	0	u16	1	0	Alternate 1 Settings Active	
129:5	0	u16	1	0	Alternate 2 Settings Active	
129:6	0	u16	1	0	New Fault Recorded	
129:7	0	u16	1	0	Control Power Cycled	

4x Register (:Bit) Addr.	Dc	Type	Scale	OffSet	Description	IEC61850 Data Attribute Name
129:8	0	u16	1	0	New Operation recorded	
129:9	0	u16	1	0	New peak demand value	
129:10	0	u16	1	0	New minimum demand value	
129:11	0	u16	1	0	Momentary changes	
129:(12-15)	0	u16	1	0	spare	
132:0	0	u16	1	0	0=Wye PT; 1=Delta PT;	
133 - 141	0	u16	1	0	Order code	
142:(15-8)					delimiter	
142:(0-7) - 143:(0-7)	0	u16	1	0	software revision number	
144:15-8					delimiter	
144:(0-7) - 151:(15-8)	0	u16	1	0	Front Panel Controller Software Version Number	
151:(0-7)					NULL	
152					spare	
153					spare	
154					spare	
155					spare	
156					spare	
157					spare	
158	0	u16	1	0	Phase CT Ratio	
159	0	u16	1	0	Neutral CT Ratio	
160	0	u16	1	0	PT Ratio	
161	0	u16	1	0	Last Power Fail Timestamp Year	
162	0	u16	1	0	Last Power Fail Timestamp Month	
163	0	u16	1	0	Last Power Fail Timestamp Day	
164	0	u16	1	0	Last Power Fail Timestamp Hour	
165	0	u16	1	0	Last Power Fail Timestamp Minutes	
166	0	u16	1	0	Last Power Fail Timestamp Seconds	
167	0	u16	1	0	Last Power Fail Timestamp Hundredths of Seconds	
168	0	u16	1	0	Last Power Fail Type: 1-Power Reset; 2 - Watchdog reset; 3- warm reset;	
169					spare	
170:(15:8)	0	u16	1	0	Heart Beat Counter	
170:06	0	u16	1	0	One or more unreported modbus event records	
171-to 179					spare	
184	0	u16	1	0	Disturbance recorder Number of recordings in the memory	DR.RDRE1.FltNum.stVal
185	0	u16	1	0	Physical device Number of Power ups	LD0.LPHD1.NumPwrUp.stVal
186	0	u16	1	0	Physical device Number of Warm starts	LD0.LPHD1.WrmStr.stVal
187	0	u16	1	0	Physical device Number of watchdog device resets detected	LD0.LPHD1.WacTrg.stVal

4x Register (:Bit) Addr.	Dc	Type	Scale	OffSet	Description	IEC61850 Data Attribute Name
189	0	u16	1	0	Control LLN0 LR state monitoring for PCM. 0: Off; 1: Local; 2: Remote;3: Station	CTRL.LLN0.LocRem.stVal
190					reserved	reserved
191	0	u16	1	0	Physical device protection relay warning *	LD0.LPHD1.PhyHealth1.stVal
192	0	u16	1	0	Physical device protection relay internal fault *	LD0.LPHD1.PhyHealth2.stVal
193					reserved	
194	0	u16	1	0	Disturbance recorder How much recording memory is currently used	DR.RDRE1.MemUsed.stVal
769	0	u16	1	0	number of un-read operational records.	
770	0	u16	1	0	number of un-read fault records	
9000	0	u16	1	0	System Status Register, (SSR1)*	
9001	0	u16	1	0	System Status Register, (SSR2)*	
9002	0	u16	1	0	System Status Register, (SSR3)*	
9003	0	u16	1	0	System Status Register, (SSR4)*	
9004	0	u16	1	0	System Status Register, (SSR5)*	
9005	0	u16	1	0	System Status Register, (SSR6)*	
9200 - 9285	0	u16	1	0	Device Information*	
* Please check Feeder Protection and Control REF615R Modbus Communication Protocol Manual to decode the register readings.						

Table 3: Select Parameter Setting Group Register

4x Register (:Bit) Addr.	W	Type	Scale	OffSet	Description	IEC61850 Data Attribute Name
1300	x	u16	1	0	Parameter Setting Group In Use	LD0.LLN0.SGCB.ActSG

Table 4: Device Real-Time clock in local Timer

4x Register (:Bit) Addr.	W	Type	Scale	OffSet	Description	IEC61850 Data Attribute Name
216	x	u16	1	0	Real-time struct - Control register(0..2)	
217	x	u16	1	0	Real-time struct - Year (2000-2999)	
218	x	u16	1	0	Real-time struct - Month (1..12)	
219	x	u16	1	0	Real-time struct - Day (1..31)	
220	x	u16	1	0	Real-time struct - Hour (0..23)	
221	x	u16	1	0	Real-time struct - Minute (0..59)	
222	x	u16	1	0	Real-time struct - Seconds (0..59)	
223	x	u16	1	0	Real-time struct - Milliseconds (0..999)	

Table 5: Device Real-Time clock in UTC Time

4x Register (:Bit) Addr.	W	Type	Scale	OffSet	Description	IEC61850 Data Attribute Name
224	x	u16	1	0	Real-time struct - Control register(0..2)	
225	x	u16	1	0	Real-time struct - Year (2000-2999)	
226	x	u16	1	0	Real-time struct - Month (1..12)	
227	x	u16	1	0	Real-time struct - Day (1..31)	

4x Register (:Bit) Addr.	W	Type	Scale	OffSet	Description	IEC61850 Data Attribute Name
228	x	u16	1	0	Real-time struct - Hour (0..23)	
229	x	u16	1	0	Real-time struct - Minute (0..59)	
230	x	u16	1	0	Real-time struct - Seconds (0..59)	
231	x	u16	1	0	Real-time struct - Milliseconds (0..999)	

Table 6: Event records

4x Register (:Bit) Addr.	W	Type	Scale	OffSet	Description	IEC61850 Data Attribute Name
1536	x	u16	1	0	Number of Events to Read per polling	
1537	x	u16	1	0	Data Control: 1= First record; 2= Next record; 3= Oldest unreported record; 5 = Clear display the record;	
1538		u16	1	0	Year	
1539		u16	1	0	Month	
1540		u16	1	0	Day	
1541		u16	1	0	Hours	
1542		u16	1	0	Minutes	
1543		u16	1	0	Seconds	
1544		u16	1	0	Hundredths of seconds	
1545		u16	1	0	Message #	
1546		u16	1	0	Value (high word)	
1547		u16	1	0	Value (low word)	
1548		u16	1	0	Area of the Register on which the event happened (0 = coil; 1= input, 4 = 4x)	
1549		u16	1	0	Register address on which the event happened	

Table 7: Fault records

4x Register (:Bit) Addr.	W	Dc	Type	Scale	Description	IEC61850 Data Attribute Name
1409	x		u16	1	Data Control: 1= First record; 2= Next record; 3= Oldest unreported record; 5 = Clear display the record;	
1410			u16	1	Fault Type Element(Table 7.1)	LD0.FLTMSTA1.ProFcn.stVal
1411			u16	1	Spare	
1412			u16	1	Fault sequence number after power up	
1413			u16	1	Year	
1414			u16	1	Month	
1415			u16	1	Day	
1416			u16	1	Hours	
1417			u16	1	Minutes	
1418			u16	1	Seconds	
1419			u16	1	Hundredths of Seconds	

4x Register (:Bit) Addr.	W	Dc	Type	Scale	Description	IEC61850 Data Attribute Name
1420		100	u16	100	FLTMSTA1 Phase A current	LD0.FLTMSTA1.AmpsA.mag.f
1421		100	u16	100	FLTMSTA1 Phase B current	LD0.FLTMSTA1.AmpsB.mag.f
1422		100	u16	100	FLTMSTA1 Phase C current	LD0.FLTMSTA1.AmpsC.mag.f
1423		100	u16	100	FLTMSTA1 Residual current	LD0.FLTMSTA1.AmpsN.mag.f
1424		100	u16	1	Current (I) Scale x	
1425					Spare	
1426					Spare	
1427					Spare	
1428					Spare	
1429					Spare	
1430		100	u16	100	FLTMSTA1 Positive sequence current	LD0.FLTMSTA1.AmpsPsSeq.mag.f
1431		100	u16	100	FLTMSTA1 Negative sequence current	LD0.FLTMSTA1.AmpsNgSeq.mag.f
1432					Spare	
1433					Spare	
1434					Spare	
1435		100	u16	100	FLTMSTA1 Phase A to phase B voltage	LD0.FLTMSTA1.VoltsAB.mag.f
1436		100	u16	100	FLTMSTA1 Phase B to phase C voltage	LD0.FLTMSTA1.VoltsBC.mag.f
1437		100	u16	100	FLTMSTA1 Phase C to phase A voltage	LD0.FLTMSTA1.VoltsCA.mag.f
1438					Spare	
1439					Spare	
1440					Spare	
1441		100	u16	100	FLTMSTA1 Positive sequence voltage	LD0.FLTMSTA1.VPsSeq.mag.f
1442		100	u16	100	FLTMSTA1 Negative sequence voltage	LD0.FLTMSTA1.VNgSeq.mag.f
1443					Spare	
1444					Spare	
1445		100	u16	10	FLTMSTA1 Distance to fault measured in pu	LD0.FLTMSTA1.FltDiskm.mag.f
1446		100	u32	100	FLTMSTA1 Fault Impedence high word	LD0.FLTMSTA1.FltZ.cVal.mag.f
1447					FLTMSTA1 Fault Impedence low word	
1448					Spare	
1449		100	u32	100	FLTMSTA1 Trip time high word	LD0.FLTMSTA1.OpTm.mag.f
1450		100			FLTMSTA1 Trip time low word	
1451					Spare	
1452		100	u16	1	Record Status Bit 0: 0=Wye, 1=Delta	
1453		100	u16	100	FLTMSTA1 Phase A voltage	LD0.FLTMSTA1.VoltsA.mag.f
1454		100	u16	100	FLTMSTA1 Phase B voltage	LD0.FLTMSTA1.VoltsB.mag.f
1455		100	u16	100	FLTMSTA1 Phase C voltage	LD0.FLTMSTA1.VoltsC.mag.f
1456					spare	
1457					spare	
1458					spare	

4x Register (:Bit) Addr.	W	Dc	Type	Scale	Description	IEC61850 Data Attribute Name
1459		100	u32	1	FLTMSTA1 total Fault record number high word	LD0.FLTMSTA1.OpCnt.stVal
1460					FLTMSTA1 total Fault record number low word	
1461					spare	
1462		100	u16	100	FLTMSTA1 Maximum pickup duration of all stages during the fault	LD0.FLTMSTA1.StrDur.mag.f
1463		100	u16	1	FLTMSTA1 Active setting group	LD0.FLTMSTA1.ActSG.stVal
1464		100	u16	1	FLTMSTA1 Autoreclosing shot pointer value	LD0.FLTMSTA1.ShotPntr.stVal
1465		100	u16	100	FLTMSTA1 Differential current residual	LD0.FLTMSTA1.DifAmpsN.mag.f
1466		100	u16	100	FLTMSTA1 Bias current residual	LD0.FLTMSTA1.RstAmpsN.mag.f
1467		100	u16	100	FLTMSTA1 Maximum phase A current	LD0.FLTMSTA1.MaxAmpsA.mag.f
1468		100	u16	100	FLTMSTA1 Maximum phase B current	LD0.FLTMSTA1.MaxAmpsB.mag.f
1469		100	u16	100	FLTMSTA1 Maximum phase C current	LD0.FLTMSTA1.MaxAmpsC.mag.f
1470		100	u16	100	FLTMSTA1 Maximum residual current	LD0.FLTMSTA1.MaxAmpsN.mag.f
1471		100	u16	100	FLTMSTA1 Calculated residual current	LD0.FLTMSTA1.AmpsNClc.mag.f
1472		100	u16	100	FLTMSTA1 Residual voltage	LD0.FLTMSTA1.VoltsN.mag.f
1473					spare	
1474		100	u16	100	FLTMSTA1 Zero sequence voltage	LD0.FLTMSTA1.VZroSeq.mag.f
1475					spare	
1476		100	u16	100	FLTMSTA1 49 calculated temperature of the protected object relative to the trip level	LD0.FLTMSTA1.MaxTmpRl.mag.f
1477		100	u32	100	FLTMSTA1 46PD ratio I2/I1 high word	LD0.FLTMSTA1.PDNS1MxRat.mag.f
1478					FLTMSTA1 46PD ratio I2/I1 low word	
1479		100	u16	100	FLTMSTA1 Frequency	LD0.FLTMSTA1.Hz.mag.f
1480		100	u16	100	FLTMSTA1 Frequency gradient	LD0.FLTMSTA1.HzS.mag.f
1481		100	u16	1	FLTMSTA1 Angle residual voltage - residual current	LD0.FLTMSTA1.DifNAngN.mag.f
1482		100	u16	1	FLTMSTA1 Angle phase B to phase C voltage - phase A current	LD0.FLTMSTA1.DifAAngBC.mag.f
1483		100	u16	1	FLTMSTA1 Angle phase C to phase A voltage - phase B current	LD0.FLTMSTA1.DifBAngCA.mag.f
1484		100	u16	1	FLTMSTA1 Angle phase A to phase B voltage - phase C current	LD0.FLTMSTA1.DifCAngAB.mag.f

Table 7.1 Fault Type Element

Fault Element Type (ANSI)	Fault number	Fault Element Type (IEC)	Description
51P-1	1	PHLPTOC1	Three-phase non-directional overcurrent protection, low stage, instance 1
51LT	5	PHLTPTOC1	Three-phase non-directional long time overcurrent protection, low stage, instance 1
50P-1	6	PHHPTOC1	Three-phase non-directional overcurrent protection, high stage, instance 1

Fault Element Type (ANSI)	Fault number	Fault Element Type (IEC)	Description
50P-2	7	PHHPTOC2	Three-phase non-directional overcurrent protection, high stage, instance 2
50P-3	12	PHIPTOC1	Three-phase non-directional overcurrent protection, instantaneous stage, instance 1
51G	17	EFLPTOC1	Non-directional earth-fault protection, low stage, instance 1
51N-1	18	EFLPTOC2	Non-directional earth-fault protection, low stage, instance 2
50SEF	20	EFLPTOC4	Non-directional earth-fault protection, low stage, instance 4
50G-1	22	EFHPTOC1	Non-directional earth-fault protection, high stage, instance 1
50G-2	23	EFHPTOC2	Non-directional earth-fault protection, high stage, instance 2
50N-1	24	EFHPTOC3	Non-directional earth-fault protection, high stage, instance 3
50N-2	25	EFHPTOC4	Non-directional earth-fault protection, high stage, instance 4
50G-3	30	EFIPTOC1	Non-directional earth-fault protection, instantaneous stage, instance 1
50N-3	31	EFIPTOC2	Non-directional earth-fault protection, instantaneous stage, instance 2
46-1	35	NSPTOC1	Negative-sequence overcurrent protection, instance 1
46-2	36	NSPTOC2	Negative-sequence overcurrent protection, instance 2
46PD	41	PDNSPTOC1	Phase discontinuity protection
49F-1	44	T1PTTR1	Three-phase thermal protection for feeders, cables and distribution transformers, Instance 1
67/51N	50	DEFLPDEF1	Directional earth-fault protection, low stage, instance 1
67/50N-1	53	DEFHPDEF1	Directional earth-fault protection, high stage, instance 1
67/50N-2	54	DEFHPDEF2	Directional earth-fault protection, high stage, instance 2
81-1	59	FRPFRQ1	Frequency protection, instance 1
81-2	60	FRPFRQ2	Frequency protection, instance 2
81LSH-1	65	LSHDPFRQ1	Load shedding and restoration, instance 1
81LSH-2	66	LSHDPFRQ2	Load shedding and restoration, instance 2
67/51P	71	DPHLPDOC1	Three-phase directional overcurrent protection, low stage, instance 1
67/50P-1	74	DPHHPDOC1	Three-phase directional overcurrent protection, high stage, instance 1
67/50P-2	75	DPHHPDOC2	Three-phase directional overcurrent protection, high stage, instance 2
87LOZREF	92	LREFPNDF1	Numerical stabilized low impedance restricted earth-fault protection
59G	100	ROVPTOV1	Residual overvoltage protection, instance 1
59N-1	101	ROVPTOV2	Residual overvoltage protection, instance 2
59-1	104	PHPTOV1	Three-phase overvoltage protection, instance 1
59-2	105	PHPTOV2	Three-phase overvoltage protection, instance 2
27-1	108	PHPTUV1	Three-phase undervoltage protection, instance 1
27-2	109	PHPTUV2	Three-phase undervoltage protection, instance 2
47-1	112	NSPTOV1	Negative-sequence overvoltage protection, instance 1
47-2	113	NSPTOV2	Negative-sequence overvoltage protection, instance 2
AFD-1	118	ARCSARC1	Arc protection, instance 1
AFD-2	119	ARCSARC2	Arc protection, instance 2
AFD-3	120	ARCSARC3	Arc protection, instance 3

Table 8: General Device Information (LPHD1)

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
		185	0		u16			Physical device Number of Power ups	LD0.LPHD1.NumPwrUp.stVal
		186	0		u16			Physical device Number of Warm starts	LD0.LPHD1.WrmStr.stVal
		187	0		u16			Physical device Number of watchdog device resets detected	LD0.LPHD1.WacTrg.stVal
		191	0		u16			Physical device protection relay warning *	LD0.LPHD1.PhyHealth1.stVal
		192	0		u16			Physical device protection relay internal fault *	LD0.LPHD1.PhyHealth2.stVal
* Please check Feeder Protection and Control REF615R Modbus Communication Protocol Manual to decode the register readings.									

Table 9: General Device Information (LLN0)

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
3		897:13						Device in ALARM state. 0= ALARM; 1=OK;	LD0.LLN0.Health.stVal
38		899:10	0					Protection LLN0 Settings change	LD0.LLN0.SetChg.stVal
166		925:10	0					Control LLN0 remote disabled	CTRL.LLN0.LocRem.stVal
167		925:09	0					Protection LLN0 Setting group 1 is active	LD0.LLN0.Act1SG.stVal
168		925:08	0					Protection LLN0 Setting group 2 is active	LD0.LLN0.Act2SG.stVal
169		925:07	0					Protection LLN0 Setting group 3 is active	LD0.LLN0.Act3SG.stVal
517								Device in ALARM state. 0= ALARM; 1=OK;	LD0.LLN0.Health.stVal
518				Yes					
587			2					Protection LLN0 Settings change	LD0.LLN0.SetChg.stVal
588				Yes					
843			0					Control LLN0 remote disabled	CTRL.LLN0.LocRem.stVal
844				Yes					
845			7					Protection LLN0 Setting group 1 is active	LD0.LLN0.Act1SG.stVal
846				Yes					
847			7					Protection LLN0 Setting group 2 is active	LD0.LLN0.Act2SG.stVal
848				Yes					
849			7					Protection LLN0 Setting group 3 is active	LD0.LLN0.Act3SG.stVal
850				Yes					
	42	907:06	0					Control LLN0 Local / Remote (1 - local; 0 - remote)	CTRL.LLN0.Loc.stVal

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
	595		0					Control LLN0 Local / Remote (1 - local; 0 - remote)	CTRL.LLN0.Loc.stVal
	596			Yes					
5020		2476:00	0					Protection LLN0 Settings reservation	LD0.LLN0.SetSeld.stVal
5021		2476:01	0	Yes					
		189			u16			Control LLN0 LR state monitoring for PCM. 0: Off; 1: Local; 2: Remote;3: Station	CTRL.LLN0.LocRem.stVal

Table 10: LED Condition monitoring (LEDPTRC1)

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
19		898:13	14					Global conditioning Trip phsA	LD0.LEDPTRC1.Op.phsA
20		898:12	14					Global conditioning Trip phsB	LD0.LEDPTRC1.Op.phsB
21		898:11	14					Global conditioning Trip phsC	LD0.LEDPTRC1.Op.phsC
25		898:07	14					Global conditioning Start	LD0.LEDPTRC1.Str.general
143		923:01	14					Global conditioning Trip general	LD0.LEDPTRC1.Op.general
549			14					Global conditioning Trip phsA	LD0.LEDPTRC1.Op.phsA
550				Yes					
551			14					Global conditioning Trip phsB	LD0.LEDPTRC1.Op.phsB
552				Yes					
553			14					Global conditioning Trip phsC	LD0.LEDPTRC1.Op.phsC
554				Yes					
561			14					Global conditioning Start	LD0.LEDPTRC1.Str.general
562				Yes					
797			14					Global conditioning Trip general	LD0.LEDPTRC1.Op.general
798				Yes					

Table 11: LED Status (LEDGGIO1)

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
144		923:00	0					Neutral Target Alarm	LD0.LEDGGIO1.ISCSO4.stVal
145		924:15	0					Time Target Energized	LD0.LEDGGIO1.ISCSO5.stVal
146		924:14	0					Instantaneous Target Energized	LD0.LEDGGIO1.ISCSO6.stVal
147		924:13	0					Negative Sequence Target Energized	LD0.LEDGGIO1.ISCSO7.stVal
148		924:12	0					Frequency Target Energized	LD0.LEDGGIO1.ISCSO8.stVal
149		924:11	0					Directional Target Energized	LD0.LEDGGIO1.ISCSO9.stVal
150		924:10	0					Voltage Target Energized	LD0.LEDGGIO1.ISCSO10.stVal
151		924:09	0					Distance Target Energized	LD0.LEDGGIO1.ISCSO11.stVal
2332		2173:06	0					Programmable LEDs Status of programmable LED 1	LD0.LEDGGIO1.ISCSO1.stVal

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
2333			0	Yes					
2334		2173:08	0					Programmable LEDs Status of programmable LED 2	LD0.LEDGGIO1.ISCSO2.stVal
2335			0	Yes					
2336		2173:10	0					Programmable LEDs Status of programmable LED 3	LD0.LEDGGIO1.ISCSO3.stVal
2337			0	Yes					
799			0					Neutral Target Alarm	LD0.LEDGGIO1.ISCSO4.stVal
800				Yes					
801			0					Time Target Energized	LD0.LEDGGIO1.ISCSO5.stVal
802				Yes					
803			0					Instantaneous Target Energized	LD0.LEDGGIO1.ISCSO6.stVal
804				Yes					
805			0					Negative Sequence Target Energized	LD0.LEDGGIO1.ISCSO7.stVal
806				Yes					
807			0					Frequency Target Energized	LD0.LEDGGIO1.ISCSO8.stVal
808				Yes					
809			0					Directional Target Energized	LD0.LEDGGIO1.ISCSO9.stVal
810				Yes					
811			0					Voltage Target Energized	LD0.LEDGGIO1.ISCSO10.stVal
812				Yes					
813			0					Distance Target Energized	LD0.LEDGGIO1.ISCSO11.stVal
814				Yes					
		5050	0		u16			Programmable LEDs Status of programmable LED 1	LD0.LEDGGIO1.ISCSO1.stVal
		5051	0		u16			Programmable LEDs Status of programmable LED 2	LD0.LEDGGIO1.ISCSO2.stVal
		5052	0		u16			Programmable LEDs Status of programmable LED 3	LD0.LEDGGIO1.ISCSO3.stVal
		5053	0		u16			Programmable LEDs Status of programmable LED 4	LD0.LEDGGIO1.ISCSO4.stVal
		5054	0		u16			Programmable LEDs Status of programmable LED 5	LD0.LEDGGIO1.ISCSO5.stVal
		5055	0		u16			Programmable LEDs Status of programmable LED 6	LD0.LEDGGIO1.ISCSO6.stVal
		5056	0		u16			Programmable LEDs Status of programmable LED 7	LD0.LEDGGIO1.ISCSO7.stVal
		5057	0		u16			Programmable LEDs Status of programmable LED 8	LD0.LEDGGIO1.ISCSO8.stVal
		5058	0		u16			Programmable LEDs Status of programmable LED 9	LD0.LEDGGIO1.ISCSO9.stVal
		5059	0		u16			Programmable LEDs Status of programmable LED 10	LD0.LEDGGIO1.ISCSO10.stVal

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
		5060	0		u16			Programmable LEDs Status of programmable LED 11	LD0.LEDGGIO1.ISCSO11.stVal

Table 12: XUGGIO1xx : Standard BO card

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
265		913:07	8					Output 6 Contact Status (X100-PSM Connectors 17-18)	LD0.XUGGIO100.SPCSO6.stVal
266		913:06	8					Output 5 Contact Status (X100-PSM Connectors 19-20)	LD0.XUGGIO100.SPCSO5.stVal
267		913:05	8					Output 4 Contact Status (X100-PSM Connectors 21-22)	LD0.XUGGIO100.SPCSO4.stVal
268		913:04	8					Output 3 Contact Status (X100-PSM Connectors 23-24)	LD0.XUGGIO100.SPCSO3.stVal
269		913:03	8					Output 2 Contact Status (X110-BIO Connectors 25c-26no-26nc)	LD0.XUGGIO110.SPCSO2.stVal
270		913:02	8					Output 1 Contact Status (X110-BIO Connectors 27c-28no-28nc)	LD0.XUGGIO110.SPCSO1.stVal
272		913:00	8					Trip Contact Status (X100-PSM Connectors 29c-30nc-30no)	LD0.XUGGIO100.SPCSO1.stVal
1041			8					Output 6 Contact Status (X100-PSM Connectors 17-18)	LD0.XUGGIO100.SPCSO6.stVal
1042				Yes					
1043			8					Output 5 Contact Status (X100-PSM Connectors 19-20)	LD0.XUGGIO100.SPCSO5.stVal
1044				Yes					
1045			8					Output 4 Contact Status (X100-PSM Connectors 21-22)	LD0.XUGGIO100.SPCSO4.stVal
1046				Yes					
1047			8					Output 3 Contact Status (X100-PSM Connectors 23-24)	LD0.XUGGIO100.SPCSO3.stVal
1048				Yes					
1049			8					Output 2 Contact Status (X110-BIO Connectors 25c-26no-26nc)	LD0.XUGGIO110.SPCSO2.stVal
1050				Yes					
1051			8					Output 1 Contact Status (X110-BIO Connectors 27c-28no-28nc)	LD0.XUGGIO110.SPCSO1.stVal
1052				Yes					

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
1055			8					Trip Contact Status (X100-PSM Connectors 29c-30nc-30no)	LD0.XUGGIO100.SPCSO1.stVal
1056				Yes					

