

RELION® PROTECTION AND CONTROL

630 series

IEC 61850 Point List Manual





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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 60255-1 and EN 60255-27 for the low voltage directive. The product is designed in accordance with the international standards of the IEC 60255 series.

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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 an 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

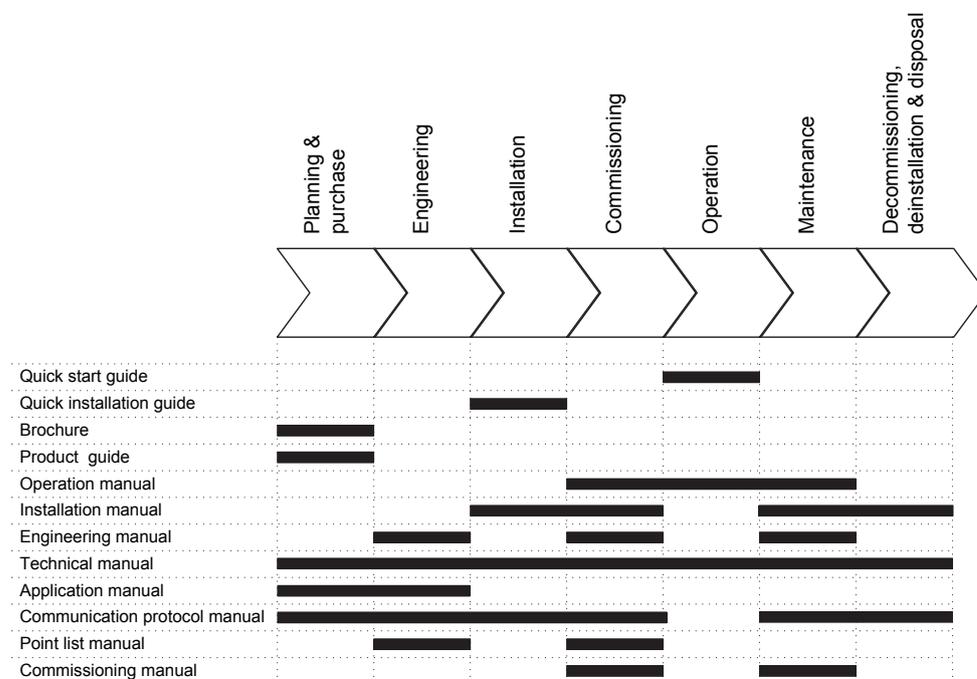


Figure 1: The intended use of documents during the product life cycle



Product series- and product-specific manuals can be downloaded from the ABB Web site <http://www.abb.com/relion>.

1.3.2 Document revision history

Document revision/date	Product version	History
A/2009-09-15	1.0	First release
B/2011-02-23	1.1	Content updated to correspond to the product series version
C/2012-08-29	1.2	Content updated to correspond to the product series version
D/2014-11-28	1.3	Content updated to correspond to the product series version
E/2019-02-25	1.3	Content updated



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
IEC 61850 Communication Protocol Manual	1MRS756793
630_series_ver_1.3_IEC_61850_MICS	1MRS189725
630_series_ver_1.3_IEC61850_PICS	1MRS189726
630_series_ver_1.3_IEC61850_PIXIT	1MRS189727
630_series_ver_1.3_IEC61850_TICS	1MRS189728

1.4 Symbols and conventions

1.4.1 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 of 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 is necessary to understand that under certain operational conditions, operation of damaged equipment may result in degraded process performance leading to personal injury or death. Therefore, comply fully with all warning and caution notices.

1.4.2 Document conventions

A particular convention may not be used in this manual.

- Abbreviations and acronyms 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.

- To navigate between the options, use  and .
- Menu paths are presented in bold.
Select **Main menu/Settings**.
- WHMI menu names are presented in bold.
Click **Information** in the WHMI menu structure.
- LHMI messages are shown in Courier font.
To save the changes in nonvolatile memory, select **Yes** and press .
- Parameter names are shown in italics.
The function can be enabled and disabled with the *Operation* setting.
- The ^ character in front of an input or output signal name in the function block symbol given for a function, indicates that the user can set an own signal name in PCM600.
- The * character after an input or output signal name in the function block symbol given for a function, indicates that the signal must be connected to another function block in the application configuration to achieve a valid application configuration.

