ARCTEQ®
RELAYABLE POWER

Model Implementation Conformance Statement (MICS) for the IEC 61850 Edition 2 server interface in AQ-L359 product

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1 Introduction

This model implementation conformance statement is applicable for **AQ-300 series** with firmware version **2.10.**

This MICS document specifies the modelling extensions compared to IEC 61850 Edition 2. For the exact details on the standardized model please compare the ICD substation configuration file: “AQ-L359.icd”, version 1.0.

The following chapters describe the list of implemented logical nodes and the new and extended logical nodes (if any).

1.1 Logical nodes list

The following table contains the list of logical nodes implemented in the device:

L: System Logical Nodes
LPHD (Physical device information)
LLN0 (Logical node zero)
LTRK (Service tracking)
P: Logical Nodes for protection functions
PIOC (Instantaneous overcurrent)
PTOC (Time overcurrent)
PTOF (Overfrequency)
PTOV (Overvoltage)
PTUV (Undervoltage)
PTUF (Underfrequency)
PFRC (ROCOF)
PDIS (Distance)
PDIF (Differential)
PSCH (Protection scheme)
PTTR (Thermal overload)
PDOP (Overpower)
PDUP (Underpower)
PTRC (Protection trip)
PHAR (Harmonic restraint)
R: Logical nodes for protection related functions

RFLO (Fault locator)
RREC (Autoreclosing)
RPSB (Power swing blocking)
RSYN (Synchronizm-check)
RBRF (Breaker failure)
RSOF (Switch onto fault – vendor specific)
G: Logical Nodes for generic references
GGIO (Generic process I/O)
M: Logical Nodes for metering and measurement
MMTR (Metering)
MMXU (Measurement)
MMXN (Non-phase related meas.)
X: Logical Nodes for switchgear
XCBR (Circuit breaker)
XSWI (Switch)
C: Logical Nodes for control
CSWI (Switch controller)
CILO (Interlocking)

Logical Node Extensions
The following table use

- M: Data object is mandatory in the IEC 61850-7-4 ED.2.
- O: Data object is optional in the IEC 61850-7-4 ED.2 and is used in the device.
- E: Data object is an extension to the IEC 61850-7-4 ED.2.

1.2 New logical nodes

Newly created logical nodes are listed in this clause, with lnNs attribute in the Name plate.

RSOF – switch onto fault

RSOF class				
Data object name	**Common data class**	**Explanation**	**M/O/E**	**Remarks**
RSOF		Switch onto fault		
Data Objects				
Common Logical Node Information				

Beh	INS	Behaviour	M	
NamPlt	LPL	Name plate	M	
Status Information				
Op	ACT	Operate	M	
SwFltSt	SPS	Switch onto fault condition	M	
Settings				

1.3 Extended logical nodes

The following logical nodes have been extended with extra data. All extra data has been highlighted in the tables and marked as “E” (Extended).

PSCH class				
Data object name	Common data class	Explanation	M/O/E	Remarks
PSCH		Protection scheme		Type: EUPP2_Z_PSCH
Data objects				
Common Logical Node Information				
Beh	INS	Behaviour	M	
Status Information				
Op	ACT	Operate	M	
CarRx	ACT	Carrier received after unblock logic	E	Compatibility with Ed.1
LosOfGrd	SPS	Loss of guard	E	Compatibility with Ed.1
Str	ACD	Carrier send	E	Compatibility with Ed.1

PDIF class				
Data object name	Common data class	Explanation	M/O/E	Remarks
PDIF		Transformer differential prot.		Type: EUPP2_TR_PDIF
Data objects				
Common Logical Node Information				
Beh	INS	Behaviour	M	

Status Information				
Str	ACD	Start	O	
Op	ACT	Operate	M	
OpUnr	ACT	Operate unrestrained	E	

RSYN class				
Data object name	**Common data class**	**Explanation**	**M/O/E**	**Remarks**
RSYN		Synchrocheck with synchroswitch		Type: EUPP2_SYN_RSYN
Data objects				
Common Logical Node Information				
Beh	INS	Behaviour	M	
Status Information				
Rel	SPS	Release	M	
SynPrg	SPC	Start synchrocheck	O	status only
SynOp	ACT	Operate synchroswitch	E	

RREC class				
Data object name	**Common data class**	**Explanation**	**M/O/E**	**Remarks**
RREC		Autorecloser		Type: EUPP2_AR_RREC
Data objects				
Common Logical Node Information				
Beh	INS	Behaviour	M	
Status Information				
RecCyc	INS	Actual reclose cycle	O	
OpCls	ACT	Close switch	M	
AutoRecSt	ENS	Auto reclosing status	M	
BlkRec	SPC	Block reclosing	E	direct-normal (Ed.1 comp.)
DefTrp	SPS	Definitive trip	E	

MMTR class				
Data object name	Common data class	Explanation	M/O/E	Remarks
MMTR		Metering		Type: EUPP2_E_MMTR
Data objects				
Common Logical Node Information				
Beh	INS	Behaviour	M	
Status Information				
DmdVArhPV	MV	Demand value - reactive	E	
DmdWhPV	MV	Demand value - active	E	
SupVArhPV	MV	Supply value - reactive	E	
SupWhPV	MV	Supply value - active	E	