Table 13: XBUGGIO1xx : High speed BO card

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
281		935:07	8					Output 6 Contact Status (X110-BIO-H Connectors 17-18)	LD0.XBUGGIO110.SPCSO6.stVal
282		935:06	8					Output 5 Contact Status (X110-BIO-H Connectors 19-20)	LD0.XBUGGIO110.SPCSO5.stVal
283		935:05	8					Output 4 Contact Status (X110-BIO-H Connectors 21-22)	LD0.XBUGGIO110.SPCSO4.stVal
284		935:04	8					Output 3 Contact Status (X100-PSM Connectors 23-24)	LD0.XBUGGIO100.SPCSO3.stVal
285		935:03	8					Output 2 Contact Status (X100-PSM Connectors 25-26)	LD0.XBUGGIO100.SPCSO2.stVal
286		935:02	8					Output 1 Contact Status (X100-PSM Connectors 27-28)	LD0.XBUGGIO100.SPCSO1.stVal
288		935:00	8					Trip Contact Status (X100-PSM Connectors 29c-30nc-30no)	LD0.XBUGGIO100.SPCSO4.stVal
1073			8					Output 6 Contact Status (X110-BIO-H Connectors 17-18)	LD0.XBUGGIO110.SPCSO6.stVal
1074				Yes					
1075			8					Output 5 Contact Status (X110-BIO-H Connectors 19-20)	LD0.XBUGGIO110.SPCSO5.stVal
1076				Yes					
1077			8					Output 4 Contact Status (X110-BIO-H Connectors 21-22)	LD0.XBUGGIO110.SPCSO4.stVal
1078				Yes					
1079			8					Output 3 Contact Status (X100-PSM Connectors 23-24)	LD0.XBUGGIO100.SPCSO3.stVal
1080				Yes					
1081			8					Output 2 Contact Status (X100-PSM Connectors 25-26)	LD0.XBUGGIO100.SPCSO2.stVal
1082				Yes					
1083			8					Output 1 Contact Status (X100-PSM Connectors 27-28)	LD0.XBUGGIO100.SPCSO1.stVal

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
1084				Yes					
1087			8					Trip Contact Status (X100-PSM Connectors 29c-30nc-30no)	LD0.XBUGGIO100.SPCSO4.stVal
1088				Yes					

Table 14: BIO (X110) standard BO card (XUGGIO110)

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
	262	914:10	1					Input 8 Input Closed (X110-BIO Connectors 12-13c)	LD0.XUGGIO110.Ind8.stVal
	263	914:09	1					Input 7 Input Closed (X110-BIO Connectors 10-11c)	LD0.XUGGIO110.Ind7.stVal
	264	914:08	1					Input 6 Input Closed (X110-BIO Connectors 9-3c)	LD0.XUGGIO110.Ind6.stVal
	265	914:07	1					Input 5 Input Closed (X110-BIO Connectors 8-3c)	LD0.XUGGIO110.Ind5.stVal
	266	914:06	1					Input 4 Input Closed (X110-BIO Connectors 7-3c)	LD0.XUGGIO110.Ind4.stVal
	267	914:05	1					Input 3 Input Closed (X110-BIO Connectors 6-3c)	LD0.XUGGIO110.Ind3.stVal
	268	914:04	1					Input 2 Input Closed (X110-BIO Connectors 5-3c)	LD0.XUGGIO110.Ind2.stVal
	269	914:03	1					Input 1 Input Closed (X110-BIO Connectors 4-3c)	LD0.XUGGIO110.Ind1.stVal
	1035		1					Input 8 Input Closed (X110-BIO Connectors 12-13c)	LD0.XUGGIO110.Ind8.stVal
	1036			Yes					
	1037		1					Input 7 Input Closed (X110-BIO Connectors 10-11c)	LD0.XUGGIO110.Ind7.stVal
	1038			Yes					
	1039		1					Input 6 Input Closed (X110-BIO Connectors 9-3c)	LD0.XUGGIO110.Ind6.stVal
	1040			Yes					
	1041		1					Input 5 Input Closed (X110-BIO Connectors 8-3c)	LD0.XUGGIO110.Ind5.stVal
	1042			Yes					
	1043		1					Input 4 Input Closed (X110-BIO Connectors 7-3c)	LD0.XUGGIO110.Ind4.stVal
	1044			Yes					
	1045		1					Input 3 Input Closed (X110-BIO Connectors 6-3c)	LD0.XUGGIO110.Ind3.stVal
	1046			Yes					
	1047		1					Input 2 Input Closed (X110-BIO Connectors 5-3c)	LD0.XUGGIO110.Ind2.stVal
	1048			Yes					

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
	1049		1					Input 1 Input Closed (X110-BIO Connectors 4-3c)	LD0.XUGGIO110.Ind1.stVal
	1050			Yes					

Table 15: BIO (X110) HSO card (XBUGGIO110)

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
	278	931:10	1					Input 8 Input Closed (X110-BIO-H Connectors 12-13c)	LD0.XBUGGIO110.Ind8.stVal
	279	931:09	1					Input 7 Input Closed (X110-BIO-H Connectors 10-11c)	LD0.XBUGGIO110.Ind7.stVal
	280	931:08	1					Input 6 Input Closed (X110-BIO-H Connectors 9-3c)	LD0.XBUGGIO110.Ind6.stVal
	281	931:07	1					Input 5 Input Closed (X110-BIO-H Connectors 8-3c)	LD0.XBUGGIO110.Ind5.stVal
	282	931:06	1					Input 4 Input Closed (X110-BIO-H Connectors 7-3c)	LD0.XBUGGIO110.Ind4.stVal
	283	931:05	1					Input 3 Input Closed (X110-BIO-H Connectors 6-3c)	LD0.XBUGGIO110.Ind3.stVal
	284	931:04	1					Input 2 Input Closed (X110-BIO-H Connectors 5-3c)	LD0.XBUGGIO110.Ind2.stVal
	285	931:03	1					Input 1 Input Closed (X110-BIO-H Connectors 4-3c)	LD0.XBUGGIO110.Ind1.stVal
	1067		1					Input 8 Input Closed (X110-BIO-H Connectors 12-13c)	LD0.XBUGGIO110.Ind8.stVal
	1068			Yes					
	1069		1					Input 7 Input Closed (X110-BIO-H Connectors 10-11c)	LD0.XBUGGIO110.Ind7.stVal
	1070			Yes					
	1071		1					Input 6 Input Closed (X110-BIO-H Connectors 9-3c)	LD0.XBUGGIO110.Ind6.stVal
	1072			Yes					
	1073		1					Input 5 Input Closed (X110-BIO-H Connectors 8-3c)	LD0.XBUGGIO110.Ind5.stVal
	1074			Yes					
	1075		1					Input 4 Input Closed (X110-BIO-H Connectors 7-3c)	LD0.XBUGGIO110.Ind4.stVal
	1076			Yes					

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
	1077		1					Input 3 Input Closed (X110-BIO-H Connectors 6-3c)	LD0.XBUGGIO110.Ind3.stVal
	1078			Yes					
	1079		1					Input 2 Input Closed (X110-BIO-H Connectors 5-3c)	LD0.XBUGGIO110.Ind2.stVal
	1080			Yes					
	1081		1					Input 1 Input Closed (X110-BIO-H Connectors 4-3c)	LD0.XBUGGIO110.Ind1.stVal
	1082			Yes					

Table 16: XAUGGIO130 : AIM (X130) 5VT with 4 BI (XAUGGIO130)

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
	293	932:11	1					Input 11 Input Closed (X130-AIM Connectors 43-44)	LD0.XAUGGIO130.Ind11.stVal
	294	932:10	1					Input 10 Input Closed (X130-AIM Connectors 41-42)	LD0.XAUGGIO130.Ind10.stVal
	295	932:09	1					Input 9 Input Closed (X130-AIM Connectors 39-40)	LD0.XAUGGIO130.Ind09.stVal
	1097		1					Input 11 Input Closed (X130-AIM Connectors 43-44)	LD0.XAUGGIO130.Ind11.stVal
	1098			Yes					
	1099		1					Input 10 Input Closed (X130-AIM Connectors 41-42)	LD0.XAUGGIO130.Ind10.stVal
	1100			Yes					
	1101		1					Input 9 Input Closed (X130-AIM Connectors 39-40)	LD0.XAUGGIO130.Ind09.stVal
	1102			Yes					

Table 17: 51P-1 : Three-phase non-directional overcurrent protection low stage instance 1 (PHLPTOC1)

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
12		897:04	2					51P Trip	LD0.PHLPTOC1.Op.general
535			2					51P Trip	LD0.PHLPTOC1.Op.general
536				Yes					
3400		2224:00	2					51P Trip phsA	LD0.PHLPTOC1.Op.phsA
3401		2224:01		Yes					
3402		2224:02	2					51P Trip phsB	LD0.PHLPTOC1.Op.phsB
3403		2224:03		Yes					
3404		2224:04	2					51P Trip phsC	LD0.PHLPTOC1.Op.phsC
3405		2224:05		Yes					
	2300	2326:00	0					51P Enable signal for current multiplier	LD0.PHLPTOC1.InEnaMult.stVal
	2301	2326:01		Yes					

Table 18: 50P-1 : Three-phase non-directional overcurrent protection high stage instance 1 (PHHPTOC1)

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
6		897:10	2					50P-1 Trip	LD0.PHHPTOC1.Op.general
523			2					50P-1 Trip	LD0.PHHPTOC1.Op.general
524				Yes					
3406		2224:06	2					50P-1 Trip phsA	LD0.PHHPTOC1.Op.phsA
3407		2224:07		Yes					
3408		2224:08	2					50P-1 Trip phsB	LD0.PHHPTOC1.Op.phsB
3409		2224:09		Yes					
3410		2224:10	2					50P-1 Trip phsC	LD0.PHHPTOC1.Op.phsC
3411		2224:11		Yes					
	2302	2326:02	0					50P-1 Enable signal for current multiplier	LD0.PHHPTOC1.InEnaMult.stVal
	2303	2326:03		Yes					

Table 19: 50P-2 : Three-phase non-directional overcurrent protection high stage instance 2 (PHHPTOC2)

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
8		897:08	2					50P-2 Trip	LD0.PHHPTOC2.Op.general
527			2					50P-2 Trip	LD0.PHHPTOC2.Op.general
528				Yes					
3412		2224:12	2					50P-2 Trip phsA	LD0.PHHPTOC2.Op.phsA
3413		2224:13		Yes					
3414		2224:14	2					50P-2 Trip phsB	LD0.PHHPTOC2.Op.phsB
3415		2224:15		Yes					
3416		2225:00	2					50P-2 Trip phsC	LD0.PHHPTOC2.Op.phsC
3417		2225:01		Yes					
	2304	2326:04	0					50P-2 Enable signal for current multiplier	LD0.PHHPTOC2.InEnaMult.stVal
	2305	2326:05		Yes					

Table 20: 50P-3 : Three-phase non-directional overcurrent protection instantaneous stage instance 1 (PHIPTOC1)

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
10		897:06	2					50P-3 Trip	LD0.PHIPTOC1.Op.general
531			2					50P-3 Trip	LD0.PHIPTOC1.Op.general
532				Yes					
3418		2225:02	2					50P-3 Trip phsA	LD0.PHIPTOC1.Op.phsA
3419		2225:03		Yes					
3420		2225:04	2					50P-3 Trip phsB	LD0.PHIPTOC1.Op.phsB
3421		2225:05		Yes					
3422		2225:06	2					50P-3 Trip phsC	LD0.PHIPTOC1.Op.phsC
3423		2225:07		Yes					

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
	2306	2326:06	0					50P-3 Enable signal for current multiplier	LD0.PHIPTOC1.InEnaMult.stVal
	2307	2326:07		Yes					

Table 21: 51LT : Three-phase non-directional long time overcurrent protection low stage instance 1 (PHLTPTOC1)

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
2594		2184:00	2					51LT Trip	LD0.PHLTPTOC1.Op.general
2595		2184:01		Yes					
3514		2231:02	2					51LT Trip phsA	LD0.PHLTPTOC1.Op.phsA
3515		2231:03		Yes					
3516		2231:04	2					51LT Trip phsB	LD0.PHLTPTOC1.Op.phsB
3517		2231:05		Yes					
3518		2231:06	2					51LT Trip phsC	LD0.PHLTPTOC1.Op.phsC
3519		2231:07		Yes					

Table 22: 67/51P : Three-phase directional overcurrent protection low stage instance 1 (DPHLPTOC1)

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
15		897:01	2					67/51P Trip	LD0.DPHLPTOC1.Op.general
541			2					67/51P Trip	LD0.DPHLPTOC1.Op.general
542				Yes					
3460		2227:12	2					67/51P Trip phsA	LD0.DPHLPTOC1.Op.phsA
3461		2227:13		Yes					
3462		2227:14	2					67/51P Trip phsB	LD0.DPHLPTOC1.Op.phsB
3463		2227:15		Yes					
3464		2228:00	2					67/51P Trip phsC	LD0.DPHLPTOC1.Op.phsC
3465		2228:01		Yes					

Table 23: 67/50P-1 : Three-phase directional overcurrent protection high stage instance 1 (DPHHPTOC1)

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
2274		2169:12	2					67/50P-1 Trip	LD0.DPHHPTOC1.Op.general
2275		2169:13		Yes					
3472		2228:08	2					67/50P-1 Trip phsA	LD0.DPHHPTOC1.Op.phsA
3473		2228:09		Yes					
3474		2228:10	2					67/50P-1 Trip phsB	LD0.DPHHPTOC1.Op.phsB
3475		2228:11		Yes					
3476		2228:12	2					67/50P-1 Trip phsC	LD0.DPHHPTOC1.Op.phsC
3477		2228:13		Yes					

Table 24: 67/50P-2 : Three-phase directional overcurrent protection high stage instance 2 (DPHHPTOC2)

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
2346		2174:04	2					67/50P-2 Trip	LD0.DPHHPTOC2.Op.general
2347		2174:05		Yes					
3580		2235:04	2					67/50P-2 Trip phsA	LD0.DPHHPTOC2.Op.phsA
3581		2235:05		Yes					
3582		2235:06	2					67/50P-2 Trip phsB	LD0.DPHHPTOC2.Op.phsB
3583		2235:07		Yes					
3584		2235:08	2					67/50P-2 Trip phsC	LD0.DPHHPTOC2.Op.phsC
3585		2235:09		Yes					

Table 25: 51G : Non-directional earth-fault protection low stage instance 1 (EFLPTOC1)

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
2246		2168:00	2					51G Trip	LD0.EFLPTOC1.Op.general
2247		2168:01		Yes					
	2308	2326:08	0					51G Enable signal for current multiplier	LD0.EFLPTOC1.InEnaMult.stVal
	2309	2326:09		Yes					

Table 26: 51N-1 : Non-directional earth-fault protection low stage instance 2 (EFLPTOC2)

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
13		897:03	2					51N-1 Trip	LD0.EFLPTOC2.Op.general
537			2					51N-1 Trip	LD0.EFLPTOC2.Op.general
538				Yes					

Table 27: 50SEF : Non-directional earth-fault protection low stage instance 4 (EFLPTOC4)

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
95		902:01	2					50SEF Trip	LD0.EFLPTOC4.Op.general
701			2					50SEF Trip	LD0.EFLPTOC4.Op.general
702				Yes					

Table 28: 50G-1 : Non-directional earth-fault protection high stage instance 1 (EFHPTOC1)

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
2248		2168:02	2					50G-1 Trip	LD0.EFHPTOC1.Op.general
2249		2168:03		Yes					
	2310	2326:10	0					50G-1 Enable signal for current multiplier	LD0.EFHPTOC1.InEnaMult.stVal
	2311	2326:11		Yes					

Table 29: 50G-2 : Non-directional earth-fault protection high stage instance 2 (EFHPTOC2)

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
2250		2168:04	2					50G-2 Trip	LD0.EFHPTOC2.Op.general

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
2251		2168:05		Yes					

Table 30: 50N-1 : Non-directional earth-fault protection high stage instance 3 (EFHPTOC3)

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
7		897:09	2					50N-1 Trip	LD0.EFHPTOC3.Op.general
525			2					50N-1 Trip	LD0.EFHPTOC3.Op.general
526				Yes					

Table 31: 50N-2 : Non-directional earth-fault protection high stage instance 4 (EFHPTOC4)

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
9		897:07	2					50N-2 Trip	LD0.EFHPTOC4.Op.general
529			2					50N-2 Trip	LD0.EFHPTOC4.Op.general
530				Yes					

Table 32: 50G-3 : Non-directional earth-fault protection instantaneous stage instance 1 (EFIPTOC1)

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
2252		2168:06	2					50G-3 Trip	LD0.EFIPTOC1.Op.general
2253		2168:07		Yes					
	2312	2326:12	0					50G-3 Enable signal for current multiplier	LD0.EFIPTOC1.InEnaMult.stVal
	2313	2326:13		Yes					

Table 33: 50N-3 : Non-directional earth-fault protection instantaneous stage instance 2 (EFIPTOC2)

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
11		897:05	2					50N-3 Trip	LD0.EFIPTOC2.Op.general
533			2					50N-3 Trip	LD0.EFIPTOC2.Op.general
534				Yes					

Table 34: 67/51N : Directional earth-fault protection low stage instance 1 (DEFLPTOC1)

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
16		897:00	2					67/51N Trip	LD0.DEFLPTOC1.Op.general
543			2					67/51N Trip	LD0.DEFLPTOC1.Op.general
544				Yes					

Table 35: 67/50N-1 : Directional earth-fault protection high stage instance 1 (DEFHPTOC1)

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
2276		2169:14	2					67/50N-1 Trip	LD0.DEFHPTOC1.Op.general
2277		2169:15		Yes					

Table 36: 67/50N-2 : Directional earth-fault protection high stage instance 2 (DEFHPTOC2)

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
2286		2170:08	2					67/50N-2 Trip	LD0.DEFHPTOC2.Op.general
2287		2170:09		Yes					

Table 37: 32P-1 : Three phase directional power protection instance 1 (DPSRDIR1)

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
42		899:06	0					32P-1 direction signal	LD0.DPSRDIR1.Dir.general
595			2					32P-1 direction signal	LD0.DPSRDIR1.Dir.general
596				Yes					
		3866	0		s16	100		32P-1 Angle between polarizing and operating quantity	LD0.DPSRDIR1.OpChrAng.mag.f

Table 38: 32N-1: direction signal (DNZSRDIR1)

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
43		899:05						32N-1 direction signal	LD0.DNZSRDIR1.Dir.general
597								32N-1 direction signal	LD0.DNZSRDIR1.Dir.general
598				Yes					
		3867			s16	100		32N-1 Angle between operating angle and characteristic angle	LD0.DNZSRDIR1.OpChrAng.mag.f

Table 39: 46-1 : Negative-sequence overcurrent protection instance 1 (NSPTOC1)

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
5		897:11	2					46-1 Trip	LD0.NSPTOC1.Op.general
521			2					46-1 Trip	LD0.NSPTOC1.Op.general
522				Yes					
	21	906:11	0					46-1 Block signal for activating the blocking mode	LD0.NSPTOC1.Mod.blockIn
	553							46-1 Block signal for activating the blocking mode	LD0.NSPTOC1.Mod.blockIn
	554			Yes					
	2314	2326:14	0					46-1 Enable signal for current multiplier	LD0.NSPTOC1.InEnaMult.stVal
	2315	2326:15		Yes					

Table 40: 46-2 : Negative-sequence overcurrent protection instance 2 (NSPTOC2)

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
164		925:12	2					46-2 Trip	LD0.NSPTOC2.Op.general
839			2					46-2 Trip	LD0.NSPTOC2.Op.general
840				Yes					
	70	909:10						46-2 Block signal for activating the blocking mode	LD0.NSPTOC2.Mod.blockIn

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
	651							46-2 Block signal for activating the blocking mode	LD0.NSPTOC2.Mod.blockIn
	652			Yes					
	2316	2327:00	0					46-2 Enable signal for current multiplier	LD0.NSPTOC2.InEnaMult.stVal
	2317	2327:01		Yes					

Table 41: 46PD : Phase discontinuity protection (PDNSPTOC1)

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
2254		2168:08	2					46PD Trip	LD0.PDNSPTOC1.Op.general
2255		2168:09		Yes					

Table 42: 59G : Residual overvoltage protection instance 1 (ROVPTOV1)

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
111		903:01	0					59G Pickup	LD0.ROVPTOV1.Str.general
733			2					59G Pickup	LD0.ROVPTOV1.Str.general
734				Yes					
2308		2171:14	2					59G Trip	LD0.ROVPTOV1.Op.general
2309		2171:15		Yes					

Table 43: 59N-1 : Residual overvoltage protection instance 2 (ROVPTOV2)

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
3146		2210:12	2					59N-1(1) Trip	LD0.ROVPTOV2.Op.general
3147		2210:13		Yes					

Table 44: 27-1 : Three-phase undervoltage protection instance 1 (PHPTUV1)

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
4		897:12	0					27-1(1) Trip	LD0.PHPTUV1.Op.general
519			2					27-1(1) Trip	LD0.PHPTUV1.Op.general
520				Yes					
3478		2228:14	2					27-1(1) Trip phsA	LD0.PHPTUV1.Op.phsA
3479		2228:15		Yes					
3480		2229:00	2					27-1(1) Trip phsB	LD0.PHPTUV1.Op.phsB
3481		2229:01		Yes					
3482		2229:02	2					27-1(1) Trip phsC	LD0.PHPTUV1.Op.phsC
3483		2229:03		Yes					

Table 45: 27-2 : Three-phase undervoltage protection instance 2 (PHPTUV2)

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
2294		2171:00	2					27-2(1) Trip	LD0.PHPTUV2.Op.general

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
2295		2171:01		Yes					
3484		2229:04	2					27-2(1) Trip phsA	LD0.PHPTUV2.Op.phsA
3485		2229:05		Yes					
3486		2229:06	2					27-2(1) Trip phsB	LD0.PHPTUV2.Op.phsB
3487		2229:07		Yes					
3488		2229:08	2					27-2(1) Trip phsC	LD0.PHPTUV2.Op.phsC
3489		2229:09		Yes					

Table 46: 59-1 : Three-phase overvoltage protection instance 1 (PHPTOV1)

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
14		897:02	2					59-1(1) Trip	LD0.PHPTOV1.Op.general
539			2					59-1(1) Trip	LD0.PHPTOV1.Op.general
540				Yes					
3490		2229:10	2					59-1(1) Trip phsA	LD0.PHPTOV1.Op.phsA
3491		2229:11		Yes					
3492		2229:12	2					59-1(1) Trip phsB	LD0.PHPTOV1.Op.phsB
3493		2229:13		Yes					
3494		2229:14	2					59-1(1) Trip phsC	LD0.PHPTOV1.Op.phsC
3495		2229:15		Yes					

Table 47: 59-2 : Three-phase overvoltage protection instance 2 (PHPTOV2)

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
2300		2171:06	2					59-2(1) Trip	LD0.PHPTOV2.Op.general
2301		2171:07		Yes					
3496		2230:00	2					59-2(1) Trip phsA	LD0.PHPTOV2.Op.phsA
3497		2230:01		Yes					
3498		2230:02	2					59-2(1) Trip phsB	LD0.PHPTOV2.Op.phsB
3499		2230:03		Yes					
3500		2230:04	2					59-2(1) Trip phsC	LD0.PHPTOV2.Op.phsC
3501		2230:05		Yes					

Table 48: 47-1 : Negative-sequence overvoltage protection instance 1 (NSPTOV1)

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
763			2					47-1(1) Trip	LD0.NSPTOV1.Op.general
764				Yes					
126		904:02	2					47-1(1) Trip	LD0.NSPTOV1.Op.general

Table 49: 47-2 : Negative-sequence overvoltage protection instance 2 (NSPTOV2)

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
3152		2211:02	2					47-2(1) Trip	LD0.NSPTOV2.Op.general

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
3153		2211:03		Yes					

Table 50: 81-1 : Frequency protection instance 1 (FRPTRC1)

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
3154		2211:04	2					81-1 Trip	LD0.FRPTRC1.Op.general
3155		2211:05		Yes					
		5030	0		u32	100		81-1 Pickup duration	LD0.FRPTRC1.StrDur.mag.f
		5031							

Table 51: 81-1 : Frequency protection instance 1 (FRPTOF1)

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
82		902:14	2					81-1 Trip signal for overfrequency	LD0.FRPTOF1.Op.general
675			2					81-1 Trip signal for overfrequency	LD0.FRPTOF1.Op.general
676				Yes					
		5034	0		u32	100		81-1 Pickup duration	LD0.FRPTOF1.StrDur.mag.f
		5035							

Table 52: 81-1 : Frequency protection instance 1 (FRPTUF1)

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
3162		2211:12	2					81-1 Trip signal for underfrequency	LD0.FRPTUF1.Op.general
3163		2211:13		Yes					
		5038	0		u32	100		81-1 Pickup duration	LD0.FRPTUF1.StrDur.mag.f
		5039							

Table 53: 81-1 : Frequency protection instance 1 (FRPFRC1)

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
3166		2212:00	2					81-1 Trip signal for frequency gradient	LD0.FRPFRC1.Op.general
3167		2212:01		Yes					
		5042	0		u32	100		81-1 Pickup duration	LD0.FRPFRC1.StrDur.mag.f
		5043							

Table 54: 81-2 : Frequency protection instance 2 (FRPTRC2)

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
3156		2211:06	2					81-2 Trip	LD0.FRPTRC2.Op.general
3157		2211:07		Yes					
		5032	0		u32	100		81-2 Pickup duration	LD0.FRPTRC2.StrDur.mag.f
		5033							

Table 55: 81-2 : Frequency protection instance 2 (FRPTOF2)

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
83		902:13	2					81-2 Trip signal for overfrequency	LD0.FRPTOF2.Op.general
677			2					81-2 Trip signal for overfrequency	LD0.FRPTOF2.Op.general
678				Yes					
		5036	0		u32	100		81-2 Pickup duration	LD0.FRPTOF2.StrDur.mag.f
		5037							

Table 56: 81-2 : Frequency protection instance 2 (FRPTUF2)

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
3164		2211:14	2					81-2 Trip signal for underfrequency	LD0.FRPTUF2.Op.general
3165		2211:15		Yes					
		5040	0		u32	100		81-2 Pickup duration	LD0.FRPTUF2.StrDur.mag.f
		5041							

Table 57: 81-2 : Frequency protection instance 2 (FRPFRC2)

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
3168		2212:02	2					81-2 Trip signal for frequency gradient	LD0.FRPFRC2.Op.general
3169		2212:03		Yes					
		5044	0		s32	100		81-2 Pickup duration	LD0.FRPFRC2.StrDur.mag.f
		5045							

Table 58: 24 : Voltage per hertz protection instance 1 (OEPVPH1)

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
3224		2215:10:00	2					24 Trip	LD0.OEPVPH1.Op.general
3225		2215:11:00		Yes					

Table 59: 49F-1 : Three-phase thermal protection for feeders cables and distribution transformers Instance 1 (T1PTTR1)

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
2598		2184:04	2					49F Trip	LD0.T1PTTR1.Op.general
2599		2184:05		Yes					
	2318	2327:02	0					49F Enable Current multiplier	LD0.T1PTTR1.InEnaMult.stVal
	2319	2327:03		Yes					
5510		2505:04	14					49F Thermal Alarm	LD0.T1PTTR1.AlmThm.general
5511		2505:05		Yes					