1.4.3

Functions, codes and symbols

Table 1: *Functions included in the IEDs*

Description	IEC 61850	IEC 60617	ANSI
Protection			
Three-phase non-directional overcurrent protection, low stage	PHLPTOC	3I>	51P-1
Three-phase non-directional overcurrent protection, high stage	PHHPTOC	3I>>	51P-2
Three-phase non-directional overcurrent protection, instantaneous stage	PHIPTOC	3I>>>	50P/51P
Voltage dependent overcurrent protection	PHPVOC	I(U)>	51V
Three-phase directional overcurrent protection, low stage	DPHLPDOC	3I> ->	67-1
Three-phase directional overcurrent protection, high stage	DPHHPDOC	3I>> ->	67-2
Distance protection	DSTPDIS	Z<	21, 21P, 21N
Automatic switch-onto-fault logic	CVRSOF	SOTF	SOTF
Fault locator	SCEFRFLO	FLOC	21FL
Autoreclosing	DARREC	O -> I	79
Non-directional earth-fault protection, low stage	EFLPTOC	I0>	51N-1
Non-directional earth-fault protection, high stage	EFHPTOC	I0>>	51N-2
Non-directional earth-fault protection, instantaneous stage	EFIPTOC	I0>>>	50N/51N
Table continues on next page			

Description	IEC 61850	IEC 60617	ANSI
Directional earth-fault protection, low stage	DEFLPDEF	I0> ->	67N-1
Directional earth-fault protection, high stage	DEFHPDEF	I0>> ->	67N-2
Harmonics based earth-fault protection	HAEFPTOC	I0>HA	51NHA
Transient/intermittent earth-fault protection	INTRPTEF	I0> -> IEF	67NIEF
Admittance-based earth-fault protection	EFPADM	Y0> ->	21YN
Multi-frequency admittance-based earth-fault protection	MFADPSDE	I0> ->Y	67YN
Wattmetric earth-fault protection	WPWDE	P0> ->	32N
Stabilised restricted earth-fault protection	LREFPNDF	dI0Lo>	87NL
Third harmonic based stator earth fault protection	H3EFPSEF	dUo(3H)>/ Uo(3H)<	27/59THD
High-impedance based restricted earth-fault protection	HREFPDIF	dI0Hi>	87NH
Rotor earth-fault protection	MREFPTOC	I0>R	64R
Phase discontinuity protection	PDNSPTOC	I2/I1>	46PD
Negative-sequence overcurrent protection	NSPTOC	I2>	46
Negative-sequence overcurrent protection for machines	MNSPTOC	I2>G/M	46G/46M
Phase-reversal protection	PREVPTOC	I2>>	46R
Three-phase thermal overload protection for feeder	T1PTTR	3Ith>F	49F
Three-phase thermal overload protection, two time constants	T2PTTR	3Ith>T/G	49T/G
Three-phase thermal overload protection for motors	MPTR	3Ith>M	49M
Motor startup supervision	STTPMSU	I s2t n<	48,66,14,51LR
Motor load jam protection	JAMPPTOC	Ist>	51LR
Emergency start	ESMGAPC	ESTART	ESTART
Loss of load supervision	LOFLPTUC	3I<	37
Three-phase current inrush detection	INRPHAR	3I2f>	68
Transformer differential protection for two-winding transformers	TR2PTDF	3dI>T	87T
High-impedance or flux-balance based differential protection for machines	MHZPDIF	3dIHi>G/M	87GH/87MH
Stabilized differential protection for machines	MPDIF	3dI>G/M	87G/87M
Three-phase overvoltage protection	PHPTOV	3U>	59
Table continues on next page			

Description	IEC 61850	IEC 60617	ANSI
Three-phase undervoltage protection	PHPTUV	3U<	27
Positive-sequence overvoltage protection	PSPTOV	U1>	47O+
Positive-sequence undervoltage protection	PSPTUV	U1<	47U+
Negative-sequence overvoltage protection	NSPTOV	U2>	47O-
Residual overvoltage protection	ROVPTOV	U0>	59G
Directional reactive power undervoltage protection	DQPTUV	Q>-->,3U<	32Q,27
Reverse power/directional overpower protection	DOPDPDR	P>	32R/32O
Underpower protection	DUPDPDR	P<	32U
Frequency gradient protection	DAPFRC	df/dt>	81R
Overfrequency protection	DAPTOF	f>	81O
Underfrequency protection	DAPTUF	f<	81U
Load shedding	LSHDPFRQ	UFLS/R	81LSH
Low voltage ride through protection function	LVRTPTUV	U<RT	27RT
Overexcitation protection	OEPVPH	U/f>	24
Voltage vector shift protection	VVSPAM	VS	78V
Three-phase underexcitation protection	UEXPDIS	X<	40
Three-phase underimpedance protection	UZPDIS	Z< GT	21GT
Circuit breaker failure protection	CCBRBRF	3I>/I0>BF	51BF/51NBF
Tripping logic	TRPPTRC	I -> O	94
Multipurpose analog protection	MAPGAPC	MAP	MAP
Protection-related functions			
Local acceleration logic	DSTPLAL	LAL	LAL
Communication logic for residual overcurrent	RESCPSCH	CLN	85N
Scheme communication logic	DSOCPSCH	CL	85
Current reversal and WEI logic	CRWPSCH	CLCRW	85CRW
Current reversal and WEI logic for residual overcurrent	RCRWPSCH	CLCRWN	85NCRW
Control			
Bay control	QCCBAY	CBAY	CBAY
Interlocking interface	SCILO	3	3
Circuit breaker/disconnector control	GNRLCSWI	I <-> O CB/DC	I <-> O CB/DC
Circuit breaker	DAXCBR	I <-> O CB	I <-> O CB
Disconnector	DAXSWI	I <-> O DC	I <-> O DC
Table continues on next page			

Description	IEC 61850	IEC 60617	ANSI
Local/remote switch interface	LOCREM	R/L	R/L
Synchrocheck	SYNCRSYN	SYNC	25
Tap changer control with voltage regulator	OLATCC	COLTC	90V
Generic process I/O			
Single point control (8 signals)	SPC8GGIO	-	-
Double point indication	DPGGIO	-	-
Single point indication	SPGGIO	-	-
Generic measured value	MVGGIO	-	-
Logic Rotating Switch for function selection and LHMI presentation	SLGGIO	-	-
Selector mini switch	VSGGIO	-	-
Pulse counter for energy metering	PCGGIO	-	-
Event counter	CNTGGIO	-	-
Supervision and monitoring			
Runtime counter for machines and devices	MDSOPT	OPTS	OPTM
Circuit breaker condition monitoring	SSCBR	CBCM	CBCM
Fuse failure supervision	SEQRFUF	FUSEF	60
Current circuit supervision	CCRDIF	MCS 3I	MCS 3I
Trip-circuit supervision	TCSSCBR	TCS	TCM
Station battery supervision	SPVNZBAT	U<>	U<>
Energy monitoring	EPDMMTR	E	E
Measured value limit supervision	MVEXP	-	-
Hot-spot and insulation ageing rate monitoring for transformers	HSARSPTR	3Ihp>T	26/49HS
Tap position indication	TPOSSLTC	TPOSM	84M
Power quality			
Voltage variation	PHQVVR	PQMU	PQMV
Voltage unbalance	VSQVUB	PQMUBU	PQMUBV
Current harmonics	CMHAI	PQM3I	PQM3I
Voltage harmonics (phase-to-phase)	VPPMHAI	PQM3Upp	PQM3Vpp
Voltage harmonics (phase-to-earth)	VPHMHAI	PQM3Upe	PQM3Vpg
Measurement			
Three-phase current measurement	CMMXU	3I	3I
Three-phase voltage measurement (phase-to-earth)	VPHMMXU	3Upe	3Upe
Three-phase voltage measurement (phase-to-phase)	VPPMMXU	3Upp	3Upp
Residual current measurement	RESCMMXU	I0	I0
Table continues on next page			

Description	IEC 61850	IEC 60617	ANSI
Residual voltage measurement	RESVMMXU	U0	U0
Power monitoring with P, Q, S, power factor, frequency	PWRMMXU	PQf	PQf
Sequence current measurement	CSMSQI	I1, I2	I1, I2
Sequence voltage measurement	VSMSQI	U1, U2	V1, V2
Analog channels 1-10 (samples)	A1RADR	ACH1	ACH1
Analog channels 11-20 (samples)	A2RADR	ACH2	ACH2
Analog channels 21-30 (calc. val.)	A3RADR	ACH3	ACH3
Analog channels 31-40 (calc. val.)	A4RADR	ACH4	ACH4
Binary channels 1-16	B1RBDR	BCH1	BCH1
Binary channels 17 -32	B2RBDR	BCH2	BCH2
Binary channels 33 -48	B3RBDR	BCH3	BCH3
Binary channels 49 -64	B4RBDR	BCH4	BCH4
Station communication (GOOSE)			
Binary receive	GOOSEBINRCV	-	-
Double point receive	GOOSEDPRCV	-	-
Interlock receive	GOOSEINTLKRCV	-	-
Integer receive	GOOSEINTRCV	-	-
Measured value receive	GOOSEMVRCV	-	-
Single point receive	GOOSESRCV	-	-