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
		5001	0		s32	10		49F The calculated temperature of the protected object	LD0.T1PTTR1.Tmp.mag.f
		5002							
		5003	0		u16	100		49F The calculated temperature of the protected object relative to the trip level	LD0.T1PTTR1.TmpRl.mag.f
		5004	0		s16	1		49F The ambient temperature used in the calculation	LD0.T1PTTR1.TmpUsed.mag.f

Table 60: Table - 87LOZREF : Numerical stabilized low impedance restricted earth-fault protection (LREFPDIF1)

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
2890		2198:14	2					87LOZREF Trip	LD0.LREFPDIF1.Op.general
2891		2198:15		Yes					

Table 61: 50BF-1 : Circuit breaker failure protection instance 1 (CCBRBRF1)

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
97		903:15	2					50BF-1 CB faulty and unable to trip	LD0.CCBRBRF1.InCBFlt.stVal
98		903:14	2					50BF-1 Retrip	LD0.CCBRBRF1.OpIn.general
705			2					50BF-1 CB faulty and unable to trip	LD0.CCBRBRF1.InCBFlt.stVal
706				Yes					
707			2					50BF-1 Retrip	LD0.CCBRBRF1.OpIn.general
708				Yes					
2310		2172:00	2					50BF-1 Backup trip	LD0.CCBRBRF1.OpEx.general
2311		2172:01		Yes					
5526		2506:04	0					50BF-1 CB in closed position	LD0.CCBRBRF1.InPosCls.stVal
5527		2506:05		Yes					
	38	907:10	0					50BF-1 CBFP pickup command	LD0.CCBRBRF1.InStr.stVal
	587		0					50BF-1 CBFP pickup command	LD0.CCBRBRF1.InStr.stVal
	588			Yes					

Table 62: INR-1 : Three-phase inrush detector instance 1 (INRPHAR1)

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
3214		2215:00						INR-1 Second harmonic based block	LD0.INRPHAR1.Str.general
3215		2215:01		Yes					

Table 63: 86/94-1 : Master trip instance 1 (TRPPTRC1)

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
1		897:15	2					86/94-1 General trip output signal	LD0.TRPPTRC1.Tr.general
513			2					86/94-1 General trip output signal	LD0.TRPPTRC1.Tr.general
514				Yes					
	2320	2199:04	2					86/94-1 General trip Input signal	LD0.TRPPTRC1.Op.general

Table 64: 86/94-2 : Master trip instance 2 (TRPPTRC2)

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
2902		2199:08	2					86/94-2 General trip output signal	LD0.TRPPTRC2.Tr.general
2903		2199:09		Yes					
	2322	2199:10	2					86/94-2 General trip input signal	LD0.TRPPTRC2.Op.general
	2323	2199:11		Yes					

Table 65: AFD-1 : Arc protection instance 1 (ARCSARC11)

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
2320		2172:10	0					AFD-1 Fault arc detected=light signal output	LD0.ARCSARC11.FADet.stVal
2321		2172:11		Yes					
2326		2173:00	0					AFD-1 Remote Fault arc detected	LD0.ARCSARC11.InRemFA.stVal
2327		2173:01		Yes					

Table 66: AFD-1 : Arc protection instance 1 (ARCPTRC11)

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
2314		2172:04	2					AFD-1 Trip	LD0.ARCPTRC11.Op.general
2315		2172:05		Yes					

Table 67: AFD-2 : Arc protection instance 2 (ARCSARC21)

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
2322		2172:12	0					AFD-2 Fault arc detected=light signal output	LD0.ARCSARC21.FADet.stVal
2323		2172:13		Yes					
2328		2173:02	0					AFD-2 Remote Fault arc detected	LD0.ARCSARC21.InRemFA.stVal
2329		2173:03		Yes					

Table 68: AFD-2 : Arc protection instance 2 (ARCPTRC21)

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
2316		2172:06	2					AFD-2 Trip	LD0.ARCPTRC21.Op.general
2317		2172:07		Yes					

Table 69: AFD-3 : Arc protection instance 3 (ARCSARC31)

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
2324		2172:14	0					AFD-3 Fault arc detected=light signal output	LD0.ARCSARC31.FADet.stVal
2325		2172:15		Yes					
2330		2173:04	0					AFD-3 Remote Fault arc detected	LD0.ARCSARC31.InRemFA.stVal
2331		2173:05		Yes					

Table 70: AFD-3 : Arc protection instance 3 (ARCPTRC31)

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
2318		2172:08	2					AFD-3 Trip	LD0.ARCPTRC31.Op.general
2319		2172:09		Yes					

Table 71: HIZ : High impedance fault detection (PHIZ1)

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
2604		2184:10	2					HIZ Trip	LD0.PHIZ1.Op.general
2605		2184:11		Yes					

Table 72: 81LSH-1 : Load shedding and restoration instance 1 (LSHDPTRC1)

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
17		898:15	2					81LSH-1 Trip of load shedding	LD0.LSHDPTRC1.Op.general
18		898:14	2					81LSH-1 Restore signal for load restoring purposes	LD0.LSHDPTRC1.RestLodOp.general
545			2					81LSH-1 Trip of load shedding	LD0.LSHDPTRC1.Op.general
546				Yes					
547			2					81LSH-1 Restore signal for load restoring purposes	LD0.LSHDPTRC1.RestLodOp.general
548				Yes					
		5046	0		u32	100		81LSH-1 Pickup duration	LD0.LSHDPTRC1.StrDur.mag.f
		5047							

Table 73: 81LSH-1 : Load shedding and restoration instance 1 (LSHDPTUF1)

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
3178		2212:12	2					81LSH-1 Trip signal for under frequency	LD0.LSHDPTUF1.Op.general
3179		2212:13		Yes					

Table 74: 81LSH-1 : Load shedding and restoration instance 1 (LSHDPFRC1)

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
3182		2213:00	2					81LSH-1 Trip signal for high df/dt	LD0.LSHDPFRC1.Op.general
3183		2213:01		Yes					

Table 75: 81LSH-2 : Load shedding and restoration instance 2 (LSHDPTRC2)

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
84		902:12	2					81LSH-2 Trip of load shedding	LD0.LSHDPTRC2.Op.general
85		902:11	2					81LSH-2 Restore signal for load restoring purposes	LD0.LSHDPTRC2.RestLodOp.general
679			2					81LSH-2 Trip of load shedding	LD0.LSHDPTRC2.Op.general
680				Yes					
681			2					81LSH-2 Restore signal for load restoring purposes	LD0.LSHDPTRC2.RestLodOp.general
682				Yes					
		5048	0		u32	100		81LSH-2 Pickup duration	LD0.LSHDPTRC2.StrDur.mag.f
		5049							

Table 76: 81LSH-2 : Load shedding and restoration instance 2 (LSHDPTUF2)

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
3180		2212:14	2					81LSH-2 Trip signal for under frequency	LD0.LSHDPTUF2.Op.general
3181		2212:15		Yes					

Table 77: 81LSH-2 : Load shedding and restoration instance 2 (LSHDPFRC2)

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
3184		2213:02	2					81LSH-2 Trip signal for high df/dt	LD0.LSHDPFRC2.Op.general
3185		2213:03		Yes					

Table 78: 37-1 : Loss of phase instance 1 (PHPTUC1)

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
2950		2202:10	2					37-1 Trip	LD0.PHPTUC1.Op.general

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
2951		2202:11		Yes					
3586		2235:10	2					37-1 Trip phase A	LD0.PHPTUC1.Op.phsA
3587		2235:11		Yes					
3588		2235:12	2					37-1 Trip phase B	LD0.PHPTUC1.Op.phsB
3589		2235:13		Yes					
3590		2235:14	2					37-1 Trip phase C	LD0.PHPTUC1.Op.phsC
3591		2235:15		Yes					

Table 79: 52-1 : Circuit-breaker control instance 1 (CBCILO1)

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
5442		2501:00	0					52-1 Enables opening	CTRL.CBCILO1.EnaOpn.stVal
5443		2501:01		Yes					
5444		2501:02	0					52-1 Enables closing	CTRL.CBCILO1.EnaCls.stVal
5445		2501:03		Yes					
5472		2502:14	0					52-1 Discards ENA_OPEN and ENA_CLOSE interlocking when TRUE	CTRL.CBCILO1.ItlByPss.stVal
5473		2502:15		Yes					

Table 80: 52-1 : Circuit-breaker control instance 1 (CBCSWI1)

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
2		897:14	0					52-1 Executes the command for close direction	CTRL.CBCSWI1.OpCls.general
515			2					52-1 Executes the command for close direction	CTRL.CBCSWI1.OpCls.general
516				Yes					
5110		2481:00						52-1 Apparatus position indication - Open	CTRL.CBCSWI1.Pos.stVal
5111		2481:01		Yes					
5112		2481:02						52-1 Apparatus position indication - Close	CTRL.CBCSWI1.Pos.stVal
5113		2481:03		Yes					
5114		2481:04						52-1 Apparatus position indication - OK	CTRL.CBCSWI1.Pos.stVal
5115		2481:05		Yes					
6632		3039:08	0					52(1) Closing is enabled based on the input status	CTRL.CBCSWI1.ClsEna.stVal
6633		3039:09		Yes					
6636		3039:12	0					52(1) Opening is enabled based on the input status	CTRL.CBCSWI1.OpnEna.stVal
6637		3039:13		Yes					
6640		3040:00	0					52-1 Object selected	CTRL.CBCSWI1.Pos.stSeld
6641		3040:01		Yes					

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
	1	905:15	0					52-1 Apparatus closed position	CTRL.CBCSWI1.PosCls.stVal
	2	905:14	0					52-1 Apparatus open position	CTRL.CBCSWI1.PosOpn.stVal
	19	906:13	0					52-1 Executes the command for open direction	CTRL.CBCSWI1.OpOpn.general
	20	906:12							CTRL.CBCSWI1.OpCls.general
	513		0					52-1 Apparatus closed position	CTRL.CBCSWI1.PosCls.stVal
	514			Yes					
	515		0					52-1 Apparatus open position	CTRL.CBCSWI1.PosOpn.stVal
	516			Yes					
	549		0					52-1 Executes the command for open direction	CTRL.CBCSWI1.OpOpn.general
	550			Yes					
	551		0					52-1 Executes the command for close direction	CTRL.CBCSWI1.OpCls.general
	552			Yes					

Table 81: 52-1 : Circuit-breaker control instance 1 (CBXCBR1)

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
5150		2490:00	0					52-1 Blocks opening	CTRL.CBXCBR1.BlkOpn.stVal
5151		2490:01		Yes					
5152		2490:02	0					52-1 Blocks closing	CTRL.CBXCBR1.BlkCls.stVal
5153		2490:03		Yes					

Table 82: 79 : Auto-reclosing (DARREC1)

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
23		898:09	4					79-1 Reclosing sequence is in progress	LD0.DARREC1.ActRec.stVal
26		898:06	0					79-1 Signal indicating that AR is locked out	LD0.DARREC1.LO.stVal
39		899:09	0					79 Protection Coordination	LD0.DARREC1.ProCrd.stVal
110		903:02	2					79-1 Close (reclose) command for circuit breaker	LD0.DARREC1.Op.general
557			4					79-1 Reclosing sequence is in progress	LD0.DARREC1.ActRec.stVal
558				Yes					
563			0					79-1 Signal indicating that AR is locked out	LD0.DARREC1.LO.stVal
564				Yes					
589			0					79 Protection Coordination	LD0.DARREC1.ProCrd.stVal
590				Yes					

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
731			2					79-1 Close (reclose) command for circuit breaker	LD0.DARREC1.Op.general
732				Yes					
	3	905:13	0					79 AR Switched On	LD0.DARREC1.AROn.stVal
	8	905:08	0					79 AR On/Off Control Signal Status	LD0.DARREC1.InReClsOn.stVal
	34	907:14	0					79-1 Interrupts and inhibits reclosing sequence	LD0.DARREC1.InInhRec.stVal
	35	907:13	0					79-1 Open command for circuit breaker	LD0.DARREC1.OpOpn.general
	517		0					79 AR Switched On	LD0.DARREC1.AROn.stVal
	518			Yes					
	527		0					79 AR On/Off Control Signal Status	LD0.DARREC1.InReClsOn.stVal
	528			Yes					
	579		0					79-1 Interrupts and inhibits reclosing sequence	LD0.DARREC1.InInhRec.stVal
	580			Yes					
	581		2					79-1 Open command for circuit breaker	LD0.DARREC1.OpOpn.general
	582			Yes					
		776	4		u16	1		79-1 Frequent operation counter	LD0.DARREC1.FrqOpCnt.stVal
		778	4		u16	1		79-1 Resetable operation counter shot 1	LD0.DARREC1.OpCnt1.stVal
		779	4		u16	1		79-1 Resetable operation counter shot 2	LD0.DARREC1.OpCnt2.stVal
		780	4		u16	1		79-1 Resetable operation counter shot 3	LD0.DARREC1.OpCnt3.stVal
		781	4		u16	1		79-1 Resetable operation counter shot 4	LD0.DARREC1.OpCnt4.stVal
		782	4		u16	1		79-1 Resetable operation counter shot 5	LD0.DARREC1.OpCnt5.stVal
		5021	0		s16	1		79-1 AR status signal for IEC61850	LD0.DARREC1.AutoRecSt.stVal
		5022	0		u16	1		Shot pointer value	LD0.DARREC1.ShotPntr.stVal
		5139	12		u16	1		Protection coordination mode	LD0.DARREC1.ProtCrdMod.setVal

Table 83: Synchronism and energizing check (SECRSYN1)

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
107		903:05	0					25-1 Blocking signal of the synchro check and voltage check function	LD0.SECRSYN1.Mod.blockIn
160		924:00	0					25-1 Live Line Live Bus	LD0.SECRSYN1.LLLBInd.stVal
161		925:15	0					25-1 Dead Line Live Bus	LD0.SECRSYN1.DLLBInd.stVal

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
162		925:14	0					25-1 Live Line Dead Bus	LD0.SECRSYN1.LLDBInd.stVal
163		925:13	0					25-1 Dead Line Dead Bus	LD0.SECRSYN1.DLDBInd.stVal
725			7					25-1 Blocking signal of the synchro check and voltage check function	LD0.SECRSYN1.Mod.blockIn
726				Yes					
831			0					25-1 Live Line Live Bus	LD0.SECRSYN1.LLLBInd.stVal
832				Yes					
833			0					25-1 Dead Line Live Bus	LD0.SECRSYN1.DLLBInd.stVal
834				Yes					
835			0					25-1 Live Line Dead Bus	LD0.SECRSYN1.LLDBInd.stVal
836				Yes					
837			0					25-1 Dead Line Dead Bus	LD0.SECRSYN1.DLDBInd.stVal
838				Yes					
5562		2508:08	0					25-1 Voltage difference out of limit for synchronizing	LD0.SECRSYN1.VInd.stVal
5563		2508:09		Yes					
5564		2508:10	0					25-1 Phase angle difference out of limit for synchronizing	LD0.SECRSYN1.AngInd.stVal
5565		2508:11		Yes					
5566		2508:12	0					25-1 Frequency difference out of limit for synchronizing	LD0.SECRSYN1.HzInd.stVal
5567		2508:13		Yes					
5568		2508:14	0					25-1 Synchronizing in progress	LD0.SECRSYN1.SynPrg.stVal
5569		2508:15		Yes					
5570		2509:00	0					25-1 CB closing failed	LD0.SECRSYN1.FailSyn.stVal
5571		2509:01		Yes					
6624		3039:00	0					25-1 Systems in synchronism	LD0.SECRSYN1.Rel.stVal
6625		3039:01		Yes					
	41	907:07	0					25-1 Request to bypass synchronism check and voltage check	LD0.SECRSYN1.ByPss.stVal
	593		0					25-1 Request to bypass synchronism check and voltage check	LD0.SECRSYN1.ByPss.stVal
	594			Yes					
		340	11		u32	100		25-1 Calculated voltage amplitude difference	LD0.SECRSYN1.DifVClc.mag.f
		341							
		342	11		u16	1		25-1 Calculated voltage phase angle difference	LD0.SECRSYN1.DifAngClc.mag.f
		343	11		u16	100 0		25-1 Calculated voltage frequency difference	LD0.SECRSYN1.DifHzClc.mag.f

Table 84: 52CM-1 : Circuit-breaker condition monitoring instance 1 (SSCBR1)

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
27		898:05	14					52CM-1 CB open travel time exceeded set value	LD0.SSCBR1.OpnAlm.stVal
31		898:01	14					52CM-1 Accumulated currents power (Iyt) exceeded alarm limit	LD0.SSCBR1.APwrAlm.stVal
32		898:00	14					52CM-1 Number of CB operations exceeds alarm limit	LD0.SSCBR1.OpNumAlm.stVal
565			14					52CM-1 CB open travel time exceeded set value	LD0.SSCBR1.OpnAlm.stVal
566				Yes					
573			14					52CM-1 Accumulated currents power (Iyt) exceeded alarm limit	LD0.SSCBR1.APwrAlm.stVal
574				Yes					
575			14					52CM-1 Number of CB operations exceeds alarm limit	LD0.SSCBR1.OpNumAlm.stVal
576				Yes					
5412		2499:02	14					52CM-1 CB close travel time exceeded set value	LD0.SSCBR1.ClsAlm.stVal
5413		2499:03		Yes					
5418		2499:08	14					52CM-1 Spring charging time has crossed the set value	LD0.SSCBR1.SprChaAlm.stVal
5419		2499:09		Yes					
5422		2499:12	0					52CM-1 Number of CB operations exceeds lockout limit	LD0.SSCBR1.OpNumLO.stVal
5423		2499:13		Yes					
5426		2500:00	0					52CM-1 Accumulated currents power (Iyt) exceeded lockout limit	LD0.SSCBR1.APwrLO.stVal
5427		2500:01		Yes					
5428		2500:02	14					52CM-1 Remaining life of CB exceeded alarm limit	LD0.SSCBR1.CBLifAlm.stVal
5429		2500:03		Yes					
5430		2500:04	14					52CM-1 CB 'not tripped for long time' alarm	LD0.SSCBR1.LonTmAlm.stVal
5431		2500:05		Yes					
5432		2500:06	14					52CM-1 Pressure below alarm level	LD0.SSCBR1.PresAlm.stVal
5433		2500:07		Yes					
5434		2500:08	0					52CM-1 Pressure below lockout level	LD0.SSCBR1.PresLO.stVal
5435		2500:09		Yes					
5436		2500:10	0					52CM-1 CB is in open position	LD0.SSCBR1.PosOpn.stVal

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
5437		2500:11		Yes					
5438		2500:12	0					52CM-1 CB is in invalid position (not positively open or closed)	LD0.SSCBR1.PosIvd.stVal
5439		2500:13		Yes					
5440		2500:14	0					52CM-1 CB is in closed position	LD0.SSCBR1.PosCls.stVal
5441		2500:15		Yes					
5534		2506:12	0					52CM-1 CB spring charging started input	LD0.SSCBR1.InSprChStr.stVal
5535		2506:13		Yes					
5538		2507:00	14					52CM-1 CB spring charged input	LD0.SSCBR1.InPresAlm.stVal
5539		2507:01		Yes					
5540		2507:02	0					52CM-1 Binary pressure input for lockout indication	LD0.SSCBR1.InPresLO.stVal
5541		2507:03		Yes					
5542		2507:04	0					52CM-1 Signal for open position of apparatus from I/O	LD0.SSCBR1.InPosOpn.stVal
5543		2507:05		Yes					
5544		2507:06	0					52CM-1 Signal for closeposition of apparatus from I/O	LD0.SSCBR1.InPosCls.stVal
5545		2507:07		Yes					
	6	905:10	0					52CM-1 Recloser Spring Charged Input 1	LD0.SSCBR1.InSprCha.stVal
	523		0					52CM-1 Recloser Spring Charged Input 1	LD0.SSCBR1.InSprCha.stVal
	524			Yes					
		775			u16			52CM-1 Number of CB operation cycle	LD0.SSCBR1.OpCnt.stVal
		2010	11		u32	100		52CM-1 Accumulated currents power (Iyt) phase A	LD0.SSCBR1.AccAPwrPhA.mag.f
		2011							
		2012	11		u32	100		52CM-1 Accumulated currents power (Iyt) phase B	LD0.SSCBR1.AccAPwrPhB.mag.f
		2013							
		2014	11		u32	100		52CM-1 Accumulated currents power (Iyt) phase C	LD0.SSCBR1.AccAPwrPhC.mag.f
		2015							
		2016	12		s16	1		52CM-1 CB Remaining life phase A	LD0.SSCBR1.RmnLifPhA.stVal
		2017	12		s16	1		52CM-1 CB Remaining life phase B	LD0.SSCBR1.RmnLifPhB.stVal

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
		2018	12		s16	1		52CM-1 CB Remaining life phase C	LD0.SSCBR1.RmnLifPhC.stVal
		2022	12		u16	1		52CM-1 The number of days CB has been inactive	LD0.SSCBR1.InaTmdCnt.stVal
		5023	0		u32	1		52CM-1 Travel time of the CB during opening operation	LD0.SSCBR1.TmmsOpn.mag.f
		5024							
		5025	0		u32	100		52CM-1 Travel time of the CB during closing operation	LD0.SSCBR1.TmmsCls.mag.f
		5026							
		5027	0		u32	100		52CM-1 The charging time of the CB spring	LD0.SSCBR1.TmsSprCha.mag.f
		5028							

Table 85: CCM : Current circuit supervision (CCRDIF1)

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
5478		2503:04	2					CCM Fail output	LD0.CCRDIF1.Op.general
5479		2503:05		Yes					
5480		2503:06	14					CCM Alarm output	LD0.CCRDIF1.Alm.stVal
5481		2503:07		Yes					

Table 86: 60-1 : Fuse failure supervision intance 1 (SEQRFUF1)

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
30		898:02	0					60-1 General pickup of function	LD0.SEQRFUF1.Str.general
571			2					60-1 General pickup of function	LD0.SEQRFUF1.Str.general
572				Yes					
2892		2199:00	0					60-1 Three-phase pickup of function	LD0.SEQRFUF1.Str3Ph.general
2893		2199:01		Yes					

Table 87: CFD : Cable fault detection (RCFD1)

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
2920		2200:12	2					CFD Trip	LD0.RCFD1.Op.general
2921		2200:13		Yes					

Table 88: IA IB IC : Three-phase current measurement instance 1 (CMMXU1)

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
81		902:15	14					IA IB IC High alarm	LD0.CMMXU1.HiAlm.stVal
673			14					IA IB IC High alarm	LD0.CMMXU1.HiAlm.stVal
674				Yes					
5448		2501:06	10					IA IB IC High warning	LD0.CMMXU1.HiWrn.stVal

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
5449		2501:07		Yes					
5450		2501:08	10					IA IB IC Low warning	LD0.CMMXU1.LoWrn.stVal
5451		2501:09		Yes					
5452		2501:10	14					IA IB IC Low alarm	LD0.CMMXU1.LoAlm.stVal
5453		2501:11		Yes					
		257	11		u16	100		IA IB IC IA Amplitude magnitude of instantaneous value	LD0.CMMXU1.A.phsA.instCVal.mag.f
		258	11		s16	1		IA IB IC IA Angle of instantaneous value	LD0.CMMXU1.A.phsA.instCVal.ang.f
		259	11		u16	100		IA IB IC IB Amplitude magnitude of instantaneous value	LD0.CMMXU1.A.phsB.instCVal.mag.f
		260	11		s16	1		IA IB IC IB Angle of instantaneous value	LD0.CMMXU1.A.phsB.instCVal.ang.f
		261	11		u16	100		IA IB IC IC Amplitude magnitude of instantaneous value	LD0.CMMXU1.A.phsC.instCVal.mag.f
		262	11		s16	1		IA IB IC IC Angle of instantaneous value	LD0.CMMXU1.A.phsC.instCVal.ang.f
		349	11		u16	100		IA IB IC IA Amplitude magnitude of reported value	LD0.CMMXU1.A.phsA.cVal.mag.f
		350	11		u16	100		IA IB IC IB Amplitude magnitude of reported value	LD0.CMMXU1.A.phsB.cVal.mag.f
		351	11		u16	100		IA IB IC IC Amplitude magnitude of reported value	LD0.CMMXU1.A.phsC.cVal.mag.f

Table 89: IA IB IC : Three-phase current measurement instance 1 (CMSTA1)

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
		385	5		u16	100		IA IB IC Demand value of IA current	LD0.CMSTA1.AvAmpsA.mag.f
		386	5		u16	100		IA IB IC Demand value of IB current	LD0.CMSTA1.AvAmpsB.mag.f
		387	5		u16	100		IA IB IC Demand value of IC current	LD0.CMSTA1.AvAmpsC.mag.f
		513	6		u16	100		IA IB IC Maximum demand for Phase A	LD0.CMSTA1.MaxAmpsA.mag.f
		514			ST. Time stamp			IA IB IC Maximum demand for Phase A Year / Month	LD0.CMSTA1.MaxAmpsA.t
		515						IA IB IC Maximum demand for Phase A Day / Hour	
		516						IA IB IC Maximum demand for Phase A Minute	
		517	6		u16	100		IA IB IC Maximum demand for Phase B	LD0.CMSTA1.MaxAmpsB.mag.f

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
		518			ST. Time stamp			IA IB IC Maximum demand for Phase B Year / Month	LD0.CMSTA1.MaxAmpsB.t
		519						IA IB IC Maximum demand for Phase B Day / Hour	
		520						IA IB IC Maximum demand for Phase B Minute	
		521	6		u16	100		IA IB IC Maximum demand for Phase C	LD0.CMSTA1.MaxAmpsC.mag.f
		522			ST. Time stamp			IA IB IC Maximum demand for Phase C Year / Month	LD0.CMSTA1.MaxAmpsC.t
		523						IA IB IC Maximum demand for Phase C Day / Hour	
		524						IA IB IC Maximum demand for Phase C Minute	
		641	9		u16	100		Minimum Demand Current-A	LD0.CMSTA1.MinAmpsA.mag.f
		642			ST. Time stamp			Minimum Demand Current-A Year / Month	LD0.CMSTA1.MinAmpsA.t
		643						Minimum Demand Current-A Day / Hour	
		644						Minimum Demand Current-A Minute	
		645	9		u16	100		Minimum Demand Current-B	LD0.CMSTA1.MinAmpsB.mag.f
		646			ST. Time stamp			Minimum Demand Current-B Year / Month	LD0.CMSTA1.MinAmpsB.t
		647						Minimum Demand Current-B Day / Hour	
		648						Minimum Demand Current-B Minute	
		649	9		u16	100		Minimum Demand Current-C	LD0.CMSTA1.MinAmpsC.mag.f
		650			ST. Time stamp			Minimum Demand Current-C Year / Month	LD0.CMSTA1.MinAmpsC.t
		651						Minimum Demand Current-C Day / Hour	
		652						Minimum Demand Current-C Minute	

Table 90: I1 I2 I0 : Sequence current measurement instance 1 (CSMSQI1)

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
		317	11		u16	100		I1 I2 I0 Positive sequence current amplitude instantaneous value	LD0.CSMSQI1.SeqA.c1.instCVal.mag.f
		318	11		s16	1		I1 I2 I0 Positive sequence current angle	LD0.CSMSQI1.SeqA.c1.instCVal.ang.f
		319	11		u16	100		I1 I2 I0 Negative sequence current amplitude instantaneous value	LD0.CSMSQI1.SeqA.c2.instCVal.mag.f
		320	11		s16	1		I1 I2 I0 Negative sequence current angle	LD0.CSMSQI1.SeqA.c2.instCVal.ang.f
		329	11		u32	100		I1 I2 I0 Zero sequence current amplitude instantaneous value	LD0.CSMSQI1.SeqA.c3.instCVal.mag.f
		330							
		331	11		s16	1		I1 I2 I0 Zero sequence current angle instantaneous value	LD0.CSMSQI1.SeqA.c3.instCVal.ang.f

Table 91: IG : Residual current measurement instance 1 (RESCMMXU1)

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
5454		2501:12	14					IG High alarm	LD0.RESCMMXU1.HiAlm.stVal
5455		2501:13		Yes					
5456		2501:14	10					IG High warning	LD0.RESCMMXU1.HiWrn.stVal
5457		2501:15		Yes					
		263	11		u16	100		IG Ground current Amplitude magnitude of instantaneous value	LD0.RESCMMXU1.A.res.instCVal.mag.f
		264	11		s16	1		IG Ground current Angle of instantaneous value	LD0.RESCMMXU1.A.res.instCVal.ang.f
		352	12		u16	100		IG Ground current Amplitude magnitude of reported value	LD0.RESCMMXU1.A.res.cVal.mag.f

Table 92: IG : Residual current demand instance 1 (RESCMSTA1)

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
		388	5		u16	100		RESCMMXU1 Demand value of residual current	LD0.RESCMSTA1.AvAmps.mag.f
		525	6		u16	100		Peak Demand Current-N	LD0.RESCMSTA1.MaxAmps.mag.f
		526			ST. Time stamp			Peak Demand Current-N time Year / Month	LD0.RESCMSTA1.MaxAmps.t

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
		527						Peak Demand Current-N time Day / Hour	
		528						Peak Demand Current-N time Minute	
		653	9		u16	100		Minimum Demand Current-N	LD0.RESCMSTA1.MinAmps.mag.f
		654			ST. Time stamp			Minimum Demand Current-N time Year / Month	LD0.RESCMSTA1.MinAmps.t
		655						Minimum Demand Current-N time Day / Hour	
		656						Minimum Demand Current-N time Minute	

Table 93: VA VB VC : Three-phase voltage measurement instance 1 (VMMXU1)

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
5460		2502:02	14					VA VB VC High alarm	LD0.VMMXU1.HiAlm.stVal
5461		2502:03		Yes					
5462		2502:04	10					VA VB VC High warning	LD0.VMMXU1.HiWrn.stVal
5463		2502:05		Yes					
5464		2502:06	10					VA VB VC Low warning	LD0.VMMXU1.LoWrn.stVal
5465		2502:07		Yes					
5466		2502:08	14					VA VB VC Low alarm	LD0.VMMXU1.LoAlm.stVal
5467		2502:09		Yes					
		265	11		u32	100		VA VB VC VA Amplitude magnitude of instantaneous value	LD0.VMMXU1.PhV.phsA.cVal.mag.f
		266							
		267	11		s16	1		VA VB VC VA angle	LD0.VMMXU1.PhV.phsA.cVal.ang.f
		268	11		u32	100		VA VB VC VB Amplitude magnitude of instantaneous value	LD0.VMMXU1.PhV.phsB.cVal.mag.f
		269							
		270	11		s16	1		VA VB VC VB angle	LD0.VMMXU1.PhV.phsB.cVal.ang.f
		271	11		u32	100		VA VB VC VC Amplitude magnitude of instantaneous value	LD0.VMMXU1.PhV.phsC.cVal.mag.f
		272							

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
		273	11		s16	1		VA VB VC VC angle	LD0.VMMXU1.PhV.phsC.cVal.ang.f
		274	11		u32	100		VA VB VC VAB Amplitude magnitude of instantaneous value	LD0.VMMXU1.PPV.phsAB.instCVal.mag.f
		275							
		276	11		s16	1		VA VB VC VAB angle	LD0.VMMXU1.PPV.phsAB.instCVal.ang.f
		277	11		u32	100		VA VB VC VBC Amplitude magnitude of instantaneous value	LD0.VMMXU1.PPV.phsBC.instCVal.mag.f
		278							
		279	11		s16	1		VA VB VC VBC angle	LD0.VMMXU1.PPV.phsBC.instCVal.ang.f
		280	11		u32	100		VA VB VC VCA Amplitude magnitude of instantaneous value	LD0.VMMXU1.PPV.phsCA.instCVal.mag.f
		281							
		282	11		s16	1		VA VB VC VCA angle	LD0.VMMXU1.PPV.phsCA.instCVal.ang.f
		353	12		u32	100		VA VB VC VAB Amplitude magnitude of reported value	LD0.VMMXU1.PPV.phsAB.cVal.mag.f
		354							
		355	12		u32	100		VA VB VC VBC Amplitude magnitude of reported value	LD0.VMMXU1.PPV.phsBC.cVal.mag.f
		356							
		357	12		u32	100		VA VB VC VCA Amplitude magnitude of reported value	LD0.VMMXU1.PPV.phsCA.cVal.mag.f
		358							

Table 94: VG : Residual voltage measurement instance 1 (RESVMMXU1)

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
5468		2502:10	14					VG High alarm	LD0.RESVMMXU1.HiAlm.stVal
5469		2502:11		Yes					
5470		2502:12	10					VG High warning	LD0.RESVMMXU1.HiWrn.stVal
5471		2502:13		Yes					
		359	11		u32	100		VG Mag (RMS)	LD0.RESVMMXU1.PhV.res.instCVal.mag.f
		360							

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
		361	11		s16	1		VG Ang (RMS)	LD0.RESVMMXU1.PhV.res.instCVal.ang.f

Table 95: V1 V2 V0 : Sequence voltage measurement instance 1 (VSMSQI1)

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
		321	11		u32	100		V1 V2 V0 Positive sequence voltage amplitude instantaneous value	LD0.VSMSQI1.SeqV.c1.instCVal.mag.f
		322							
		323	11		s16	1		V1 V2 V0 Positive sequence voltage angle	LD0.VSMSQI1.SeqV.c1.instCVal.ang.f
		324	11		u32	100		V1 V2 V0 Negative sequence voltage amplitude instantaneous value	LD0.VSMSQI1.SeqV.c2.instCVal.mag.f
		325							
		326	11		s16	1		V1 V2 V0 Negative sequence voltage angle	LD0.VSMSQI1.SeqV.c2.instCVal.ang.f
		332			u32	100		V1 V2 V0 Zero sequence voltage amplitude instantaneous value	LD0.VSMSQI1.SeqV.c3.instCVal.mag.f
		333							
		334			s16	1		V1 V2 V0 Zero sequence voltage angle	LD0.VSMSQI1.SeqV.c3.instCVal.ang.f

Table 96: 1SP SE-1 : Single-phase power and energy measurement instance 1 (SPEMMXU1))

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
		283	11		s32	1		SP SE Active power magnitude of instantaneous value Phase A	LD0.SPEMMXU1.W.phsA.instCVal.mag.f
		284							
		285	11		s32	1		SP SE Active power magnitude of instantaneous value Phase B	LD0.SPEMMXU1.W.phsB.instCVal.mag.f
		286							
		287	11		s32	1		SP SE Active power magnitude of instantaneous value Phase C	LD0.SPEMMXU1.W.phsC.instCVal.mag.f
		288							
		291	11		s32	1		SP SE Reactive power magnitude of instantaneous value Phase A	LD0.SPEMMXU1.VAr.phsA.instCVal.mag.f
		292							

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
		293	11		s32	1		SP SE Reactive power magnitude of instantaneous value Phase B	LD0.SPEMMXU1.VAr.phsB.instCVal.mag.f
		294							
		295	11		s32	1		SP SE Reactive power magnitude of instantaneous value Phase C	LD0.SPEMMXU1.VAr.phsC.instCVal.mag.f
		296							
		713	11		s32	100		SP SE Apparent power magnitude of instantaneous value Phase A	LD0.SPEMMXU1.VA.phsA.instCVal.mag.f
		714							
		715	11		s32	100		SP SE Apparent power magnitude of instantaneous value Phase B	LD0.SPEMMXU1.VA.phsB.instCVal.mag.f
		716							
		717	11		s32	100		SP SE Apparent power magnitude of instantaneous value Phase C	LD0.SPEMMXU1.VA.phsC.instCVal.mag.f
		718							
		719	11		s16	100		Average Power factor, Phase A	LD0.SPEMMXU1.PF.phsA.cVal.mag.f
		720	11		s16	100		Average Power factor, Phase B	LD0.SPEMMXU1.PF.phsB.cVal.mag.f
		721	11		s16	100		Average Power factor, Phase C	LD0.SPEMMXU1.PF.phsC.cVal.mag.f

Table 97: SP SE-1 : Single-phase power and energy measurement instance 1 (SPEMMTR1)

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
		299	11		u32	1		SP SE Accumulated forward active energy value Phase A	LD0.SPEMMTR1.DmdWhA.actVal
		300							
		301	11		u32	1		SP SE Accumulated forward active energy value Phase B	LD0.SPEMMTR1.DmdWhB.actVal
		302							
		303	11		u32	1		SP SE Accumulated forward active energy value Phase C	LD0.SPEMMTR1.DmdWhC.actVal
		304							
		307	11		u32	1		SP SE Accumulated forward reactive energy value Phase A	LD0.SPEMMTR1.DmdVArhA.actVal
		308							

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
		309	11		u32	1		SP SE Accumulated forward reactive energy value Phase B	LD0.SPEMMTR1.DmdVArhB.actVal
		310							
		311	11		u32	1		SP SE Accumulated forward reactive energy value Phase C	LD0.SPEMMTR1.DmdVArhC.actVal
		312							
		364	11		u32	1		Accumulated reverse active energy value, Phase A	LD0.SPEMMTR1.SupWhA.actVal
		365							
		366	11		u32	1		Accumulated reverse active energy value, Phase B	LD0.SPEMMTR1.SupWhB.actVal
		367							
		368	11		u32	1		Accumulated reverse active energy value, Phase C	LD0.SPEMMTR1.SupWhC.actVal
		369							
		372	11		u32	1		Accumulated reverse reactive energy value, Phase A	LD0.SPEMMTR1.SupVArhA.actVal
		373							
		374	11		u32	1		Accumulated reverse reactive energy value, Phase B	LD0.SPEMMTR1.SupVArhB.actVal
		375							
		376	11		u32	1		Accumulated reverse reactive energy value, Phase C	LD0.SPEMMTR1.SupVArhC.actVal
		377							

Table 98: P E-1 : Three-phase power and energy measurement instance 1 (PEMMXU1)

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
		289	11		u32	1		P E Active power magnitude of instantaneous value	LD0.PEMMXU1.TotW.instMag.f
		290							
		297	11		u32	1		P E Total Reactive Power	LD0.PEMMXU1.TotVAr.instMag.f
		298							
		328:0-6			u16	100		power factor	LD0.PEMMXU1.TotPF.instMag.f
		328:07						0=positive; 1=negative;	
		328:08						0=leading;1=lagging;	
		336			u16	1		poewr factor direction 1 = lagging; 0 = leading;	LD0.PEMMXU1.TotPF.instMag.f
		335	11		s16	100		P E Average Power factor	LD0.PEMMXU1.TotPF.instMag.f
		337	11		s32	1		P E Total Apparent Power	LD0.PEMMXU1.TotVA.instMag.f

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
		338							

Table 99: P E-1 : Three-phase power and energy measurement instance 1 (PEMMTR1)

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
		305	11		u32	1		P E(1) Accumulated forward active energy value	LD0.PEMMTR1.DmdWh.actVal
		306							
		313	11		u32	1		P E(1) Accumulated forward reactive energy value	LD0.PEMMTR1.DmdVArh.actVal
		314							
		370	11		u32	1		P E(1) Accumulated reverse active energy value	LD0.PEMMTR1.SupWh.actVal
		371							
		378	11		u32	1		P E(1) Accumulated reverse reactive energy value	LD0.PEMMTR1.SupVArh.actVal
		379							

Table 100: SP SE-1 : Single-phase power and energy demand instance 1 (SPEMSTA1)

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
		389	11		s32	1		SP SE Active power magnitude of reported value Phase A	LD0.SPEMSTA1.AvWPhsA.mag.f
		390							
		391	11		s32	1		SP SE Active power magnitude of reported value Phase B	LD0.SPEMSTA1.AvWPhsB.mag.f
		392							
		393	11		s32	1		SP SE Active power magnitude of reported value Phase C	LD0.SPEMSTA1.AvWPhsC.mag.f
		394							
		397	11		s32	1		SP SE Reactive power magnitude of reported value Phase A	LD0.SPEMSTA1.AvVArPhsA.mag.f
		398							
		399	11		s32	1		SP SE Reactive power magnitude of reported value Phase B	LD0.SPEMSTA1.AvVArPhsB.mag.f
		400							
		401	11		s32	1		SP SE Reactive power magnitude of reported value Phase C	LD0.SPEMSTA1.AvVArPhsC.mag.f
		402							

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
		529	6		s32	1		Peak Demand KWatts-A	LD0.SPEMSTA1.MaxWPhsA.mag.f
		530							
		531			ST. Time stamp	1		Peak Demand KWatts-A time Year / Month	LD0.SPEMSTA1.MaxWPhsA.t
		532						Peak Demand KWatts-A time Day / Hour	
		533						Peak Demand KWatts-A time Minute	
		534	6		s32	1		Peak Demand KWatts-B	LD0.SPEMSTA1.MaxWPhsB.mag.f
		535							
		536			ST. Time stamp	1		Peak Demand KWatts-B time Year / Month	LD0.SPEMSTA1.MaxWPhsB.t
		537						Peak Demand KWatts-B time Day / Hour	
		538						Peak Demand KWatts-B time Minute	
		539	6		s32	1		Peak Demand KWatts-C	LD0.SPEMSTA1.MaxWPhsC.mag.f
		540							
		541			ST. Time stamp	1		Peak Demand KWatts-C time Year / Month	LD0.SPEMSTA1.MaxWPhsC.t
		542						Peak Demand KWatts-C time Day / Hour	
		543						Peak Demand KWatts-C time Minute	
		549	6		s32	1		Peak Demand KVARs-A	LD0.SPEMSTA1.MaxVArPhsA.mag.f
		550							
		551			ST. Time stamp			Peak Demand KVARs-A time Year / Month	LD0.SPEMSTA1.MaxVArPhsA.t
		552						Peak Demand KVARs-A time Day / Hour	
		553						Peak Demand KVARs-A time Minute	
		554	6		s32			Peak Demand KVARs-B	LD0.SPEMSTA1.MaxVArPhsB.mag.f
		555							
		556			ST. Time stamp			Peak Demand KVARs-B time Year / Month	LD0.SPEMSTA1.MaxVArPhsB.t

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
		557						Peak Demand KVARs-B time Day / Hour	
		558						Peak Demand KVARs-B time Minute	
		559	6		s32	1		Peak Demand KVARs-C	LD0.SPEMSTA1.MaxVArPhsC.mag.f
		560							
		561			ST. Time stamp			Peak Demand KVARs-C time Year / Month	LD0.SPEMSTA1.MaxVArPhsC.t
		562						Peak Demand KVARs-C time Day / Hour	
		563						Peak Demand KVARs-C time Minute	
		657	9		s32	1		Minimum Demand KWatts-A	LD0.SPEMSTA1.MinWPhsA.mag.f
		658							
		659			ST. Time stamp			Minimum Demand KWatts-A Time Year / Month	LD0.SPEMSTA1.MinWPhsA.t
		660						Minimum Demand KWatts-A Time Day / Hour	
		661						Minimum Demand KWatts-A Time Minute	
		662	9		s32	1		Minimum Demand Kwatts-B	LD0.SPEMSTA1.MinWPhsB.mag.f
		663							
		664			ST. Time stamp			Minimum Demand KWatts-B Time Year / Month	LD0.SPEMSTA1.MinWPhsB.t
		665						Minimum Demand KWatts-B Time Day / Hour	
		666						Minimum Demand KWatts-B Time Minute	
		667	9		s32	1		Minimum Demand Kwatts-C	LD0.SPEMSTA1.MinWPhsC.mag.f
		668							
		669			ST. Time stamp			Minimum Demand KWatts-C Time Year / Month	LD0.SPEMSTA1.MinWPhsC.t
		670						Minimum Demand KWatts-C Time Day / Hour	
		671						Minimum Demand KWatts-C Time Minute	
		677	9		s32	1		Minimum Demand KVARs-A	LD0.SPEMSTA1.MinVArPhsA.mag.f
		678							

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
		679			ST. Time stamp			Minimum Demand KVARs-A Time Year / Month	LD0.SPEMSTA1.MinVArPhsA.t
		680						Minimum Demand KVARs-A Time Day / Hour	
		681						Minimum Demand KVARs-A Time Minute	
		682	9		s32	1		Minimum Demand KVARs-B	LD0.SPEMSTA1.MinVArPhsB.mag.f
		683							
		684			ST. Time stamp			Minimum Demand KVARs-B Time Year / Month	LD0.SPEMSTA1.MinVArPhsB.t
		685						Minimum Demand KVARs-B Time Day / Hour	
		686						Minimum Demand KVARs-B Time Minute	
		687	9		s32	1		Minimum Demand KVARs-C	LD0.SPEMSTA1.MinVArPhsC.mag.f
		688							
		689			ST. Time stamp			Minimum Demand KVARs-C Time Year / Month	LD0.SPEMSTA1.MinVArPhsC.t
		690						Minimum Demand KVARs-C Time Day / Hour	
		691						Minimum Demand KVARs-C Time Minute	

Table 101: P E-1 : Three-phase power and energy demand instance 1 (PEMSTA1)

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
		544			u32	1		3 Phase Peak Demand KWatts	LD0.PEMSTA1.MaxW.mag.f
		545							
		546			ST. Time stamp	1		3 Phase Peak Demand Kwatts time Year / Month	LD0.PEMSTA1.MaxW.t
		547						3 Phase Peak Demand Kwatts time Day / Hour	
		548						3 Phase Peak Demand Kwatts time Minute	
		549							
		564			u32	1		3 Phase Peak Demand KVARs	LD0.PEMSTA1.MaxVAr.mag.f
		565							
		566			ST. Time stamp	1		3 Phase Peak Demand KVARs time Year / Month	LD0.PEMSTA1.MaxVAr.t

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
		567						3 Phase Peak Demand KVARs time Day / Hour	
		568						3 Phase Peak Demand KVARs time Minute	
		672	9		u32			3 Phase Minimum Demand KWatts	LD0.PEMSTA1.MinW.mag.f
		673							
		674			ST. Time stamp			3 Phase Minimum Demand KWatts Time Year / Month	LD0.PEMSTA1.MinW.t
		675						3 Phase Minimum Demand KWatts Time Day / Hour	
		676						3 Phase Minimum Demand KWatts Time Minute	
		692	9		u32			3 Phase Minimum Demand KVARs	LD0.PEMSTA1.MinVAr.mag.f
		693							
		694			ST. Time stamp			3 Phase Minimum Demand KVARs Time Year / Month	LD0.PEMSTA1.MinVAr.t
		695						3 Phase Minimum Demand KVARs Time Day / Hour	
		696						3 Phase Minimum Demand KVARs Time Minute	

Table 102: PQI-1 : Current total demand distortion instance 1 (CMHAI1)

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
6324		3020:04	14					PQI-1 Alarm signal for TDD	LD0.CMHAI1.Alm.stVal
6325		3020:05		Yes					
		3500	0		u16	100		PQI-1 3 second mean value of TDD for phase A	LD0.CMHAI1.TddA.phsA.cVal.mag.f
		3501	0		u16	100		PQI-1 3 second mean value of TDD for phase B	LD0.CMHAI1.TddA.phsB.cVal.mag.f
		3502	0		u16	100		PQI-1 3 second mean value of TDD for phase C	LD0.CMHAI1.TddA.phsC.cVal.mag.f
		3512	0		u16	100		PQI-1 Demand value for TDD for phase A	LD0.CMHAI1.DmdTddA.phsA.cVal.mag.f
		3513	0		u16	100		PQI-1 Demand value for TDD for phase B	LD0.CMHAI1.DmdTddA.phsB.cVal.mag.f
		3514	0		u16	100		PQI-1 Demand value for TDD for phase C	LD0.CMHAI1.DmdTddA.phsC.cVal.mag.f

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
		3518	0		u16	100		PQI-1 Maximum demand TDD for phase A	LD0.CMHAI1.MaxDmdTddA.phsA.cVal.mag.f
		3519	0		u16	100		PQI-1 Maximum demand TDD for phase B	LD0.CMHAI1.MaxDmdTddA.phsB.cVal.mag.f
		3520	0		u16	100		PQI-1 Maximum demand TDD for phase C	LD0.CMHAI1.MaxDmdTddA.phsC.cVal.mag.f

Table 103: PQVPH-1 : Voltage total harmonic distortion instance 1 (VMHAI1)

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
6328		3020:08	14					PQVPH-1 Alarm signal for THD	LD0.VMHAI1.Alm.stVal
6329		3020:09		Yes					
		3506	0		u16	100		PQVPH-1 3 second mean value of THD for phase A	LD0.VMHAI1.ThdPhV.phsA.cVal.mag.f
		3507	0		u16	100		PQVPH-1 3 second mean value of THD for phase B	LD0.VMHAI1.ThdPhV.phsB.cVal.mag.f
		3508	0		u16	100		PQVPH-1 3 second mean value of THD for phase C	LD0.VMHAI1.ThdPhV.phsC.cVal.mag.f
		3524	0		u16	100		PQVPH-1 Demand value for THD for phase A	LD0.VMHAI1.DmdThdPhV.phsA.cVal.mag.f
		3525	0		u16	100		PQVPH-1 Demand value for THD for phase B	LD0.VMHAI1.DmdThdPhV.phsB.cVal.mag.f
		3526	0		u16	100		PQVPH-1 Demand value for THD for phase C	LD0.VMHAI1.DmdThdPhV.phsC.cVal.mag.f
		3530	0		u16	100		PQVPH-1 Maximum demand TDD for phase A	LD0.VMHAI1.MaxDmdThdV.phsA.cVal.mag.f
		3531	0		u16	100		PQVPH-1 Maximum demand TDD for phase B	LD0.VMHAI1.MaxDmdThdV.phsB.cVal.mag.f
		3532	0		u16	100		PQVPH-1 Maximum demand TDD for phase C	LD0.VMHAI1.MaxDmdThdV.phsC.cVal.mag.f

Table 104: PQSS-1 : Voltage variation instance 1 (PH1QVVR1)

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
6332		3021:00	0					PQSS-1 Voltage swell detected	LD0.PH1QVVR1.SwlOp.stVal

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
6333		3021:01		Yes					
6334		3021:02	0					PQSS-1 Voltage dip detected	LD0.PH1QVVR1.DipOp.stVal
6335		3021:03		Yes					
6336		3021:04	0					PQSS-1 Voltage interruption detected	LD0.PH1QVVR1.IntrOp.stVal
6337		3021:05		Yes					
6338		3021:06	0					PQSS-1 Maximum duration detected	LD0.PH1QVVR1.VarEnd.stVal
6339		3021:07		Yes					
6340		3021:08	0					PQSS-1 Voltage variation present	LD0.PH1QVVR1.VarStrGen.stVal
6341		3021:09		Yes					
6360		3022:12	0					Voltage dip active	LD0.PH1QVVR1.DipStr.stVal
6361		3022:13		yes					
6362		3022:14	0					Voltage interruption active	LD0.PH1QVVR1.IntrStr.stVal
6363		3022:15		yes					
6366		3023:02						Voltage swell active	LD0.PH1QVVR1.SwlStr.stVal
6367		3023:03		yes					
		3550	0		u32	100		PQSS-1 Voltage Variation Magnitude of the last completed event	LD0.PH1QVVR1.VVa.mag.f
		3551							
		3552	0		u32	100		PQSS-1 Voltage Variation Duration of the last completed event	LD0.PH1QVVR1.VVaTm.mag.f
		3553							
		3554	0		u32	100		PQSS-1 Current magnitude Ph A preceding variation	LD0.PH1QVVR1.APreVa.mag.f
		3555							
		3556	0		u32	100		PQSS-1 Instantaneous swell operation counter	LD0.PH1QVVR1.SwlInstCnt.stVal
		3557							
		3558	0		u32	100		PQSS-1 Momentary swell operation counter	LD0.PH1QVVR1.SwlMomCnt.stVal
		3559							
		3560	0		u32	100		PQSS-1 Temporary swell operation counter	LD0.PH1QVVR1.SwlTmpCnt.stVal
		3561							
		3562	0		u32	100		PQSS-1 Maximum duration swell operation counter	LD0.PH1QVVR1.SwlMaxCnt.stVal
		3563							
		3564	0		u32	100		PQSS-1 Instantaneous dip operation counter	LD0.PH1QVVR1.DipInstCnt.stVal
		3565							

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
		3566	0		u32	100		PQSS-1 Temporary dip operation counter	LD0.PH1QVVR1.DipTmpCnt.stVal
		3567							
		3568	0		u32	100		PQSS-1 Momentary dip operation counter	LD0.PH1QVVR1.DipMomCnt.stVal
		3569							
		3570	0		u32	100		PQSS-1 Maximum duration dip operation counter	LD0.PH1QVVR1.DipMaxCnt.stVal
		3571							
		3572	0		u32	100		PQSS-1 Momentary interruption operation counter	LD0.PH1QVVR1.IntrMomCnt.stVal
		3573							
		3574	0		u32	100		PQSS-1 Temporary interruption operation counter	LD0.PH1QVVR1.IntrTmpCnt.stVal
		3575							
		3576	0		u32	100		PQSS-1 Sustained interruption operation counter	LD0.PH1QVVR1.IntrSstCnt.stVal
		3577							
		3578	0		u32	100		PQSS-1 Maximum duration interruption operation counter	LD0.PH1QVVR1.IntrMaxCnt.stVal
		3579							

Table 105: PQSS-1 : Voltage variation instance 1 (PH2QVVR1)

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
		3582	0		u32	100		PQSS-2 Voltage Variation Magnitude of the last completed event	LD0.PH2QVVR1.VVa.mag.f
		3583							
		3584	0		u32	100		PQSS-2 Voltage Variation Duration of the last completed event	LD0.PH2QVVR1.VVaTm.mag.f
		3585							
		3586	0		u32	100		PQSS-2 Current magnitude Phase B preceding variation	LD0.PH2QVVR1.APreVa.mag.f
		3587							

Table 106: PQSS-1 : Voltage variation instance 1 (PH3QVVR1)

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
		3588	0		u32	100		PQSS-3 Voltage Variation Magnitude of the last completed event	LD0.PH3QVVR1.VVa.mag.f
		3589							

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
		3590	0		u32	100		PQSS-3 Voltage Variation Duration of the last completed event	LD0.PH3QVVR1.VVaTm.mag.f
		3591							
		3592	0		u32	100		PQSS-3 Current magnitude Ph C preceding variation	LD0.PH3QVVR1.APreVa.mag.f
		3593							

Table 107: PQSS-1 : Voltage variation instance 1 (QVV1MSTA1)

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
		3594	0		u16	1		PQSS-1 Variation type	LD0.QVV1MSTA1.VVaTyp.stVal
		3596	0		u32	100		PQSS-1 Variation magnitude Phase A	LD0.QVV1MSTA1.VVaA.mag.f
		3597							
		3598	0		u32			PQSS-1 Variation magnitude Phase B	LD0.QVV1MSTA1.VVaB.mag.f
		3599							
		3600	0		u32	100		PQSS-1 Variation magnitude Phase C	LD0.QVV1MSTA1.VVaC.mag.f
		3601							
		3602	0		u32			PQSS-1 Variation duration Phase A	LD0.QVV1MSTA1.VVaTmA.mag.f
		3603							
		3604	0		u32	100		PQSS-1 Variation duration Phase B	LD0.QVV1MSTA1.VVaTmB.mag.f
		3605							
		3606	0		u32			PQSS-1 Variation duration Phase C	LD0.QVV1MSTA1.VVaTmC.mag.f
		3607							
		3608	0		u32	100		PQSS-1 Current magnitude Phase A preceding variation	LD0.QVV1MSTA1.APreVaA.mag.f
		3609							
		3610	0		u32			PQSS-1 Current magnitude Phase B preceding variation	LD0.QVV1MSTA1.APreVaB.mag.f
		3611							
		3612	0		u32	100		PQSS-1 Current magnitude Phase C preceding variation	LD0.QVV1MSTA1.APreVaC.mag.f
		3613							

Table 108: PQSS-1 : Voltage variation instance 1 (QVV2MSTA1)

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
		3614	0		u16	1		PQSS-1 Variation type	LD0.QVV2MSTA1.VVaTyp.stVal

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
		3616	0		u32	100		PQSS-1 Variation magnitude Phase A	LD0.QVV2MSTA1.VVaA.mag.f
		3617							
		3618	0		u32	100		PQSS-1 Variation magnitude Phase B	LD0.QVV2MSTA1.VVaB.mag.f
		3619							
		3620	0		u32	100		PQSS-1 Variation magnitude Phase C	LD0.QVV2MSTA1.VVaC.mag.f
		3621							
		3622	0		u32	100		PQSS-1 Variation duration Phase A	LD0.QVV2MSTA1.VVaTmA.mag.f
		3623							
		3624	0		u32	100		PQSS-1 Variation duration Phase B	LD0.QVV2MSTA1.VVaTmB.mag.f
		3625							
		3626	0		u32	100		PQSS-1 Variation duration Phase C	LD0.QVV2MSTA1.VVaTmC.mag.f
		3627							
		3628	0		u32	100		PQSS-1 Current magnitude Phase A preceding variation	LD0.QVV2MSTA1.APreVaA.mag.f
		3629							
		3630	0		u32	100		PQSS-1 Current magnitude Phase B preceding variation	LD0.QVV2MSTA1.APreVaB.mag.f
		3631							
		3632	0		u32	100		PQSS-1 Current magnitude Phase C preceding variation	LD0.QVV2MSTA1.APreVaC.mag.f
		3633							

Table 109: PQSS-1 : Voltage variation instance 1 (QVV3MSTA1)

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
		3634	0		u16	1		PQSS-1 Variation type	LD0.QVV3MSTA1.VVaTyp.stVal
		3636	0		u32	100		PQSS-1 Variation magnitude Phase A	LD0.QVV3MSTA1.VVaA.mag.f
		3637							
		3638	0		u32	100		PQSS-1 Variation magnitude Phase B	LD0.QVV3MSTA1.VVaB.mag.f
		3639							
		3640	0		u32	100		PQSS-1 Variation magnitude Phase C	LD0.QVV3MSTA1.VVaC.mag.f
		3641							
		3642	0		u32	100		PQSS-1 Variation duration Phase A	LD0.QVV3MSTA1.VVaTmA.mag.f
		3643							

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
		3644	0		u32	100		PQSS-1 Variation duration Phase B	LD0.QVV3MSTA1.VVaTmB.mag.f
		3645							
		3646	0		u32	100		PQSS-1 Variation duration Phase C	LD0.QVV3MSTA1.VVaTmC.mag.f
		3647							
		3648	0		u32	100		PQSS-1 Current magnitude Phase A preceding variation	LD0.QVV3MSTA1.APreVaA.mag.f
		3649							
		3650	0		u32	100		PQSS-1 Current magnitude Phase B preceding variation	LD0.QVV3MSTA1.APreVaB.mag.f
		3651							
		3652	0		u32	100		PQSS-1 Current magnitude Phase C preceding variation	LD0.QVV3MSTA1.APreVaC.mag.f
		3653							

Table 110: PQVUB-1 : Voltage unbalance instance 1 (VSQVUB1)

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
6354		3022:06	0					PQVUB-1 Alarm active when percentile unbalance exceeds the limit	LD0.VSQVUB1.HiPctVUnb.stVal
6355		3022:07		Yes					
6356		3022:08	0					PQVUB-1 Observation period is active	LD0.VSQVUB1.ObsPerAct.stVal
6357		3022:09		Yes					
6358		3022:10	0					PQVUB-1 Alarm active when 3 sec voltage unbalance exceeds the limit	LD0.VSQVUB1.VarStr.stVal
6359		3022:11		Yes					

Table 111: LoadProf : Load profile (LDPMSTA1)

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
5572		2509:02	10					LoadProf Recording memory warning status	LD0.LDPMSTA1.MemWrn.stVal
5573		2509:03		Yes					
5574		2509:04	14					LoadProf Recording memory alarm status	LD0.LDPMSTA1.MemAlm.stVal
5575		2509:05		Yes					

Table 112: f : Frequency measurement instance 1 (FMMXU1)

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
		327	11		u16	100		f Frequency instantaneous value	LD0.FMMXU1.Hz.instMag.f

Table 113: TP (1) : Minimum pulse timer (2 pcs) instance 1 (TPGAPC1)

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
2942		2202:02	2					TP-1 Output 2 status	LD0.TPGAPC1.Op.general
2943		2202:03		Yes					
2956		2203:00	2					TP-1 Output 1 status	LD0.TPGAPC1.Str.general
2957		2203:01		Yes					

Table 114: TP (2) : Minimum pulse timer (2 pcs) instance 2 (TPGAPC2)

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
2944		2202:04	2					TP-2 Output 2 status	LD0.TPGAPC2.Op.general
2945		2202:05		Yes					
2958		2203:02	2					TP-2 Output 1 status	LD0.TPGAPC2.Str.general
2959		2203:03		Yes					

Table 115: TP (3) : Minimum pulse timer (2 pcs) instance 3 (TPGAPC3)

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
2946		2202:06	2					TP-3 Output 2 status	LD0.TPGAPC3.Op.general
2947		2202:07		Yes					
2960		2203:04	2					TP-3 Output 1 status	LD0.TPGAPC3.Str.general
2961		2203:05		Yes					

Table 116: TP (4) : Minimum pulse timer (2 pcs) instance 4 (TPGAPC4)

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
2948		2202:08	2					TP-4 Output 2 status	LD0.TPGAPC4.Op.general
2949		2202:09		Yes					
2962		2203:06	2					TP-4 Output 1 status	LD0.TPGAPC4.Str.general
2963		2203:07		Yes					

Table 117: 62CLD-1 : Minimum pulse timer (2 pcs second resolution) instance 1 (TPSGAPC1)

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
2880		2198:04	2					62CLD-1 Output 1 status	LD0.TPSGAPC1.Str.general
2881		2198:05		Yes					
2940		2202:00	2					62CLD-1 Output 2 status	LD0.TPSGAPC1.Op.general
2941		2202:01		Yes					

Table 118: 62CLD-2 : Minimum pulse timer (2 pcs minute resolution) instance 1 (TPMGAPC1)

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
2882		2198:06	2					62CLD-2 Output 1 status	LD0.TPMGAPC1.Str.general
2883		2198:07		Yes					
2938		2201:14	2					62CLD-2 Output 2 status	LD0.TPMGAPC1.Op.general
2939		2201:15		Yes					

Table 119: PT-1 : Pulse timer (8 pcs) instance 1 (PTGAPC1)

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
	7682	1743:00	0					PT-1 Input 1 status	LD0.PTGAPC1.In1.stVal
	7684	1743:02	0					PT-1 Input 2 status	LD0.PTGAPC1.In2.stVal
	7686	1743:04	0					PT-1 Input 3 status	LD0.PTGAPC1.In3.stVal
	7688	1743:06	0					PT-1 Input 4 status	LD0.PTGAPC1.In4.stVal
	7690	1743:08	0					PT-1 Input 5 status	LD0.PTGAPC1.In5.stVal
	7692	1743:10	0					PT-1 Input 6 status	LD0.PTGAPC1.In6.stVal
	7694	1743:12	0					PT-1 Input 7 status	LD0.PTGAPC1.In7.stVal
	7696	1743:14	0					PT-1 Input 8 status	LD0.PTGAPC1.In8.stVal
7698		1744:00	0					PT-1 Output 1 status	LD0.PTGAPC1.Q1.stVal
7700		1744:02	0					PT-1 Output 2 status	LD0.PTGAPC1.Q2.stVal
7702		1744:04	0					PT-1 Output 3 status	LD0.PTGAPC1.Q3.stVal
7704		1744:06	0					PT-1 Output 4 status	LD0.PTGAPC1.Q4.stVal
7706		1744:08	0					PT-1 Output 5 status	LD0.PTGAPC1.Q5.stVal
7708		1744:10	0					PT-1 Output 6 status	LD0.PTGAPC1.Q6.stVal
7710		1744:12	0					PT-1 Output 7 status	LD0.PTGAPC1.Q7.stVal
7712		1744:14	0					PT-1 Output 8 status	LD0.PTGAPC1.Q8.stVal

Table 120: PT-2 : Pulse timer (8 pcs) instance 2 (PTGAPC2)

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
	7714	1745:00	0					PT-2 Input 1 status	LD0.PTGAPC2.In1.stVal
	7716	1745:02	0					PT-2 Input 2 status	LD0.PTGAPC2.In2.stVal
	7718	1745:04	0					PT-2 Input 3 status	LD0.PTGAPC2.In3.stVal
	7720	1745:06	0					PT-2 Input 4 status	LD0.PTGAPC2.In4.stVal
	7722	1745:08	0					PT-2 Input 5 status	LD0.PTGAPC2.In5.stVal
	7724	1745:10	0					PT-2 Input 6 status	LD0.PTGAPC2.In6.stVal
	7726	1745:12	0					PT-2 Input 7 status	LD0.PTGAPC2.In7.stVal
	7728	1745:14	0					PT-2 Input 8 status	LD0.PTGAPC2.In8.stVal
7730		1746:00	0					PT-2 Output 1 status	LD0.PTGAPC2.Q1.stVal
7732		1746:02	0					PT-2 Output 2 status	LD0.PTGAPC2.Q2.stVal
7734		1746:04	0					PT-2 Output 3 status	LD0.PTGAPC2.Q3.stVal
7736		1746:06	0					PT-2 Output 4 status	LD0.PTGAPC2.Q4.stVal
7738		1746:08	0					PT-2 Output 5 status	LD0.PTGAPC2.Q5.stVal
7740		1746:10	0					PT-2 Output 6 status	LD0.PTGAPC2.Q6.stVal
7742		1746:12	0					PT-2 Output 7 status	LD0.PTGAPC2.Q7.stVal
7744		1746:14	0					PT-2 Output 8 status	LD0.PTGAPC2.Q8.stVal

Table 121: PT-2 : 2TOF-1 : Time delay off (8 pcs) instance 1 (TOFGAPC1)

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
	7616	1739:00	0					TOF-1 Input 1 status	LD0.TOFGAPC1.In1.stVal

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
	7618	1739:02	0					TOF-1 Input 2 status	LD0.TOFGAPC1.In2.stVal
	7620	1739:04	0					TOF-1 Input 3 status	LD0.TOFGAPC1.In3.stVal
	7622	1739:06	0					TOF-1 Input 4 status	LD0.TOFGAPC1.In4.stVal
	7624	1739:08	0					TOF-1 Input 5 status	LD0.TOFGAPC1.In5.stVal
	7626	1739:10	0					TOF-1 Input 6 status	LD0.TOFGAPC1.In6.stVal
	7628	1739:12	0					TOF-1 Input 7 status	LD0.TOFGAPC1.In7.stVal
	7630	1739:14	0					TOF-1 Input 8 status	LD0.TOFGAPC1.In8.stVal
7632		1740:00	0					TOF-1 Output 1 status	LD0.TOFGAPC1.Q1.stVal
7634		1740:02	0					TOF-1 Output 2 status	LD0.TOFGAPC1.Q2.stVal
7636		1740:04	0					TOF-1 Output 3 status	LD0.TOFGAPC1.Q3.stVal
7638		1740:06	0					TOF-1 Output 4 status	LD0.TOFGAPC1.Q4.stVal
7640		1740:08	0					TOF-1 Output 5 status	LD0.TOFGAPC1.Q5.stVal
7642		1740:10	0					TOF-1 Output 6 status	LD0.TOFGAPC1.Q6.stVal
7644		1740:12	0					TOF-1 Output 7 status	LD0.TOFGAPC1.Q7.stVal
7646		1740:14	0					TOF-1 Output 8 status	LD0.TOFGAPC1.Q8.stVal

Table 122: TOF-2 : Time delay off (8 pcs) instance 2 (TOFGAPC2)

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
	7650	1741:00	0					TOF-2 Input 1 status	LD0.TOFGAPC2.In1.stVal
	7652	1741:02	0					TOF-2 Input 2 status	LD0.TOFGAPC2.In2.stVal
	7654	1741:04	0					TOF-2 Input 3 status	LD0.TOFGAPC2.In3.stVal
	7656	1741:06	0					TOF-2 Input 4 status	LD0.TOFGAPC2.In4.stVal
	7658	1741:08	0					TOF-2 Input 5 status	LD0.TOFGAPC2.In5.stVal
	7660	1741:10	0					TOF-2 Input 6 status	LD0.TOFGAPC2.In6.stVal
	7662	1741:12	0					TOF-2 Input 7 status	LD0.TOFGAPC2.In7.stVal
	7664	1741:14	0					TOF-2 Input 8 status	LD0.TOFGAPC2.In8.stVal
7666		1742:00	0					TOF-2 Output 1 status	LD0.TOFGAPC2.Q1.stVal
7668		1742:02	0					TOF-2 Output 2 status	LD0.TOFGAPC2.Q2.stVal
7670		1742:04	0					TOF-2 Output 3 status	LD0.TOFGAPC2.Q3.stVal
7672		1742:06	0					TOF-2 Output 4 status	LD0.TOFGAPC2.Q4.stVal
7674		1742:08	0					TOF-2 Output 5 status	LD0.TOFGAPC2.Q5.stVal
7676		1742:10	0					TOF-2 Output 6 status	LD0.TOFGAPC2.Q6.stVal
7678		1742:12	0					TOF-2 Output 7 status	LD0.TOFGAPC2.Q7.stVal
7680		1742:14	0					TOF-2 Output 8 status	LD0.TOFGAPC2.Q8.stVal

Table 123: TON -1 : Time delay on (8 pcs) instance 1 (TONGAPC1)

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
	7548	1735:00	0					TON -1 Input 1	LD0.TONGAPC1.In1.stVal
	7550	1735:02	0					TON -1 Input 2	LD0.TONGAPC1.In2.stVal
	7552	1735:04	0					TON -1 Input 3	LD0.TONGAPC1.In3.stVal

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
	7554	1735:06	0					TON -1 Input 4	LD0.TONGAPC1.In4.stVal
	7556	1735:08	0					TON -1 Input 5	LD0.TONGAPC1.In5.stVal
	7558	1735:10	0					TON -1 Input 6	LD0.TONGAPC1.In6.stVal
	7560	1735:12	0					TON -1 Input 7	LD0.TONGAPC1.In7.stVal
	7562	1735:14	0					TON -1 Input 8	LD0.TONGAPC1.In8.stVal
7564		1736:00	0					TON -1 Output 1	LD0.TONGAPC1.Q1.stVal
7566		1736:02	0					TON -1 Output 2	LD0.TONGAPC1.Q2.stVal
7568		1736:04	0					TON -1 Output 3	LD0.TONGAPC1.Q3.stVal
7570		1736:06	0					TON -1 Output 4	LD0.TONGAPC1.Q4.stVal
7572		1736:08	0					TON -1 Output 5	LD0.TONGAPC1.Q5.stVal
7574		1736:10	0					TON -1 Output 6	LD0.TONGAPC1.Q6.stVal
7576		1736:12	0					TON -1 Output 7	LD0.TONGAPC1.Q7.stVal
7578		1736:14	0					TON -1 Output 8	LD0.TONGAPC1.Q8.stVal

Table 124: TON -2 : Time delay on (8 pcs) instance 2 (TONGAPC2)

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
	7582	1737:00	0					TON -2 Input 1	LD0.TONGAPC2.In1.stVal
	7584	1737:02	0					TON -2 Input 2	LD0.TONGAPC2.In2.stVal
	7586	1737:04	0					TON -2 Input 3	LD0.TONGAPC2.In3.stVal
	7588	1737:06	0					TON -2 Input 4	LD0.TONGAPC2.In4.stVal
	7590	1737:08	0					TON -2 Input 5	LD0.TONGAPC2.In5.stVal
	7592	1737:10	0					TON -2 Input 6	LD0.TONGAPC2.In6.stVal
	7594	1737:12	0					TON -2 Input 7	LD0.TONGAPC2.In7.stVal
	7596	1737:14	0					TON -2 Input 8	LD0.TONGAPC2.In8.stVal
7598		1738:00	0					TON -2 Output 1	LD0.TONGAPC2.Q1.stVal
7600		1738:02	0					TON -2 Output 2	LD0.TONGAPC2.Q2.stVal
7602		1738:04	0					TON -2 Output 3	LD0.TONGAPC2.Q3.stVal
7604		1738:06	0					TON -2 Output 4	LD0.TONGAPC2.Q4.stVal
7606		1738:08	0					TON -2 Output 5	LD0.TONGAPC2.Q5.stVal
7608		1738:10	0					TON -2 Output 6	LD0.TONGAPC2.Q6.stVal
7610		1738:12	0					TON -2 Output 7	LD0.TONGAPC2.Q7.stVal
7612		1738:14	0					TON -2 Output 8	LD0.TONGAPC2.Q8.stVal

Table 125: SR-1 : Set reset (8 pcs) instance 1 (SRGAPC1)

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
	45	907:03	0					SR-1 Set Q1 output when set	LD0.SRGAPC1.Set1.stVal
	46	907:02	0					SR-1 Set Q2 output when set	LD0.SRGAPC1.Set2.stVal
	47	907:01	0					SR-1 Set Q3 output when set	LD0.SRGAPC1.Set3.stVal

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
	48	907:00	0					SR-1 Set Q4 output when set	LD0.SRGAPC1.Set4.stVal
	49	908:15	0					SR-1 Set Q5 output when set	LD0.SRGAPC1.Set5.stVal
	50	908:14	0					SR-1 Set Q6 output when set	LD0.SRGAPC1.Set6.stVal
	51	908:13	0					SR-1 Set Q7 output when set	LD0.SRGAPC1.Set7.stVal
	52	908:12	0					SR-1 Set Q8 output when set	LD0.SRGAPC1.Set8.stVal
	53	908:11	0					SR-1 Resets Q1 output when set	LD0.SRGAPC1.Rs1.stVal
	54	908:10	0					SR-1 Resets Q2 output when set	LD0.SRGAPC1.Rs2.stVal
	55	908:09	0					SR-1 Resets Q3 output when set	LD0.SRGAPC1.Rs3.stVal
	56	908:08	0					SR-1 Resets Q4 output when set	LD0.SRGAPC1.Rs4.stVal
	57	908:07	0					SR-1 Resets Q5 output when set	LD0.SRGAPC1.Rs5.stVal
	58	908:06	0					SR-1 Resets Q6 output when set	LD0.SRGAPC1.Rs6.stVal
	59	908:05	0					SR-1 Resets Q7 output when set	LD0.SRGAPC1.Rs7.stVal
	60	908:04	0					SR-1 Resets Q8 output when set	LD0.SRGAPC1.Rs8.stVal
	601		0					SR-1 Set Q1 output when set	LD0.SRGAPC1.Set1.stVal
	602			Yes					
	603		0					SR-1 Set Q2 output when set	LD0.SRGAPC1.Set2.stVal
	604			Yes					
	605		0					SR-1 Set Q3 output when set	LD0.SRGAPC1.Set3.stVal
	606			Yes					
	607		0					SR-1 Set Q4 output when set	LD0.SRGAPC1.Set4.stVal
	608			Yes					
	609		0					SR-1 Set Q5 output when set	LD0.SRGAPC1.Set5.stVal
	610			Yes					
	611		0					SR-1 Set Q6 output when set	LD0.SRGAPC1.Set6.stVal
	612			Yes					
	613		0					SR-1 Set Q7 output when set	LD0.SRGAPC1.Set7.stVal
	614			Yes					
	615		0					SR-1 Set Q8 output when set	LD0.SRGAPC1.Set8.stVal

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
	616			Yes					
	617		0					SR-1 Resets Q1 output when set	LD0.SRGAPC1.Rs1.stVal
	618			Yes					
	619		0					SR-1 Resets Q2 output when set	LD0.SRGAPC1.Rs2.stVal
	620			Yes					
	621		0					SR-1 Resets Q3 output when set	LD0.SRGAPC1.Rs3.stVal
	622			Yes					
	623		0					SR-1 Resets Q4 output when set	LD0.SRGAPC1.Rs4.stVal
	624			Yes					
	625		0					SR-1 Resets Q5 output when set	LD0.SRGAPC1.Rs5.stVal
	626			Yes					
	627		0					SR-1 Resets Q6 output when set	LD0.SRGAPC1.Rs6.stVal
	628			Yes					
	629		0					SR-1 Resets Q7 output when set	LD0.SRGAPC1.Rs7.stVal
	630			Yes					
	631		0					SR-1 Resets Q8 output when set	LD0.SRGAPC1.Rs8.stVal
	632			Yes					
113		904:15	0					SR-1 Q1 status	LD0.SRGAPC1.Q1.stVal
114		904:14	0					SR-1 Q2 status	LD0.SRGAPC1.Q2.stVal
115		904:13	0					SR-1 Q3 status	LD0.SRGAPC1.Q3.stVal
116		904:12	0					SR-1 Q4 status	LD0.SRGAPC1.Q4.stVal
117		904:11	0					SR-1 Q5 status	LD0.SRGAPC1.Q5.stVal
118		904:10	0					SR-1 Q6 status	LD0.SRGAPC1.Q6.stVal
119		904:09	0					SR-1 Q7 status	LD0.SRGAPC1.Q7.stVal
120		904:08	0					SR-1 Q8 status	LD0.SRGAPC1.Q8.stVal
737			0					SR-1 Q1 status	LD0.SRGAPC1.Q1.stVal
738				Yes					
739			0					SR-1 Q2 status	LD0.SRGAPC1.Q2.stVal
740				Yes					
741			0					SR-1 Q3 status	LD0.SRGAPC1.Q3.stVal
742				Yes					
743			0					SR-1 Q4 status	LD0.SRGAPC1.Q4.stVal
744				Yes					
745			0					SR-1 Q5 status	LD0.SRGAPC1.Q5.stVal
746				Yes					
747			0					SR-1 Q6 status	LD0.SRGAPC1.Q6.stVal

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
748				Yes					
749			0					SR-1 Q7 status	LD0.SRGAPC1.Q7.stVal
750				Yes					
751			0					SR-1 Q8 status	LD0.SRGAPC1.Q8.stVal
752				Yes					

Table 126: SR-2 : Set reset (8 pcs) instance 2 (SRGAPC2)

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
7176		1711:00	0					SR-2 Q1 status	LD0.SRGAPC2.Q1.stVal
7177		1711:01		Yes					
7178		1711:02	0					SR-2 Q2 status	LD0.SRGAPC2.Q2.stVal
7179		1711:03		Yes					
7180		1711:04	0					SR-2 Q3 status	LD0.SRGAPC2.Q3.stVal
7181		1711:05		Yes					
7182		1711:06	0					SR-2 Q4 status	LD0.SRGAPC2.Q4.stVal
7183		1711:07		Yes					
7184		1711:08	0					SR-2 Q5 status	LD0.SRGAPC2.Q5.stVal
7185		1711:09		Yes					
7186		1711:10	0					SR-2 Q6 status	LD0.SRGAPC2.Q6.stVal
7187		1711:11		Yes					
7188		1711:12	0					SR-2 Q7 status	LD0.SRGAPC2.Q7.stVal
7189		1711:13		Yes					
7190		1711:14	0					SR-2 Q8 status	LD0.SRGAPC2.Q8.stVal
7191		1711:15		Yes					
	7450	1729:00	0					SR-2 Set Q1 output when set	LD0.SRGAPC2.Set1.stVal
	7452	1729:02	0					SR-2 Set Q2 output when set	LD0.SRGAPC2.Set2.stVal
	7454	1729:04	0					SR-2 Set Q3 output when set	LD0.SRGAPC2.Set3.stVal
	7456	1729:06	0					SR-2 Set Q4 output when set	LD0.SRGAPC2.Set4.stVal
	7458	1729:08	0					SR-2 Set Q5 output when set	LD0.SRGAPC2.Set5.stVal
	7460	1729:10	0					SR-2 Set Q6 output when set	LD0.SRGAPC2.Set6.stVal
	7462	1729:12	0					SR-2 Set Q7 output when set	LD0.SRGAPC2.Set7.stVal
	7464	1729:14	0					SR-2 Set Q8 output when set	LD0.SRGAPC2.Set8.stVal
	7466	1730:00	0					SR-2 Resets Q1 output when set	LD0.SRGAPC2.Rs1.stVal
	7468	1730:02	0					SR-2 Resets Q2 output when set	LD0.SRGAPC2.Rs2.stVal

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
	7470	1730:04	0					SR-2 Resets Q3 output when set	LD0.SRGAPC2.Rs3.stVal
	7472	1730:06	0					SR-2 Resets Q4 output when set	LD0.SRGAPC2.Rs4.stVal
	7474	1730:08	0					SR-2 Resets Q5 output when set	LD0.SRGAPC2.Rs5.stVal
	7476	1730:10	0					SR-2 Resets Q6 output when set	LD0.SRGAPC2.Rs6.stVal
	7478	1730:12	0					SR-2 Resets Q7 output when set	LD0.SRGAPC2.Rs7.stVal
	7480	1730:14	0					SR-2 Resets Q8 output when set	LD0.SRGAPC2.Rs8.stVal

Table 127: SR-3 : Set reset (8 pcs) instance 3 (SRGAPC3)

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
7192		1712:00	0					SR-3 Q1 status	LD0.SRGAPC3.Q1.stVal
7193		1712:01		Yes					
7194		1712:02	0					SR-3 Q2 status	LD0.SRGAPC3.Q2.stVal
7195		1712:03		Yes					
7196		1712:04	0					SR-3 Q3 status	LD0.SRGAPC3.Q3.stVal
7197		1712:05		Yes					
7198		1712:06	0					SR-3 Q4 status	LD0.SRGAPC3.Q4.stVal
7199		1712:07		Yes					
7200		1712:08	0					SR-3 Q5 status	LD0.SRGAPC3.Q5.stVal
7201		1712:09		Yes					
7202		1712:10	0					SR-3 Q6 status	LD0.SRGAPC3.Q6.stVal
7203		1712:11		Yes					
7204		1712:12	0					SR-3 Q7 status	LD0.SRGAPC3.Q7.stVal
7205		1712:13		Yes					
7206		1712:14	0					SR-3 Q8 status	LD0.SRGAPC3.Q8.stVal
7207		1712:15		Yes					
	7482	1731:00	0					SR-3 Set Q1 output when set	LD0.SRGAPC3.Set1.stVal
	7484	1731:02	0					SR-3 Set Q2 output when set	LD0.SRGAPC3.Set2.stVal
	7486	1731:04	0					SR-3 Set Q3 output when set	LD0.SRGAPC3.Set3.stVal
	7488	1731:06	0					SR-3 Set Q4 output when set	LD0.SRGAPC3.Set4.stVal
	7490	1731:08	0					SR-3 Set Q5 output when set	LD0.SRGAPC3.Set5.stVal
	7492	1731:10	0					SR-3 Set Q6 output when set	LD0.SRGAPC3.Set6.stVal
	7494	1731:12	0					SR-3 Set Q7 output when set	LD0.SRGAPC3.Set7.stVal

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
	7496	1731:14	0					SR-3 Set Q8 output when set	LD0.SRGAPC3.Set8.stVal
	7498	1732:00	0					SR-3 Resets Q1 output when set	LD0.SRGAPC3.Rs1.stVal
	7500	1732:02	0					SR-3 Resets Q2 output when set	LD0.SRGAPC3.Rs2.stVal
	7502	1732:04	0					SR-3 Resets Q3 output when set	LD0.SRGAPC3.Rs3.stVal
	7504	1732:06	0					SR-3 Resets Q4 output when set	LD0.SRGAPC3.Rs4.stVal
	7506	1732:08	0					SR-3 Resets Q5 output when set	LD0.SRGAPC3.Rs5.stVal
	7508	1732:10	0					SR-3 Resets Q6 output when set	LD0.SRGAPC3.Rs6.stVal
	7510	1732:12	0					SR-3 Resets Q7 output when set	LD0.SRGAPC3.Rs7.stVal
	7512	1732:14	0					SR-3 Resets Q8 output when set	LD0.SRGAPC3.Rs8.stVal

Table 128: SR-4 : Set reset (8 pcs) instance 4 (SRGAPC4)

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
7208		1713:00	0					SR-4 Q1 status	LD0.SRGAPC4.Q1.stVal
7209		1713:01		Yes					
7210		1713:02	0					SR-4 Q2 status	LD0.SRGAPC4.Q2.stVal
7211		1713:03		Yes					
7212		1713:04	0					SR-4 Q3 status	LD0.SRGAPC4.Q3.stVal
7213		1713:05		Yes					
7214		1713:06	0					SR-4 Q4 status	LD0.SRGAPC4.Q4.stVal
7215		1713:07		Yes					
7216		1713:08	0					SR-4 Q5 status	LD0.SRGAPC4.Q5.stVal
7217		1713:09		Yes					
7218		1713:10	0					SR-4 Q6 status	LD0.SRGAPC4.Q6.stVal
7219		1713:11		Yes					
7220		1713:12	0					SR-4 Q7 status	LD0.SRGAPC4.Q7.stVal
7221		1713:13		Yes					
7222		1713:14	0					SR-4 Q8 status	LD0.SRGAPC4.Q8.stVal
7223		1713:15		Yes					
	7514	1733:00	0					SR-4 Set Q1 output when set	LD0.SRGAPC4.Set1.stVal
	7516	1733:02	0					SR-4 Set Q2 output when set	LD0.SRGAPC4.Set2.stVal
	7518	1733:04	0					SR-4 Set Q3 output when set	LD0.SRGAPC4.Set3.stVal
	7520	1733:06	0					SR-4 Set Q4 output when set	LD0.SRGAPC4.Set4.stVal

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
	7522	1733:08	0					SR-4 Set Q5 output when set	LD0.SRGAPC4.Set5.stVal
	7524	1733:10	0					SR-4 Set Q6 output when set	LD0.SRGAPC4.Set6.stVal
	7526	1733:12	0					SR-4 Set Q7 output when set	LD0.SRGAPC4.Set7.stVal
	7528	1733:14	0					SR-4 Set Q8 output when set	LD0.SRGAPC4.Set8.stVal
	7530	1734:00	0					SR-4 Resets Q1 output when set	LD0.SRGAPC4.Rs1.stVal
	7532	1734:02	0					SR-4 Resets Q2 output when set	LD0.SRGAPC4.Rs2.stVal
	7534	1734:04	0					SR-4 Resets Q3 output when set	LD0.SRGAPC4.Rs3.stVal
	7536	1734:06	0					SR-4 Resets Q4 output when set	LD0.SRGAPC4.Rs4.stVal
	7538	1734:08	0					SR-4 Resets Q5 output when set	LD0.SRGAPC4.Rs5.stVal
	7540	1734:10	0					SR-4 Resets Q6 output when set	LD0.SRGAPC4.Rs6.stVal
	7542	1734:12	0					SR-4 Resets Q7 output when set	LD0.SRGAPC4.Rs7.stVal
	7544	1734:14	0					SR-4 Resets Q8 output when set	LD0.SRGAPC4.Rs8.stVal

Table 129: MV-1 : Move (8 pcs) instance 1 (MVGAPC1)

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
7224		1714:00	0					MV-1 Q1 status	LD0.MVGAPC1.Q1.stVal
7225		1714:01		Yes					
7226		1714:02	0					MV-1 Q2 status	LD0.MVGAPC1.Q2.stVal
7227		1714:03		Yes					
7228		1714:04	0					MV-1 Q3 status	LD0.MVGAPC1.Q3.stVal
7229		1714:05		Yes					
7230		1714:06	0					MV-1 Q4 status	LD0.MVGAPC1.Q4.stVal
7231		1714:07		Yes					
7232		1714:08	0					MV-1 Q5 status	LD0.MVGAPC1.Q5.stVal
7233		1714:09		Yes					
7234		1714:10	0					MV-1 Q6 status	LD0.MVGAPC1.Q6.stVal
7235		1714:11		Yes					
7236		1714:12	0					MV-1 Q7 status	LD0.MVGAPC1.Q7.stVal
7237		1714:13		Yes					
7238		1714:14	0					MV-1 Q8 status	LD0.MVGAPC1.Q8.stVal
7239		1714:15		Yes					

Table 130: MV-2 : Move (8 pcs) instance 2 (MVGAPC2)

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
7240		1715:00	0					MV-2 Q1 status	LD0.MVGAPC2.Q1.stVal
7241		1715:01		Yes					
7242		1715:02	0					MV-2 Q2 status	LD0.MVGAPC2.Q2.stVal
7243		1715:03		Yes					
7244		1715:04	0					MV-2 Q3 status	LD0.MVGAPC2.Q3.stVal
7245		1715:05		Yes					
7246		1715:06	0					MV-2 Q4 status	LD0.MVGAPC2.Q4.stVal
7247		1715:07		Yes					
7248		1715:08	0					MV-2 Q5 status	LD0.MVGAPC2.Q5.stVal
7249		1715:09		Yes					
7250		1715:10	0					MV-2 Q6 status	LD0.MVGAPC2.Q6.stVal
7251		1715:11		Yes					
7252		1715:12	0					MV-2 Q7 status	LD0.MVGAPC2.Q7.stVal
7253		1715:13		Yes					
7254		1715:14	0					MV-2 Q8 status	LD0.MVGAPC2.Q8.stVal
7255		1715:15		Yes					

Table 131: MV-3 : Move (8 pcs) instance 3 (MVGAPC3)

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
7256		1716:00	0					MV-3 Q1 status	LD0.MVGAPC3.Q1.stVal
7257		1716:01		Yes					
7258		1716:02	0					MV-3 Q2 status	LD0.MVGAPC3.Q2.stVal
7259		1716:03		Yes					
7260		1716:04	0					MV-3 Q3 status	LD0.MVGAPC3.Q3.stVal
7261		1716:05		Yes					
7262		1716:06	0					MV-3 Q4 status	LD0.MVGAPC3.Q4.stVal
7263		1716:07		Yes					
7264		1716:08	0					MV-3 Q5 status	LD0.MVGAPC3.Q5.stVal
7265		1716:09		Yes					
7266		1716:10	0					MV-3 Q6 status	LD0.MVGAPC3.Q6.stVal
7267		1716:11		Yes					
7268		1716:12	0					MV-3 Q7 status	LD0.MVGAPC3.Q7.stVal
7269		1716:13		Yes					
7270		1716:14	0					MV-3 Q8 status	LD0.MVGAPC3.Q8.stVal
7271		1716:15		Yes					

Table 132: MV-4 : Move (8 pcs) instance 4 (MVGAPC4)

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
7272		1717:00	0					MV-4 Q1 status	LD0.MVGAPC4.Q1.stVal

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
7273		1717:01		Yes					
7274		1717:02	0					MV-4 Q2 status	LD0.MVGAPC4.Q2.stVal
7275		1717:03		Yes					
7276		1717:04	0					MV-4 Q3 status	LD0.MVGAPC4.Q3.stVal
7277		1717:05		Yes					
7278		1717:06	0					MV-4 Q4 status	LD0.MVGAPC4.Q4.stVal
7279		1717:07		Yes					
7280		1717:08	0					MV-4 Q5 status	LD0.MVGAPC4.Q5.stVal
7281		1717:09		Yes					
7282		1717:10	0					MV-4 Q6 status	LD0.MVGAPC4.Q6.stVal
7283		1717:11		Yes					
7284		1717:12	0					MV-4 Q7 status	LD0.MVGAPC4.Q7.stVal
7285		1717:13		Yes					
7286		1717:14	0					MV-4 Q8 status	LD0.MVGAPC4.Q8.stVal
7287		1717:15		Yes					

Table 133: MV-5 : Move (8 pcs) instance 5 (MVGAPC5)

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
7288		1718:00	0					MV-5 Q1 status	LD0.MVGAPC5.Q1.stVal
7289		1718:01		Yes					
7290		1718:02	0					MV-5 Q2 status	LD0.MVGAPC5.Q2.stVal
7291		1718:03		Yes					
7292		1718:04	0					MV-5 Q3 status	LD0.MVGAPC5.Q3.stVal
7293		1718:05		Yes					
7294		1718:06	0					MV-5 Q4 status	LD0.MVGAPC5.Q4.stVal
7295		1718:07		Yes					
7296		1718:08	0					MV-5 Q5 status	LD0.MVGAPC5.Q5.stVal
7297		1718:09		Yes					
7298		1718:10	0					MV-5 Q6 status	LD0.MVGAPC5.Q6.stVal
7299		1718:11		Yes					
7300		1718:12	0					MV-5 Q7 status	LD0.MVGAPC5.Q7.stVal
7301		1718:13		Yes					
7302		1718:14	0					MV-5 Q8 status	LD0.MVGAPC5.Q8.stVal
7303		1718:15		Yes					

Table 134: MV-6 : Move (8 pcs) instance 6 (MVGAPC6)

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
7304		1719:00	0					MV-6 Q1 status	LD0.MVGAPC6.Q1.stVal
7305		1719:01		Yes					
7306		1719:02	0					MV-6 Q2 status	LD0.MVGAPC6.Q2.stVal

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
7307		1719:03		Yes					
7308		1719:04	0					MV-6 Q3 status	LD0.MVGAPC6.Q3.stVal
7309		1719:05		Yes					
7310		1719:06	0					MV-6 Q4 status	LD0.MVGAPC6.Q4.stVal
7311		1719:07		Yes					
7312		1719:08	0					MV-6 Q5 status	LD0.MVGAPC6.Q5.stVal
7313		1719:09		Yes					
7314		1719:10	0					MV-6 Q6 status	LD0.MVGAPC6.Q6.stVal
7315		1719:11		Yes					
7316		1719:12	0					MV-6 Q7 status	LD0.MVGAPC6.Q7.stVal
7317		1719:13		Yes					
7318		1719:14	0					MV-6 Q8 status	LD0.MVGAPC6.Q8.stVal
7319		1719:15		Yes					

Table 135: MV-7 : Move (8 pcs) instance 7 (MVGAPC7)

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
7320		1720:00	0					MV-7 Q1 status	LD0.MVGAPC7.Q1.stVal
7321		1720:01		Yes					
7322		1720:02	0					MV-7 Q2 status	LD0.MVGAPC7.Q2.stVal
7323		1720:03		Yes					
7324		1720:04	0					MV-7 Q3 status	LD0.MVGAPC7.Q3.stVal
7325		1720:05		Yes					
7326		1720:06	0					MV-7 Q4 status	LD0.MVGAPC7.Q4.stVal
7327		1720:07		Yes					
7328		1720:08	0					MV-7 Q5 status	LD0.MVGAPC7.Q5.stVal
7329		1720:09		Yes					
7330		1720:10	0					MV-7 Q6 status	LD0.MVGAPC7.Q6.stVal
7331		1720:11		Yes					
7332		1720:12	0					MV-7 Q7 status	LD0.MVGAPC7.Q7.stVal
7333		1720:13		Yes					
7334		1720:14	0					MV-7 Q8 status	LD0.MVGAPC7.Q8.stVal
7335		1720:15		Yes					

Table 136: MV-8 : Move (8 pcs) instance 8 (MVGAPC8)

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
2		897:14						Breaker is Closing	LD0.MVGAPC8.Q3.stVal
22		898:10	14					TCFA - Trip Coil Failure Alarm Energized	LD0.MVGAPC8.Q1.stVal
89		902:07	14					CLTA - Cold Load Timer Alarm Energized	LD0.MVGAPC8.Q2.stVal
515								Breaker is Closing	LD0.MVGAPC8.Q3.stVal

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
516				Yes					
555			14					TCFA - Trip Coil Failure Alarm Energized	LD0.MVGAPC8.Q1.stVal
556				Yes					
689			2					CLTA - Cold Load Timer Alarm Energized	LD0.MVGAPC8.Q2.stVal
690				Yes					
7342		1721:06	0					MV-8 Q4 status	LD0.MVGAPC8.Q4.stVal
7343		1721:07		Yes					
7344		1721:08	0					MV-8 Q5 status	LD0.MVGAPC8.Q5.stVal
7345		1721:09		Yes					
7346		1721:10	0					MV-8 Q6 status	LD0.MVGAPC8.Q6.stVal
7347		1721:11		Yes					
7348		1721:12	0					MV-8 Q7 status	LD0.MVGAPC8.Q7.stVal
7349		1721:13		Yes					
7350		1721:14	0					MV-8 Q8 status	LD0.MVGAPC8.Q8.stVal
7351		1721:15		Yes					

Table 137: CNTRL-1 : Generic control points instance 1 (SPCGGIO1)

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
137		923:07	0					CNTRL-1 Output 1 status	LD0.SPCGGIO1.SPCSO1.stVal
138		923:06	0					CNTRL-1 Output 2 status	LD0.SPCGGIO1.SPCSO2.stVal
139		923:05	0					CNTRL-1 Output 3 status	LD0.SPCGGIO1.SPCSO3.stVal
140		923:04	0					CNTRL-1 Output 4 status	LD0.SPCGGIO1.SPCSO4.stVal
141		923:03	0					CNTRL-1 Output 5 status	LD0.SPCGGIO1.SPCSO5.stVal
142		923:02	0					CNTRL-1 Output 6 status	LD0.SPCGGIO1.SPCSO6.stVal
785			0					CNTRL-1 Output 1 status	LD0.SPCGGIO1.SPCSO1.stVal
786				Yes					
787			0					CNTRL-1 Output 2 status	LD0.SPCGGIO1.SPCSO2.stVal
788				Yes					
789			0					CNTRL-1 Output 3 status	LD0.SPCGGIO1.SPCSO3.stVal
790				Yes					
791			0					CNTRL-1 Output 4 status	LD0.SPCGGIO1.SPCSO4.stVal
792				Yes					
793			0					CNTRL-1 Output 5 status	LD0.SPCGGIO1.SPCSO5.stVal
794				Yes					
795			0					CNTRL-1 Output 6 status	LD0.SPCGGIO1.SPCSO6.stVal
796				Yes					
7012		1700:12	0					CNTRL-1 Output 7 status	LD0.SPCGGIO1.SPCSO7.stVal
7013		1700:13		Yes					
7014		1700:14	0					CNTRL-1 Output 8 status	LD0.SPCGGIO1.SPCSO8.stVal

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
7015		1700:15		Yes					
7016		1701:00	0					CNTRL-1 Output 9 status	LD0.SPCGGIO1.SPCSO9.stVal
7017		1701:01		Yes					
7018		1701:02	0					CNTRL-1 Output 10 status	LD0.SPCGGIO1.SPCSO10.stVal
7019		1701:03		Yes					
7020		1701:04	0					CNTRL-1 Output 11 status	LD0.SPCGGIO1.SPCSO11.stVal
7021		1701:05		Yes					
7022		1701:06	0					CNTRL-1 Output 12 status	LD0.SPCGGIO1.SPCSO12.stVal
7023		1701:07		Yes					
7024		1701:08	0					CNTRL-1 Output 13 status	LD0.SPCGGIO1.SPCSO13.stVal
7025		1701:09		Yes					
7026		1701:10	0					CNTRL-1 Output 14 status	LD0.SPCGGIO1.SPCSO14.stVal
7027		1701:11		Yes					
7028		1701:12	0					CNTRL-1 Output 15 status	LD0.SPCGGIO1.SPCSO15.stVal
7029		1701:13		Yes					
7030		1701:14	0					CNTRL-1 Output 16 status	LD0.SPCGGIO1.SPCSO16.stVal
7031		1701:15		Yes					

Table 138: CNTRL-2 : Generic control points instance 2 (SPCGGIO2)

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
7032		1702:00	0					CNTRL-2 Output 1 status	LD0.SPCGGIO2.SPCSO1.stVal
7033		1702:01		Yes					
7034		1702:02	0					CNTRL-2 Output 2 status	LD0.SPCGGIO2.SPCSO2.stVal
7035		1702:03		Yes					
7036		1702:04	0					CNTRL-2 Output 3 status	LD0.SPCGGIO2.SPCSO3.stVal
7037		1702:05		Yes					
7038		1702:06	0					CNTRL-2 Output 4 status	LD0.SPCGGIO2.SPCSO4.stVal
7039		1702:07		Yes					
7040		1702:08	0					CNTRL-2 Output 5 status	LD0.SPCGGIO2.SPCSO5.stVal
7041		1702:09		Yes					
7042		1702:10	0					CNTRL-2 Output 6 status	LD0.SPCGGIO2.SPCSO6.stVal
7043		1702:11		Yes					
7044		1702:12	0					CNTRL-2 Output 7 status	LD0.SPCGGIO2.SPCSO7.stVal
7045		1702:13		Yes					
7046		1702:14	0					CNTRL-2 Output 8 status	LD0.SPCGGIO2.SPCSO8.stVal
7047		1702:15		Yes					
7048		1703:00	0					CNTRL-2 Output 9 status	LD0.SPCGGIO2.SPCSO9.stVal
7049		1703:01		Yes					
7050		1703:02	0					CNTRL-2 Output 10 status	LD0.SPCGGIO2.SPCSO10.stVal
7051		1703:03		Yes					

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
7052		1703:04	0					CNTRL-2 Output 11 status	LD0.SPCGGIO2.SPCSO11.stVal
7053		1703:05		Yes					
7054		1703:06	0					CNTRL-2 Output 12 status	LD0.SPCGGIO2.SPCSO12.stVal
7055		1703:07		Yes					
7056		1703:08	0					CNTRL-2 Output 13 status	LD0.SPCGGIO2.SPCSO13.stVal
7057		1703:09		Yes					
7058		1703:10	0					CNTRL-2 Output 14 status	LD0.SPCGGIO2.SPCSO14.stVal
7059		1703:11		Yes					
7060		1703:12	0					CNTRL-2 Output 15 status	LD0.SPCGGIO2.SPCSO15.stVal
7061		1703:13		Yes					
7062		1703:14	0					CNTRL-2 Output 16 status	LD0.SPCGGIO2.SPCSO16.stVal
7063		1703:15		Yes					

Table 139: CNTRL-3 : Generic control points instance 3 (SPCGGIO3)

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
7064		1704:00	0					CNTRL-3 Output 1 status	LD0.SPCGGIO3.SPCSO1.stVal
7065		1704:01		Yes					
7066		1704:02	0					CNTRL-3 Output 2 status	LD0.SPCGGIO3.SPCSO2.stVal
7067		1704:03		Yes					
7068		1704:04	0					CNTRL-3 Output 3 status	LD0.SPCGGIO3.SPCSO3.stVal
7069		1704:05		Yes					
7070		1704:06	0					CNTRL-3 Output 4 status	LD0.SPCGGIO3.SPCSO4.stVal
7071		1704:07		Yes					
7072		1704:08	0					CNTRL-3 Output 5 status	LD0.SPCGGIO3.SPCSO5.stVal
7073		1704:09		Yes					
7074		1704:10	0					CNTRL-3 Output 6 status	LD0.SPCGGIO3.SPCSO6.stVal
7075		1704:11		Yes					
7076		1704:12	0					CNTRL-3 Output 7 status	LD0.SPCGGIO3.SPCSO7.stVal
7077		1704:13		Yes					
7078		1704:14	0					CNTRL-3 Output 8 status	LD0.SPCGGIO3.SPCSO8.stVal
7079		1704:15		Yes					
7080		1705:00	0					CNTRL-3 Output 9 status	LD0.SPCGGIO3.SPCSO9.stVal
7081		1705:01		Yes					
7082		1705:02	0					CNTRL-3 Output 10 status	LD0.SPCGGIO3.SPCSO10.stVal
7083		1705:03		Yes					
7084		1705:04	0					CNTRL-3 Output 11 status	LD0.SPCGGIO3.SPCSO11.stVal
7085		1705:05		Yes					
7086		1705:06	0					CNTRL-3 Output 12 status	LD0.SPCGGIO3.SPCSO12.stVal
7087		1705:07		Yes					
7088		1705:08	0					CNTRL-3 Output 13 status	LD0.SPCGGIO3.SPCSO13.stVal

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
7089		1705:09		Yes					
7090		1705:10	0					CNTRL-3 Output 14 status	LD0.SPCGGIO3.SPCSO14.stVal
7091		1705:11		Yes					
7092		1705:12	0					CNTRL-3 Output 15 status	LD0.SPCGGIO3.SPCSO15.stVal
7093		1705:13		Yes					
7094		1705:14	0					CNTRL-3 Output 16 status	LD0.SPCGGIO3.SPCSO16.stVal
7095		1705:15		Yes					

Table 140: RCNTRL-1 : Remote Generic control points instance 1 (SPCRGGIO1)

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
7096		1706:00	0					RCNTRL-1 Output 1 status	LD0.SPCRGGIO1.SPCSO1.stVal
7097		1706:01		Yes					
7098		1706:02	0					RCNTRL-1 Output 2 status	LD0.SPCRGGIO1.SPCSO2.stVal
7099		1706:03		Yes					
7100		1706:04	0					RCNTRL-1 Output 3 status	LD0.SPCRGGIO1.SPCSO3.stVal
7101		1706:05		Yes					
7102		1706:06	0					RCNTRL-1 Output 4 status	LD0.SPCRGGIO1.SPCSO4.stVal
7103		1706:07		Yes					
7104		1706:08	0					RCNTRL-1 Output 5 status	LD0.SPCRGGIO1.SPCSO5.stVal
7105		1706:09		Yes					
7106		1706:10	0					RCNTRL-1 Output 6 status	LD0.SPCRGGIO1.SPCSO6.stVal
7107		1706:11		Yes					
7108		1706:12	0					RCNTRL-1 Output 7 status	LD0.SPCRGGIO1.SPCSO7.stVal
7109		1706:13		Yes					
7110		1706:14	0					RCNTRL-1 Output 8 status	LD0.SPCRGGIO1.SPCSO8.stVal
7111		1706:15		Yes					
7112		1707:00	0					RCNTRL-1 Output 9 status	LD0.SPCRGGIO1.SPCSO9.stVal
7113		1707:01		Yes					
7114		1707:02	0					RCNTRL-1 Output 10 status	LD0.SPCRGGIO1.SPCSO10.stVal
7115		1707:03		Yes					
7116		1707:04	0					RCNTRL-1 Output 11 status	LD0.SPCRGGIO1.SPCSO11.stVal
7117		1707:05		Yes					
7118		1707:06	0					RCNTRL-1 Output 12 status	LD0.SPCRGGIO1.SPCSO12.stVal
7119		1707:07		Yes					
7120		1707:08	0					RCNTRL-1 Output 13 status	LD0.SPCRGGIO1.SPCSO13.stVal
7121		1707:09		Yes					
7122		1707:10	0					RCNTRL-1 Output 14 status	LD0.SPCRGGIO1.SPCSO14.stVal

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
7123		1707:11		Yes					
7124		1707:12	0					RCNTRL-1 Output 15 status	LD0.SPCRGGIO1.SPCSO15.stVal
7125		1707:13		Yes					
7126		1707:14	0					RCNTRL-1 Output 16 status	LD0.SPCRGGIO1.SPCSO16.stVal
7127		1707:15		Yes					

Table 141: LCNTRL-1 : Local Generic control points instance 1 (SPCLGGIO1)

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
7128		1708:00	0					LCNTRL-1 Output 1 status	LD0.SPCLGGIO1.SPCSO1.stVal
7129		1708:01		Yes					
7130		1708:02	0					LCNTRL-1 Output 2 status	LD0.SPCLGGIO1.SPCSO2.stVal
7131		1708:03		Yes					
7132		1708:04	0					LCNTRL-1 Output 3 status	LD0.SPCLGGIO1.SPCSO3.stVal
7133		1708:05		Yes					
7134		1708:06	0					LCNTRL-1 Output 4 status	LD0.SPCLGGIO1.SPCSO4.stVal
7135		1708:07		Yes					
7136		1708:08	0					LCNTRL-1 Output 5 status	LD0.SPCLGGIO1.SPCSO5.stVal
7137		1708:09		Yes					
7138		1708:10	0					LCNTRL-1 Output 6 status	LD0.SPCLGGIO1.SPCSO6.stVal
7139		1708:11		Yes					
7140		1708:12	0					LCNTRL-1 Output 7 status	LD0.SPCLGGIO1.SPCSO7.stVal
7141		1708:13		Yes					
7142		1708:14	0					LCNTRL-1 Output 8 status	LD0.SPCLGGIO1.SPCSO8.stVal
7143		1708:15		Yes					
7144		1709:00	0					LCNTRL-1 Output 9 status	LD0.SPCLGGIO1.SPCSO9.stVal
7145		1709:01		Yes					
7146		1709:02	0					LCNTRL-1 Output 10 status	LD0.SPCLGGIO1.SPCSO10.stVal
7147		1709:03		Yes					
7148		1709:04	0					LCNTRL-1 Output 11 status	LD0.SPCLGGIO1.SPCSO11.stVal
7149		1709:05		Yes					
7150		1709:06	0					LCNTRL-1 Output 12 status	LD0.SPCLGGIO1.SPCSO12.stVal
7151		1709:07		Yes					
7152		1709:08	0					LCNTRL-1 Output 13 status	LD0.SPCLGGIO1.SPCSO13.stVal
7153		1709:09		Yes					
7154		1709:10	0					LCNTRL-1 Output 14 status	LD0.SPCLGGIO1.SPCSO14.stVal
7155		1709:11		Yes					

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
7156		1709:12	0					LCNTRL-1 Output 15 status	LD0.SPCLGGIO1.SPCSO15.stVal
7157		1709:13		Yes					
7158		1709:14	0					LCNTRL-1 Output 16 status	LD0.SPCLGGIO1.SPCSO16.stVal
7159		1709:15		Yes					

Table 142: FKEY : Programmable buttons(16 buttons) instance 1 (FKEYGGIO1)

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
7352		1722:00	0					FKEY LED 1	LD0.FKEYGGIO1.SPCSO1.stVal
7353		1722:01		Yes					
7354		1722:02	0					FKEY LED 2	LD0.FKEYGGIO1.SPCSO2.stVal
7355		1722:03		Yes					
7356		1722:04	0					FKEY LED 3	LD0.FKEYGGIO1.SPCSO3.stVal
7357		1722:05		Yes					
7358		1722:06	0					FKEY LED 4	LD0.FKEYGGIO1.SPCSO4.stVal
7359		1722:07		Yes					
7360		1722:08	0					FKEY LED 5	LD0.FKEYGGIO1.SPCSO5.stVal
7361		1722:09		Yes					
7362		1722:10	0					FKEY LED 6	LD0.FKEYGGIO1.SPCSO6.stVal
7363		1722:11		Yes					
7364		1722:12	0					FKEY LED 7	LD0.FKEYGGIO1.SPCSO7.stVal
7365		1722:13		Yes					
7366		1722:14	0					FKEY LED 8	LD0.FKEYGGIO1.SPCSO8.stVal
7367		1722:15		Yes					
7368		1723:00	0					FKEY LED 9	LD0.FKEYGGIO1.SPCSO9.stVal
7369		1723:01		Yes					
7370		1723:02	0					FKEY LED 10	LD0.FKEYGGIO1.SPCSO10.stVal
7371		1723:03		Yes					
7372		1723:04	0					FKEY LED 11	LD0.FKEYGGIO1.SPCSO11.stVal
7373		1723:05		Yes					
7374		1723:06	0					FKEY LED 12	LD0.FKEYGGIO1.SPCSO12.stVal
7375		1723:07		Yes					
7376		1723:08	0					FKEY LED 13	LD0.FKEYGGIO1.SPCSO13.stVal
7377		1723:09		Yes					
7378		1723:10	0					FKEY LED 14	LD0.FKEYGGIO1.SPCSO14.stVal
7379		1723:11		Yes					
7380		1723:12	0					FKEY LED 15	LD0.FKEYGGIO1.SPCSO15.stVal
7381		1723:13		Yes					
7382		1723:14	0					FKEY LED 16	LD0.FKEYGGIO1.SPCSO16.stVal
7383		1723:15		Yes					

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
	6074	3004:10	0					FKEY KEY 1	LD0.FKEYGGIO1.Ind1.stVal
	6075	3004:11		Yes					
	6076	3004:12	0					FKEY KEY 2	LD0.FKEYGGIO1.Ind2.stVal
	6077	3004:13		Yes					
	6078	3004:14	0					FKEY KEY 3	LD0.FKEYGGIO1.Ind3.stVal
	6079	3004:15		Yes					
	6080	3005:00	0					FKEY KEY 4	LD0.FKEYGGIO1.Ind4.stVal
	6081	3005:01		Yes					
	6082	3005:02	0					FKEY KEY 5	LD0.FKEYGGIO1.Ind5.stVal
	6083	3005:03		Yes					
	6084	3005:04	0					FKEY KEY 6	LD0.FKEYGGIO1.Ind6.stVal
	6085	3005:05		Yes					
	6086	3005:06	0					FKEY KEY 7	LD0.FKEYGGIO1.Ind7.stVal
	6087	3005:07		Yes					
	6088	3005:08	0					FKEY KEY 8	LD0.FKEYGGIO1.Ind8.stVal
	6089	3005:09		Yes					
	6090	3005:10	0					FKEY KEY 9	LD0.FKEYGGIO1.Ind9.stVal
	6091	3005:11		Yes					
	6092	3005:12	0					FKEY KEY 10	LD0.FKEYGGIO1.Ind10.stVal
	6093	3005:13		Yes					
	6094	3005:14	0					FKEY KEY 11	LD0.FKEYGGIO1.Ind11.stVal
	6095	3005:15		Yes					
	6096	3006:00	0					FKEY KEY 12	LD0.FKEYGGIO1.Ind12.stVal
	6097	3006:01		Yes					
	6098	3006:02	0					FKEY KEY 13	LD0.FKEYGGIO1.Ind13.stVal
	6099	3006:03		Yes					
	6100	3006:04	0					FKEY KEY 14	LD0.FKEYGGIO1.Ind14.stVal
	6101	3006:05		Yes					
	6102	3006:06	0					FKEY KEY 15	LD0.FKEYGGIO1.Ind15.stVal
	6103	3006:07		Yes					
	6104	3006:08	0					FKEY KEY 16	LD0.FKEYGGIO1.Ind16.stVal
	6105	3006:09		Yes					

Table 143: CTR-1 : Generic Up-Down Counters instance 1 (UDFCNT1)

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
7438		1728:00	0					CTR-1 Status of the down counting	LD0.UDFCNT1.DnCntSt.stVal
7439		1728:01		Yes					
7440		1728:02	0					CTR-1 Status of the up counting	LD0.UDFCNT1.UpCntSt.stVal
7441		1728:03		Yes					

Table 144: CTR-2 : Generic Up-Down Counters instance 2 (UDFCNT2)

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
7442		1728:04	0					CTR-2 Status of the down counting	LD0.UDFCNT2.DnCntSt.stVal
7443		1728:05		Yes					
7444		1728:06	0					CTR-2 Status of the up counting	LD0.UDFCNT2.UpCntSt.stVal
7445		1728:07		Yes					

Table 145: CTR-3 : Generic Up-Down Counters instance 3 (UDFCNT3)

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
7446		1728:08	0					CTR-3 Status of the down counting	LD0.UDFCNT3.DnCntSt.stVal
7447		1728:09		Yes					
7448		1728:10	0					CTR-3 Status of the up counting	LD0.UDFCNT3.UpCntSt.stVal
7449		1728:11		Yes					

Table 146: SHFT-1 : Shift register instance 1 (SHFTGAPC1)

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
7384		1724:00	0					SHFT-1 Status of output 1	LD0.SHFTGAPC1.SPCSO1.stVal
7385		1724:01		Yes					
7386		1724:02	0					SHFT-1 Status of output 2	LD0.SHFTGAPC1.SPCSO2.stVal
7387		1724:03		Yes					
7388		1724:04	0					SHFT-1 Status of output 3	LD0.SHFTGAPC1.SPCSO3.stVal
7389		1724:05		Yes					
7390		1724:06	0					SHFT-1 Status of output 4	LD0.SHFTGAPC1.SPCSO4.stVal
7391		1724:07		Yes					
7392		1724:08	0					SHFT-1 Status of output 5	LD0.SHFTGAPC1.SPCSO5.stVal
7393		1724:09		Yes					
7394		1724:10	0					SHFT-1 Status of output 6	LD0.SHFTGAPC1.SPCSO6.stVal
7395		1724:11		Yes					
7396		1724:12	0					SHFT-1 Status of output 7	LD0.SHFTGAPC1.SPCSO7.stVal
7397		1724:13		Yes					
7398		1724:14	0					SHFT-1 Status of output 8	LD0.SHFTGAPC1.SPCSO8.stVal
7399		1724:15		Yes					
7432		1727:00	0					SHFT-1 Hold present output	LD0.SHFTGAPC1.HldOut.stVal
7433		1727:01		Yes					
		5136	12		s16	1		SHFT-1 Present output position	LD0.SHFTGAPC1.ActOutPos.stVal

Table 147: SHFT-2 : Shift register instance 2 (SHFTGAPC2)

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
7400		1725:00	0					SHFT-2 Status of output 1	LD0.SHFTGAPC2.SPCSO1.stVal
7401		1725:01		Yes					
7402		1725:02	0					SHFT-2 Status of output 2	LD0.SHFTGAPC2.SPCSO2.stVal
7403		1725:03		Yes					
7404		1725:04	0					SHFT-2 Status of output 3	LD0.SHFTGAPC2.SPCSO3.stVal
7405		1725:05		Yes					
7406		1725:06	0					SHFT-2 Status of output 4	LD0.SHFTGAPC2.SPCSO4.stVal
7407		1725:07		Yes					
7408		1725:08	0					SHFT-2 Status of output 5	LD0.SHFTGAPC2.SPCSO5.stVal
7409		1725:09		Yes					
7410		1725:10	0					SHFT-2 Status of output 6	LD0.SHFTGAPC2.SPCSO6.stVal
7411		1725:11		Yes					
7412		1725:12	0					SHFT-2 Status of output 7	LD0.SHFTGAPC2.SPCSO7.stVal
7413		1725:13		Yes					
7414		1725:14	0					SHFT-2 Status of output 8	LD0.SHFTGAPC2.SPCSO8.stVal
7415		1725:15		Yes					
7434		1727:02	0					SHFT-2 Hold present output	LD0.SHFTGAPC2.HldOut.stVal
7435		1727:03		Yes					
		5137	12		s16	1		SHFT-2 Present output position	LD0.SHFTGAPC2.ActOutPos.stVal

Table 148: SHFT-3 : Shift register instance 2 (SHFTGAPC3)

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
7416		1726:00	0					SHFT-3 Status of output 1	LD0.SHFTGAPC3.SPCSO1.stVal
7417		1726:01		Yes					
7418		1726:02	0					SHFT-3 Status of output 2	LD0.SHFTGAPC3.SPCSO2.stVal
7419		1726:03		Yes					
7420		1726:04	0					SHFT-3 Status of output 3	LD0.SHFTGAPC3.SPCSO3.stVal
7421		1726:05		Yes					
7422		1726:06	0					SHFT-3 Status of output 4	LD0.SHFTGAPC3.SPCSO4.stVal
7423		1726:07		Yes					
7424		1726:08	0					SHFT-3 Status of output 5	LD0.SHFTGAPC3.SPCSO5.stVal
7425		1726:09		Yes					
7426		1726:10	0					SHFT-3 Status of output 6	LD0.SHFTGAPC3.SPCSO6.stVal
7427		1726:11		Yes					
7428		1726:12	0					SHFT-3 Status of output 7	LD0.SHFTGAPC3.SPCSO7.stVal
7429		1726:13		Yes					
7430		1726:14	0					SHFT-3 Status of output 8	LD0.SHFTGAPC3.SPCSO8.stVal
7431		1726:15		Yes					

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
7436		1727:04	0					SHFT-3 Hold present output	LD0.SHFTGAPC3.HldOut.stVal
7437		1727:05		Yes					
		5138	12		s16	1		SHFT-3 Present output position	LD0.SHFTGAPC3.ActOutPos.stVal

Table 149: DFR : Disturbance recorder (RDRE1)

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
	17	906:15	0					DFR Disturbance Recording Triggered	DR.RDRE1.RcdTrg.stVal
	545		0					DFR Disturbance Recording Triggered	DR.RDRE1.RcdTrg.stVal
	546			Yes					
5458		2502:00	0					Disturbance recorder Recording made	DR.RDRE1.RcdMade.stVal
5459		2502:01		Yes					
		184	4		u16	1		Disturbance recorder Number of recordings in the memory	DR.RDRE1.FltNum.stVal
		194	0		u16	1		Disturbance recorder How much recording memory is currently used	DR.RDRE1.MemUsed.stVal

Table 150: FLO : Fault location (DRFLO1)

Coil Addr (0x)	Input Addr (1x)	Register (:Bit) Addr (4x)	Dc	MCD	Type	Scale	Offset	Description	IEC61850 Data Attribute Name
2932		2201:08	2					DRFLO1 Relay Trip	LD0.DRFLO1.Tr.general
2933		2201:09		Yes					
		339	11		u16	1		DRFLO1 Fault Distance	LD0.DRFLO1.FltDisKm.mag.f
		3872	12		s16	1		DRFLO1 Fault Loop	LD0.DRFLO1.FltLoop.stVal
		3873	12		u32	100		DRFLO1 Loop Reactance	LD0.DRFLO1.FltLoopX.mag.f
		3874							
		3875	12		u32	100		DRFLO1 FaultResistance	LD0.DRFLO1.FltZ.mag.f
		3876							

Table 151: Control Structures

Control Structure	Control Register Addr	Control bit number	Description	IEC61850 Data Attribute Name
1	41154		Control Structure 1 Execute Register	
	41155		Control Structure 1 Password 1	
	41156		Control Structure 1 Password 2	
	41157		Spare	
	41158		Change Initiate Input Mask	
		0	Initiate CB Trip	

Control Structure	Control Register Addr	Control bit number	Description	IEC61850 Data Attribute Name
1 (cont.)		1	Initiate CB Close (Based on State of 43a)	
		2	Reserved	
		3	Reserved	
		4	Reserved	
		5	Initiate CB Close (Independent of 43a)	
		6	Reserved	
		7	Reserved	
		8	Clear alarm LEDs	
		9	Clear indication LEDs and texts	
		10	Reset metering minimum and maximum recorded data	
		11	Reserved	
		12	P E Reset of accumulated energy reading	
		13	Reserved	
		14	Reserved	
		15	Reserved	
	41159		Confirm Initiate Input Mask	
		0	Initiate CB Trip	CTRL.CBCSWI1.Pos.Oper.ctlVal
		1	Initiate CB Close (Based on State of 43a)	
		2	Reserved	
		3	Reserved	
		4	Reserved	
		5	Initiate CB Close (Independent of 43a)	CTRL.CBCSWI1.Pos.Oper.ctlVal
		6	Reserved	
		7	Reserved	
		8	Clear alarm LEDs	LD0.LLN0.LEDRs1.Oper.ctlVal
		9	Clear indication LEDs and texts	LD0.LLN0.LEDRs2.Oper.ctlVal
		10	Reset metering minimum and maximum recorded data	LD0.LLN0.MtrRecRs.Oper.ctlVal
		11	Reserved	
		12	P E Reset of accumulated energy reading	LD0.PEMMTR1.SupDmdRs.Oper.ctlVal
		13	Reserved	
		14	Reserved	
		15	Reserved	
2	41160		Control Structure 2 Execute Register	
	41161		Control Structure 2 Password 1	
	41162		Control Structure 2 Password 2	
	41163		Spare	
	41164		Reserved	
	41165		Reserved	
	41166		Reserved	

Control Structure	Control Register Addr	Control bit number	Description	IEC61850 Data Attribute Name
3	41167		Control Structure 3 Execute Register	
	41168		Control Structure 3 Password 1	
	41169		Control Structure 3 Password 2	
	41170		Spare	
	41171		Force Physical Output Change Mask	
		0	Trip Contact operate test (X100-PSM Connectors 29c-30nc-30no)	1
			Trip Contact operate test (X100-PSM Connectors 29c-30nc-30no)	2
		1	Reserved	
			Reserved	
		2	Output 1 Contact operate test (X110-BIO Connectors 27c-28no-28nc)	1
			Output 1 Contact operate test (X100-PSM Connectors 27-28)	2
		3	Output 2 Contact operate test (X110-BIO Connectors 25c-26no-26nc)	1
			Output 2 Contact operate test (X100-PSM Connectors 25-26)	2
		4	Output 3 Contact operate test (X100-PSM Connectors 23-24)	1
			Output 3 Contact operate test (X100-PSM Connectors 23-24)	2
		5	Output 4 Contact operate test (X100-PSM Connectors 21-22)	1
			Output 4 Contact operate test (X110-BIO-H Connectors 21-22)	2
		6	Output 5 Contact operate test (X100-PSM Connectors 19-20)	1
			Output 5 Contact operate test (X110-BIO-H Connectors 19-20)	2
		7	Output 6 Contact operate test (X100-PSM Connectors 17-18)	1
			Output 6 Contact operate test (X110-BIO-H Connectors 17-18)	2
		8	Reserved	
		9	Reserved	
		10	Reserved	
		11	Reserved	
		12	Reserved	
		13	Reserved	
		14	Reserved	
		15	Reserved	
	41172		Force Physical Output Normal state Mask	
		0	Trip Contact operate test (X100-PSM Connectors 29c-30nc-30no)	1

Control Structure	Control Register Addr	Control bit number	Description	IEC61850 Data Attribute Name
3 (cont.)			Trip Contact operate test (X100-PSM Connectors 29c-30nc-30no)	2
		1	Reserved	
			Reserved	
		2	Output 1 Contact operate test (X110-BIO Connectors 27c-28no-28nc)	1
			Output 1 Contact operate test (X100-PSM Connectors 27-28)	2
		3	Output 2 Contact operate test (X110-BIO Connectors 25c-26no-26nc)	1
			Output 2 Contact operate test (X100-PSM Connectors 25-26)	2
		4	Output 3 Contact operate test (X100-PSM Connectors 23-24)	1
			Output 3 Contact operate test (X100-PSM Connectors 23-24)	2
		5	Output 4 Contact operate test (X100-PSM Connectors 21-22)	1
			Output 4 Contact operate test (X110-BIO-H Connectors 21-22)	2
		6	Output 5 Contact operate test (X100-PSM Connectors 19-20)	1
			Output 5 Contact operate test (X110-BIO-H Connectors 19-20)	2
		7	Output 6 Contact operate test (X100-PSM Connectors 17-18)	1
			Output 6 Contact operate test (X110-BIO-H Connectors 17-18)	2
		8	Reserved	
		9	Reserved	
		10	Reserved	
		11	Reserved	
		12	Reserved	
		13	Reserved	
		14	Reserved	
		15	Reserved	
	41173		Physical Input Forcing State Mask	
		0	Trip Contact operate test (X100-PSM Connectors 29c-30nc-30no)	LD0.XUGGIO100.SPCSO1.Oper.ctlVal [1]
			Trip Contact operate test (X100-PSM Connectors 29c-30nc-30no)	LD0.XBUGGIO100.SPCSO4.Oper.ctlVal [2]
		1	Reserved	
			Reserved	
		2	Output 1 Contact operate test (X110-BIO Connectors 27c-28no-28nc)	LD0.XUGGIO110.SPCSO1.Oper.ctlVal [1]
			Output 1 Contact operate test (X100-PSM Connectors 27-28)	LD0.XBUGGIO100.SPCSO1.Oper.ctlVal [2]

Control Structure	Control Register Addr	Control bit number	Description	IEC61850 Data Attribute Name
3 (cont.)		3	Output 2 Contact operate test (X110-BIO Connectors 25c-26no-26nc)	LD0.XUGGIO110.SPCSO2.Oper.ctlVal [1]
			Output 2 Contact operate test (X100-PSM Connectors 25-26)	LD0.XBUGGIO100.SPCSO2.Oper.ctlVal [2]
		4	Output 3 Contact operate test (X100-PSM Connectors 23-24)	LD0.XUGGIO100.SPCSO3.Oper.ctlVal [1]
			Output 3 Contact operate test (X100-PSM Connectors 23-24)	LD0.XBUGGIO100.SPCSO3.Oper.ctlVal [2]
		5	Output 4 Contact operate test (X100-PSM Connectors 21-22)	LD0.XUGGIO100.SPCSO4.Oper.ctlVal [1]
			Output 4 Contact operate test (X110-BIO-H Connectors 21-22)	LD0.XBUGGIO110.SPCSO4.Oper.ctlVal [2]
		6	Output 5 Contact operate test (X100-PSM Connectors 19-20)	LD0.XUGGIO100.SPCSO5.Oper.ctlVal [1]
			Output 5 Contact operate test (X110-BIO-H Connectors 19-20)	LD0.XBUGGIO110.SPCSO5.Oper.ctlVal [2]
		7	Output 6 Contact operate test (X100-PSM Connectors 17-18)	LD0.XUGGIO100.SPCSO6.Oper.ctlVal [1]
			Output 6 Contact operate test (X110-BIO-H Connectors 17-18)	LD0.XBUGGIO110.SPCSO6.Oper.ctlVal [2]
		8	Reserved	
		9	Reserved	
		10	Reserved	
		11	Reserved	
		12	Reserved	
		13	Reserved	
		14	Reserved	
		15	Reserved	

Notes: Only single control points can be controlled at time, in any command. even though multiple register control command is accepted, only one point is activated at time on command.

Control points with [1] applicable for order code: *WFA**AA********1E.

Control points with [2] applicable for order code: *WFA**A1********1E.

This operation can be done in Test Mode and should only be used for commissioning purposes. Please notice that in Test Mode protective functions are disabled.

4	41174		Control Structure 4 Execute Register	
	41175		Control Structure 4 Password 1	
	41176		Control Structure 4 Password 2	
	41177		Spare	
	41178		Reserved	
	41179		Reserved	
	41180		Reserved	
	41181		Reserved	
	41182		Reserved	
	41183		Reserved	

Control Structure	Control Register Addr	Control bit number	Description	IEC61850 Data Attribute Name
5	41184		Control Structure 5 Execute Register	
	41185		Control Structure 5 Password 1	
	41186		Control Structure 5 Password 2	
	41187		Spare	
	41188		Reserved	
	41189		Change Mask Register 2	
		0	Reserved	
		1	Reserved	
		2	Reserved	
		3	RCNTRL-1 Output 9	
		4	RCNTRL-1 Output 8	
		5	RCNTRL-1 Output 7	
		6	RCNTRL-1 Output 6	
		7	RCNTRL-1 Output 5	
		8	RCNTRL-1 Output 4	
		9	RCNTRL-1 Output 3	
		10	RCNTRL-1 Output 2	
		11	RCNTRL-1 Output 1	
		12	Reserved	
		13	Reserved	
		14	Reserved	
		15	Reserved	
	41190		Reserved	
	41191		Reserved	
	41192		Reserved	
	41193		Set/Reset Confirm Mask Register 2	
		0	Reserved	
		1	Reserved	
		2	Reserved	
		3	RCNTRL-1 Output 9	LD0.SPCRGGIO1.SPCSO9.Oper.ctlVal
		4	RCNTRL-1 Output 8	LD0.SPCRGGIO1.SPCSO8.Oper.ctlVal
		5	RCNTRL-1 Output 7	LD0.SPCRGGIO1.SPCSO7.Oper.ctlVal
		6	RCNTRL-1 Output 6	LD0.SPCRGGIO1.SPCSO6.Oper.ctlVal
		7	RCNTRL-1 Output 5	LD0.SPCRGGIO1.SPCSO5.Oper.ctlVal
		8	RCNTRL-1 Output 4	LD0.SPCRGGIO1.SPCSO4.Oper.ctlVal
		9	RCNTRL-1 Output 3	LD0.SPCRGGIO1.SPCSO3.Oper.ctlVal
		10	RCNTRL-1 Output 2	LD0.SPCRGGIO1.SPCSO2.Oper.ctlVal
		11	RCNTRL-1 Output 1	LD0.SPCRGGIO1.SPCSO1.Oper.ctlVal
		12	Reserved	
		13	Reserved	

Control Structure	Control Register Addr	Control bit number	Description	IEC61850 Data Attribute Name
5 (cont.)		14	Reserved	
		15	Reserved	
	41194		Reserved	
	41195		Reserved	
6	41196		Control Structure 6 Execute Register	
	41197		Control Structure 6 Password 1	
	41198		Control Structure 6 Password 2	
	41199		Spare	
	41200		Physical Output Change Mask	
		0	Trip Contact operate test (X100-PSM Connectors 29c-30nc-30no)	1
			Trip Contact operate test (X100-PSM Connectors 29c-30nc-30no)	2
		1	Reserved	
			Reserved	
		2	Output 1 Contact operate test (X110-BIO Connectors 27c-28no-28nc)	1
			Output 1 Contact operate test (X100-PSM Connectors 27-28)	2
		3	Output 2 Contact operate test (X110-BIO Connectors 25c-26no-26nc)	1
			Output 2 Contact operate test (X100-PSM Connectors 25-26)	2
		4	Output 3 Contact operate test (X100-PSMConnectors 23-24)	1
			Output 3 Contact operate test (X100-PSM Connectors 23-24)	2
		5	Output 4 Contact operate test (X100-PSM Connectors 21-22)	1
			Output 4 Contact operate test (X110-BIO-H Connectors 21-22)	2
		6	Output 5 Contact operate test (X100-PSM Connectors 19-20)	1
			Output 5 Contact operate test (X110-BIO-H Connectors 19-20)	2
		7	Output 6 Contact operate test (X100-PSM Connectors 17-18)	1
			Output 6 Contact operate test (X110-BIO-H Connectors 17-18)	2
		8	Reserved	
		9	Reserved	
		10	Reserved	
		11	Reserved	
		12	Reserved	
		13	Reserved	
		14	Reserved	

Control Structure	Control Register Addr	Control bit number	Description	IEC61850 Data Attribute Name
6 (cont.)		15	Reserved	
	41201		Physical Output Confirm Mask	
		0	Trip Contact operate test (X100-PSM Connectors 29c-30nc-30no)	LD0.XUGGIO100.SPCSO1.Oper.ctlVal [1]
			Trip Contact operate test (X100-PSM Connectors 29c-30nc-30no)	LD0.XBUGGIO100.SPCSO4.Oper.ctlVal [2]
		1	Reserved	
			Reserved	
		2	Output 1 Contact operate test (X110-BIO Connectors 27c-28no-28nc)	LD0.XUGGIO110.SPCSO1.Oper.ctlVal [1]
			Output 1 Contact operate test (X100-PSM Connectors 27-28)	LD0.XBUGGIO100.SPCSO1.Oper.ctlVal [2]
		3	Output 2 Contact operate test (X110-BIO Connectors 25c-26no-26nc)	LD0.XUGGIO110.SPCSO2.Oper.ctlVal [1]
			Output 2 Contact operate test (X100-PSM Connectors 25-26)	LD0.XBUGGIO100.SPCSO2.Oper.ctlVal [2]
		4	Output 3 Contact operate test (X100-PSMConnectors 23-24)	LD0.XUGGIO100.SPCSO3.Oper.ctlVal [1]
			Output 3 Contact operate test (X100-PSM Connectors 23-24)	LD0.XBUGGIO100.SPCSO3.Oper.ctlVal [2]
		5	Output 4 Contact operate test (X100-PSM Connectors 21-22)	LD0.XUGGIO100.SPCSO4.Oper.ctlVal [1]
			Output 4 Contact operate test (X110-BIO-H Connectors 21-22)	LD0.XBUGGIO110.SPCSO4.Oper.ctlVal [2]
		6	Output 5 Contact operate test (X100-PSM Connectors 19-20)	LD0.XUGGIO100.SPCSO5.Oper.ctlVal [1]
			Output 5 Contact operate test (X110-BIO-H Connectors 19-20)	LD0.XBUGGIO110.SPCSO5.Oper.ctlVal [2]
		7	Output 6 Contact operate test (X100-PSM Connectors 17-18)	LD0.XUGGIO100.SPCSO6.Oper.ctlVal [1]
			Output 6 Contact operate test (X110-BIO-H Connectors 17-18)	LD0.XBUGGIO110.SPCSO6.Oper.ctlVal [2]
		8	Reserved	
		9	Reserved	
		10	Reserved	
		11	Reserved	
		12	Reserved	
		13	Reserved	
		14	Reserved	
		15	Reserved	

Notes: Only single control points can be controlled at time, in any command. even though multiple register control command is accepted, only one point is activated at time on command.

Control points with [1] applicable for order code: *WFA**AA********1E.

Control points with [2] applicable for order code: *WFA**A1********1E.

This operation can be done in Test Mode and should only be used for commissioning purposes. Please notice that in Test Mode protective functions are disabled.

Control Structure	Control Register Addr	Control bit number	Description	IEC61850 Data Attribute Name
7	41202		Control Structure 7 Execute Register	
	41203		Control Structure 7 Password 1	
	41204		Control Structure 7 Password 2	
	41205		Spare	
	41206		Change Initiate Mask	
		0	CNTRL-1 Trig output 1	
		1	CNTRL-1 Trig output 2	
		2	CNTRL-1 Trig output 3	
		3	CNTRL-1 Trig output 4	
		4	CNTRL-1 Trig output 5	
		5	CNTRL-1 Trig output 6	
		6	CNTRL-1 Trig output 7	
		7	CNTRL-1 Trig output 8	
		8	Reserved	
		9	Reserved	
		10	Reserved	
		11	Reserved	
		12	Reserved	
		13	Reserved	
		14	Reserved	
		15	Reserved	
	41207		Confirm Initiate Mask	
		0	CNTRL-1 Trig output 1	LD0.SPCGGIO1.SPCSO1.Oper.ctlVal
		1	CNTRL-1 Trig output 2	LD0.SPCGGIO1.SPCSO2.Oper.ctlVal
		2	CNTRL-1 Trig output 3	LD0.SPCGGIO1.SPCSO3.Oper.ctlVal
		3	CNTRL-1 Trig output 4	LD0.SPCGGIO1.SPCSO4.Oper.ctlVal
		4	CNTRL-1 Trig output 5	LD0.SPCGGIO1.SPCSO5.Oper.ctlVal
		5	CNTRL-1 Trig output 6	LD0.SPCGGIO1.SPCSO6.Oper.ctlVal
		6	CNTRL-1 Trig output 7	LD0.SPCGGIO1.SPCSO7.Oper.ctlVal
		7	CNTRL-1 Trig output 8	LD0.SPCGGIO1.SPCSO8.Oper.ctlVal
		8	Reserved	
		9	Reserved	
		10	Reserved	
		11	Reserved	
		12	Reserved	
		13	Reserved	
		14	Reserved	
		15	Reserved	

Control Structure	Control Register Addr	Control bit number	Description	IEC61850 Data Attribute Name
8	41208		Control Structure 8 Execute Register	
	41209		Control Structure 8 Password 1	
	41210		Control Structure 8 Password 2	
	41211		Spare	
	41212		Change Initiate Mask	
		0	CNTRL-1 Trig output 9	
		1	CNTRL-1 Trig output 10	
		2	CNTRL-1 Trig output 11	
		3	CNTRL-1 Trig output 12	
		4	CNTRL-1 Trig output 13	
		5	CNTRL-1 Trig output 14	
		6	CNTRL-1 Trig output 15	
		7	CNTRL-1 Trig output 16	
		8	Reserved	
		9	Reserved	
		10	Reserved	
		11	Reserved	
		12	Reserved	
		13	Reserved	
		14	Reserved	
		15	Reserved	
	41213		Confirm Initiate Mask	
		0	CNTRL-1 Trig output 9	LD0.SPCGGIO1.SPCSO9.Oper.ctlVal
		1	CNTRL-1 Trig output 10	LD0.SPCGGIO1.SPCSO10.Oper.ctlVal
		2	CNTRL-1 Trig output 11	LD0.SPCGGIO1.SPCSO11.Oper.ctlVal
		3	CNTRL-1 Trig output 12	LD0.SPCGGIO1.SPCSO12.Oper.ctlVal
		4	CNTRL-1 Trig output 13	LD0.SPCGGIO1.SPCSO13.Oper.ctlVal
		5	CNTRL-1 Trig output 14	LD0.SPCGGIO1.SPCSO14.Oper.ctlVal
		6	CNTRL-1 Trig output 15	LD0.SPCGGIO1.SPCSO15.Oper.ctlVal
		7	CNTRL-1 Trig output 16	LD0.SPCGGIO1.SPCSO16.Oper.ctlVal
		8	Reserved	
		9	Reserved	
		10	Reserved	
		11	Reserved	
		12	Reserved	
		13	Reserved	
		14	Reserved	
		15	Reserved	

Control Structure	Control Register Addr	Control bit number	Description	IEC61850 Data Attribute Name
9	41214		Control Structure 9 Execute Register	
	41215		Control Structure 9 Password 1	
	41216		Control Structure 9 Password 2	
	41217		Spare	
	41218		Change Initiate Mask	
		0	CNTRL-2 Trig output 1	
		1	CNTRL-2 Trig output 2	
		2	CNTRL-2 Trig output 3	
		3	CNTRL-2 Trig output 4	
		4	CNTRL-2 Trig output 5	
		5	CNTRL-2 Trig output 6	
		6	CNTRL-2 Trig output 7	
		7	CNTRL-2 Trig output 8	
		8	CNTRL-2 Trig output 9	
		9	CNTRL-2 Trig output 10	
		10	CNTRL-2 Trig output 11	
		11	CNTRL-2 Trig output 12	
		12	CNTRL-2 Trig output 13	
		13	CNTRL-2 Trig output 14	
		14	CNTRL-2 Trig output 15	
		15	CNTRL-2 Trig output 16	
	41219		Confirm Initiate Mask	
		0	CNTRL-2 Trig output 1	LD0.SPCGGIO2.SPCSO1.Oper.ctlVal
		1	CNTRL-2 Trig output 2	LD0.SPCGGIO2.SPCSO2.Oper.ctlVal
		2	CNTRL-2 Trig output 3	LD0.SPCGGIO2.SPCSO3.Oper.ctlVal
		3	CNTRL-2 Trig output 4	LD0.SPCGGIO2.SPCSO4.Oper.ctlVal
		4	CNTRL-2 Trig output 5	LD0.SPCGGIO2.SPCSO5.Oper.ctlVal
		5	CNTRL-2 Trig output 6	LD0.SPCGGIO2.SPCSO6.Oper.ctlVal
		6	CNTRL-2 Trig output 7	LD0.SPCGGIO2.SPCSO7.Oper.ctlVal
		7	CNTRL-2 Trig output 8	LD0.SPCGGIO2.SPCSO8.Oper.ctlVal
		8	CNTRL-2 Trig output 9	LD0.SPCGGIO2.SPCSO9.Oper.ctlVal
		9	CNTRL-2 Trig output 10	LD0.SPCGGIO2.SPCSO10.Oper.ctlVal
		10	CNTRL-2 Trig output 11	LD0.SPCGGIO2.SPCSO11.Oper.ctlVal
		11	CNTRL-2 Trig output 12	LD0.SPCGGIO2.SPCSO12.Oper.ctlVal
		12	CNTRL-2 Trig output 13	LD0.SPCGGIO2.SPCSO13.Oper.ctlVal
		13	CNTRL-2 Trig output 14	LD0.SPCGGIO2.SPCSO14.Oper.ctlVal
		14	CNTRL-2 Trig output 15	LD0.SPCGGIO2.SPCSO15.Oper.ctlVal
		15	CNTRL-2 Trig output 16	LD0.SPCGGIO2.SPCSO16.Oper.ctlVal

Control Structure	Control Register Addr	Control bit number	Description	IEC61850 Data Attribute Name
10	41220		Control Structure 10 Execute Register	
	41221		Control Structure 10 Password 1	
	41222		Control Structure 10 Password 2	
	41223		Spare	
	41224		Change Initiate Mask	
		0	CNTRL-3 Trig output 1	
		1	CNTRL-3 Trig output 2	
		2	CNTRL-3 Trig output 3	
		3	CNTRL-3 Trig output 4	
		4	CNTRL-3 Trig output 5	
		5	CNTRL-3 Trig output 6	
		6	CNTRL-3 Trig output 7	
		7	CNTRL-3 Trig output 8	
		8	CNTRL-3 Trig output 9	
		9	CNTRL-3 Trig output 10	
		10	CNTRL-3 Trig output 11	
		11	CNTRL-3 Trig output 12	
		12	CNTRL-3 Trig output 13	
		13	CNTRL-3 Trig output 14	
		14	CNTRL-3 Trig output 15	
		15	CNTRL-3 Trig output 16	
	41225		Confirm Initiate Mask	
		0	CNTRL-3 Trig output 1	LD0.SPCGGIO3.SPCSO1.Oper.ctlVal
		1	CNTRL-3 Trig output 2	LD0.SPCGGIO3.SPCSO2.Oper.ctlVal
		2	CNTRL-3 Trig output 3	LD0.SPCGGIO3.SPCSO3.Oper.ctlVal
		3	CNTRL-3 Trig output 4	LD0.SPCGGIO3.SPCSO4.Oper.ctlVal
		4	CNTRL-3 Trig output 5	LD0.SPCGGIO3.SPCSO5.Oper.ctlVal
		5	CNTRL-3 Trig output 6	LD0.SPCGGIO3.SPCSO6.Oper.ctlVal
		6	CNTRL-3 Trig output 7	LD0.SPCGGIO3.SPCSO7.Oper.ctlVal
		7	CNTRL-3 Trig output 8	LD0.SPCGGIO3.SPCSO8.Oper.ctlVal
		8	CNTRL-3 Trig output 9	LD0.SPCGGIO3.SPCSO9.Oper.ctlVal
		9	CNTRL-3 Trig output 10	LD0.SPCGGIO3.SPCSO10.Oper.ctlVal
		10	CNTRL-3 Trig output 11	LD0.SPCGGIO3.SPCSO11.Oper.ctlVal
		11	CNTRL-3 Trig output 12	LD0.SPCGGIO3.SPCSO12.Oper.ctlVal
		12	CNTRL-3 Trig output 13	LD0.SPCGGIO3.SPCSO13.Oper.ctlVal
		13	CNTRL-3 Trig output 14	LD0.SPCGGIO3.SPCSO14.Oper.ctlVal
		14	CNTRL-3 Trig output 15	LD0.SPCGGIO3.SPCSO15.Oper.ctlVal
		15	CNTRL-3 Trig output 16	LD0.SPCGGIO3.SPCSO16.Oper.ctlVal

Control Structure	Control Register Addr	Control bit number	Description	IEC61850 Data Attribute Name
11	41226		Control Structure 11 Execute Register	
	41227		Control Structure 11 Password 1	
	41228		Control Structure 11 Password 2	
	41229		Spare	
	41230		Change Initiate Mask	
		0	Reserved	
		1	Reserved	
		2	Reserved	
		3	Reserved	
		4	Reserved	
		5	Reserved	
		6	Reserved	
		7	Reserved	
		8	Reserved	
		9	CB Trip	
		10	CB Close	
		11	CB Trip	
		12	CB Close	
		13	RCNTRL-1 Output 14	
		14	RCNTRL-1 Output 15	
		15	RCNTRL-1 Output 16	
	41231		Confirm Initiate Mask	
		0	Reserved	
		1	Reserved	
		2	Reserved	
		3	Reserved	
		4	Reserved	
		5	Reserved	
		6	Reserved	
		7	Reserved	
		8	Reserved	
		9	CB Trip	LD0.SPCRGGIO1.SPCSO10.Oper.ctlVal
		10	CB Close	LD0.SPCRGGIO1.SPCSO11.Oper.ctlVal
		11	CB Trip	LD0.SPCRGGIO1.SPCSO12.Oper.ctlVal
		12	CB Close	LD0.SPCRGGIO1.SPCSO13.Oper.ctlVal
		13	RCNTRL-1 Output 14	LD0.SPCRGGIO1.SPCSO14.Oper.ctlVal
		14	RCNTRL-1 Output 15	LD0.SPCRGGIO1.SPCSO15.Oper.ctlVal
		15	RCNTRL-1 Output 16	LD0.SPCRGGIO1.SPCSO16.Oper.ctlVal

Control Structure	Control Register Addr	Control bit number	Description	IEC61850 Data Attribute Name
12	41232		Control Structure 12 Execute Register	
	41233		Control Structure 12 Password 1	
	41234		Control Structure 12 Password 2	
	41235		Spare	
	41236		Change Initiate Mask	
		0	SR-1 Resets Q1 output when set	
		1	SR-1 Resets Q2 output when set	
		2	SR-1 Resets Q3 output when set	
		3	SR-1 Resets Q4 output when set	
		4	SR-1 Resets Q5 output when set	
		5	SR-1 Resets Q6 output when set	
		6	SR-1 Resets Q7 output when set	
		7	SR-1 Resets Q8 output when set	
		8	SR-2 Resets Q1 output when set	
		9	SR-2 Resets Q2 output when set	
		10	Hot Line Tag Logic L_FLAG	
		11	Hot Line Tag Logic R_FLAG	
		12	SR-2 Resets Q5 output when set	
		13	SR-2 Resets Q6 output when set	
		14	SR-2 Resets Q7 output when set	
		15	SR-2 Resets Q8 output when set	
	41237		Confirm Initiate Mask	
		0	SR-1 Resets Q1 output when set	LD0.SRGAPC1.Rs1.Oper.ctlVal
		1	SR-1 Resets Q2 output when set	LD0.SRGAPC1.Rs2.Oper.ctlVal
		2	SR-1 Resets Q3 output when set	LD0.SRGAPC1.Rs3.Oper.ctlVal
		3	SR-1 Resets Q4 output when set	LD0.SRGAPC1.Rs4.Oper.ctlVal
		4	SR-1 Resets Q5 output when set	LD0.SRGAPC1.Rs5.Oper.ctlVal
		5	SR-1 Resets Q6 output when set	LD0.SRGAPC1.Rs6.Oper.ctlVal
		6	SR-1 Resets Q7 output when set	LD0.SRGAPC1.Rs7.Oper.ctlVal
		7	SR-1 Resets Q8 output when set	LD0.SRGAPC1.Rs8.Oper.ctlVal
		8	SR-2 Resets Q1 output when set	LD0.SRGAPC2.Rs1.Oper.ctlVal
		9	SR-2 Resets Q2 output when set	LD0.SRGAPC2.Rs2.Oper.ctlVal
		10	Hot Line Tag Logic L_FLAG	LD0.SRGAPC2.Rs3.Oper.ctlVal
		11	Hot Line Tag Logic R_FLAG	LD0.SRGAPC2.Rs4.Oper.ctlVal
		12	SR-2 Resets Q5 output when set	LD0.SRGAPC2.Rs5.Oper.ctlVal
		13	SR-2 Resets Q6 output when set	LD0.SRGAPC2.Rs6.Oper.ctlVal
		14	SR-2 Resets Q7 output when set	LD0.SRGAPC2.Rs7.Oper.ctlVal
		15	SR-2 Resets Q8 output when set	LD0.SRGAPC2.Rs8.Oper.ctlVal

Control Structure	Control Register Addr	Control bit number	Description	IEC61850 Data Attribute Name
13	41238		Control Structure 13 Execute Register	
	41239		Control Structure 13 Password 1	
	41240		Control Structure 13 Password 2	
	41241		Spare	
	41242		Change Initiate Mask	
		0	SR-3 Resets Q1 output when set	
		1	SR-3 Resets Q2 output when set	
		2	SR-3 Resets Q3 output when set	
		3	SR-3 Resets Q4 output when set	
		4	SR-3 Resets Q5 output when set	
		5	SR-3 Resets Q6 output when set	
		6	SR-3 Resets Q7 output when set	
		7	SR-3 Resets Q8 output when set	
		8	SR-4 Resets Q1 output when set	
		9	SR-4 Resets Q2 output when set	
		10	SR-4 Resets Q3 output when set	
		11	SR-4 Resets Q4 output when set	
		12	SR-4 Resets Q5 output when set	
		13	SR-4 Resets Q6 output when set	
		14	SR-4 Resets Q7 output when set	
		15	SR-4 Resets Q8 output when set	
	41243		Confirm Initiate Mask	
		0	SR-3 Resets Q1 output when set	LD0.SRGAPC3.Rs1.Oper.ctlVal
		1	SR-3 Resets Q2 output when set	LD0.SRGAPC3.Rs2.Oper.ctlVal
		2	SR-3 Resets Q3 output when set	LD0.SRGAPC3.Rs3.Oper.ctlVal
		3	SR-3 Resets Q4 output when set	LD0.SRGAPC3.Rs4.Oper.ctlVal
		4	SR-3 Resets Q5 output when set	LD0.SRGAPC3.Rs5.Oper.ctlVal
		5	SR-3 Resets Q6 output when set	LD0.SRGAPC3.Rs6.Oper.ctlVal
		6	SR-3 Resets Q7 output when set	LD0.SRGAPC3.Rs7.Oper.ctlVal
		7	SR-3 Resets Q8 output when set	LD0.SRGAPC3.Rs8.Oper.ctlVal
		8	SR-4 Resets Q1 output when set	LD0.SRGAPC4.Rs1.Oper.ctlVal
		9	SR-4 Resets Q2 output when set	LD0.SRGAPC4.Rs2.Oper.ctlVal
		10	SR-4 Resets Q3 output when set	LD0.SRGAPC4.Rs3.Oper.ctlVal
		11	SR-4 Resets Q4 output when set	LD0.SRGAPC4.Rs4.Oper.ctlVal
		12	SR-4 Resets Q5 output when set	LD0.SRGAPC4.Rs5.Oper.ctlVal
		13	SR-4 Resets Q6 output when set	LD0.SRGAPC4.Rs6.Oper.ctlVal
		14	SR-4 Resets Q7 output when set	LD0.SRGAPC4.Rs7.Oper.ctlVal
		15	SR-4 Resets Q8 output when set	LD0.SRGAPC4.Rs8.Oper.ctlVal

Control Structure	Control Register Addr	Control bit number	Description	IEC61850 Data Attribute Name
14	41244		Control Structure 14 Execute Register	
	41245		Control Structure 14 Password 1	
	41246		Control Structure 14 Password 2	
	41247		Spare	
	41248		Change Initiate Mask	
		0	52CM-1 Resets accumulation energy	
		1	52CM-1 Reset CB remaining life and operation counter	
		2	86/94-1 Reset latched trip	
		3	49F Reset 49F temperature	
		4	PQI-1 CMHAI1 max demands reset	
		5	PQVPH-1 VMHAI1 max.demands reset	
		6	PQSS-1 Counters reset	
		7	PQSS-1 Recorded data reset	
		8	CTR-1 Loads the counter to preset value	
		9	CTR-1 Resets counter value	
		10	CTR-2 Loads the counter to preset value	
		11	CTR-2 Resets counter value	
		12	CTR-3 Loads the counter to preset value	
		13	CTR-3 Resets counter value	
		14	86/94-2 Reset latched trip	
		15	Protection LLN0 Reset all power quality data	
	41249		Confirm Initiate Mask	
		0	52CM-1 Resets accumulation energy	LD0.SSCBR1.RsAccAPwr.Oper.ctlVal
		1	52CM-1 Reset CB remaining life and operation counter	LD0.SSCBR1.RsCBWear.Oper.ctlVal
		2	86/94-1 Reset latched trip	LD0.TRPPTRC1.TrRs.Oper.ctlVal
		3	49F Reset 49F temperature	LD0.T1PTTR1.RsTmp.Oper.ctlVal
		4	PQI-1 CMHAI1 max demands reset	LD0.CMHAI1.RecRs.Oper.ctlVal
		5	PQVPH-1 VMHAI1 max.demands reset	LD0.VMHAI1.RecRs.Oper.ctlVal
		6	PQSS-1 Counters reset	LD0.PH1QVVR1.RsCnt.Oper.ctlVal
		7	PQSS-1 Recorded data reset	LD0.PH1QVVR1.RecRs.Oper.ctlVal
		8	CTR-1 Loads the counter to preset value	LD0.UDFCNT1.LodCnt.Oper.ctlVal
		9	CTR-1 Resets counter value	LD0.UDFCNT1.RsCnt.Oper.ctlVal
		10	CTR-2 Loads the counter to preset value	LD0.UDFCNT2.LodCnt.Oper.ctlVal
		11	CTR-2 Resets counter value	LD0.UDFCNT2.RsCnt.Oper.ctlVal
		12	CTR-3 Loads the counter to preset value	LD0.UDFCNT3.LodCnt.Oper.ctlVal
		13	CTR-3 Resets counter value	LD0.UDFCNT3.RsCnt.Oper.ctlVal
		14	86/94-2 Reset latched trip	LD0.TRPPTRC2.TrRs.Oper.ctlVal
		15	Protection LLN0 Reset all power quality data	LD0.LLN0.PQRs.Oper.ctlVal

Control Structure	Control Register Addr	Control bit number	Description	IEC61850 Data Attribute Name
15	41250		Control Structure 15 Execute Register	
	41251		Control Structure 15 Password 1	
	41252		Control Structure 15 Password 2	
	41253		Spare	
	41254		Change Initiate Mask	
		0	FLTMSTA1 Reset fault records	
		1	Disturbance recorder Manual trigger for the disturbance recorder	
		2	Disturbance recorder Clear all DFR recordings in the memory	
		3	79-1 79 reset to initial condition	
		4	79-1 79 all counters reset	
		5	reset IA IB IC CMMXU1 demands	
		6	LoadProf Reset load profile record	
		7	SP SE Reset of accumulated energy reading	
		8	CFD CFD Reset	
		9	52CM-1 Reset CB closing and opening travel times	
		10	52CM-1 Reset the charging time of the CB spring	
		11	86/94-2 Reset 86/94-2 lockout and latch	
		12	86/94-1 Reset 86/94-1 lockout and latch	
		13	Physical device Reset of protection relay	
		14	Reserved	
		15	Reserved	
	41255		Confirm Initiate Mask	

Control Structure	Control Register Addr	Control bit number	Description	IEC61850 Data Attribute Name
15 (cont.)		0	FLTMSTA1 Reset fault records	LD0.FLTMSTA1.RecRs.Oper.ctlVal
		1	Disturbance recorder Manual trigger for the disturbance recorder	DR.RDRE1.RcdTrg.Oper.ctlVal
		2	Disturbance recorder Clear all DFR recordings in the memory	DR.RDRE1.MemClr.Oper.ctlVal
		3	79-1 79 reset to initial condition	LD0.DARREC1.RsRec.Oper.ctlVal
		4	79-1 79 all counters reset	LD0.DARREC1.RsCnt.Oper.ctlVal
		5	reset IA IB IC CMMXU1 demands	LD0.CMSTA1.RecRs.Oper.ctlVal
		6	LoadProf Reset load profile record	LD0.LDPMSTA1.RecRs.Oper.ctlVal
		7	SP SE Reset of accumulated energy reading	LD0.SPEMMTR1.SupDmdRs.Oper.ctlVal
		8	CFD CFD Reset	LD0.RCFD1.Rst.Oper.ctlVal
		9	52CM-1 Reset CB closing and opening travel times	LD0.SSCBR1.RsTrvTm.Oper.ctlVal
		10	52CM-1 Reset the charging time of the CB spring	LD0.SSCBR1.RsSprChaTm.Oper.ctlVal
		11	86/94-2 Reset 86/94-2 lockout and latch	LD0.TRPPTRC2.LORs.Oper.ctlVal
		12	86/94-1 Reset 86/94-1 lockout and latch	LD0.TRPPTRC1.LORs.Oper.ctlVal
		13	Physical device Reset of protection relay	LD0.LPHD1.RsDev.Oper.ctlVal
		14	Reserved	
		15	Reserved	

Section 3 Glossary

AFL	Application function block library
ANSI	American National Standards Institute
AR	Autoreclosing
CB	Circuit breaker
CT	Current transformer
CTRL	Control logical device
DFR	Digital fault recorder
DNP3	A distributed network protocol originally developed by Westronic. The DNP3 Users Group has the ownership of the protocol and assumes responsibility for its evolution.
DR	Disturbance recorder
EMC	Electromagnetic compatibility
HMI	Human-machine interface
I/O	Input/output
ID	Identifier or identification
IEC 61850	International standard for substation communication and modeling
Protection relay	Intelligent electronic device
LD0	Logical device zero (0)
LED	Light-emitting diode
LHMI	Local human-machine interface
LLN0	Logical node zero (0)
MCD	Momentary change detect
Modbus	A serial communication protocol developed by the Modicon company in 1979. Originally used for communication in PLCs and RTU devices.
MOM	Momentary position
PCM600	Protection and Control Protection Relay Manager
PLC	Programmable logic controller
SBO	Select-before-operate

stVal	Status value
SW	Software
UTC	Coordinated universal time
Val	Value

Contact us

ABB Inc.
Distribution Automation
4300 Coral Ridge Drive
Coral Springs, FL 33065, USA
Phone:+1 (800) 523-2620
Phone:+1 954-752-6700
Fax:+1 954 345-5329
www.abb.com/substationautomation

1MRS240052-IB B © Copyright 2016 ABB. All rights reserved.

Power and productivity
for a better world™