Section 2 Logical node list

2.1 Logical nodes

Table 2: *Logical nodes implemented in the 630 series IEDs*

Logical node groups	Logical node	Description
A: Logical Nodes for automatic control	ATCC	Automatic on-load tap changer controller
C: Logical Nodes for control	CBAY	Bay control
	CILO	Interlocking
	CSWI	Switch controller
L: System Logical Nodes	LPHD	Physical device information
	LLN0	Logical node zero
P: Logical Nodes for protection functions	PADM	Admittance
	PDIF	Differential protection
	PDIS	Distance protection
	PDOP	Direction overpower protection
	PDUP	Direction underpower protection
	PFRC	Rate of change of frequency
	PHAR	Harmonic distortion
	PLAL	Local acceleration logic
	PMRI	Motor restart inhibition
	PMSS	Motor starting time supervision
	PPAM	Phase angle measuring
	PSCH	Protection scheme
	PSDE	Sensitive directional earthfault
	PTEF	Transient earth fault
	PTOC	Time overcurrent
	PTOF	Overfrequency
	PTOV	Overvoltage
PTRC	Protection trip conditioning	
PTTR	Thermal overload	
PTUC	Time undercurrent	
PTUV	Undervoltage	
PTUF	Underfrequency	
PVPH	Overexcitation protection	

Table continues on next page

Logical node groups	Logical node	Description
	PVOC	Voltage dependent overcurrent protection
Q: Logical nodes for power quality	QVUB	Voltage Unbalance Variation
	QVVR	Short duration voltage variations
R: Logical nodes for protection related functions	RBRF	Breaker failure
	RDIF	Differential supervision
	RDIR	Directional element
	RDRE	Disturbance recorder
	RFLO	Fault locator
	RFUF	Fuse failure supervision
	RREC	Autoreclosing
	RSOF	Switc onto fault logic
	RSYN	Synchronising
G: Logical Nodes for generic references	GAPC	Generic automatic process control
	GGIO	Generic process I/O
M: Logical Nodes for metering and measurement	MMTR	Metering
	MMXU	Measurement
	MSQI	Sequence and imbalance
S: Logical Nodes for sensors and monitoring	SCBR	Circuit breaker monitoring
	SLTC	Tap changer supervision
	SOPT	Operation time counter
	SPTR	Power transformer supervision
X: Logical Nodes for switchgear	XCBR	Circuit breaker
	XSWI	Switch
Z: Logical nodes for further power system equipment	ZBAT	Battery

Section 3 Logical node extensions

3.1 New logical nodes

New logical nodes have the InNs attribute in the Name plate. The value of InNs is a reference to the MICS document.

Table 3: *New functions in the 630 series IEDs*

LN Class	Prefix	LN Type	Description
RSOF	CV	CVRSOF	Automatic switch onto fault logic
RDIF	CC	CCRDIF	Current circuit supervision, current based
RFUF	SEQ	SEQRUFUF	Fuse failure supervision, negative sequence and du/dt and di/dt based
CBAY	QC	QCCBAY	Bay function
PLAL	DST	DSTPLAL	Local acceleration logic
SCBR	TCS	TCSSCBR	Trip circuit supervision function
SCBR	S	SSCBR	Circuit breaker condition monitoring
SLTC	TPOS	TPOSSLTC	Tap position indication
PADM	EF	EFPADM	Earth fault admittance protection
QVVR	PH	PHQVVR	Voltage sag, swell and interruption monitoring
QVUB	VS	VSQVUB	Voltage Imbalance monitoring function
SOPT	MD	MDSOPT	General operate time counter
SPTR	HSAR	HSARSPTR	Hot spot and insulation aging rate monitoring for transformers
SPTR	ARA	ARASPTR	Average aging rate calculation for transformers

3.1.1 CVRSOF

Table 4: *CVRSOF*

Attribute name	DATA type	Explanation	M/O/E	Remarks
RSOF class				
RSOF		Switch onto fault logic	M	
Data				
Common Logical Node Information				
Mod	ABB_a_dINC	Mode	M	
Beh	ABB_a_dINS	Behaviour	M	
Health	ABB_c_dINS	Health	M	
Table continues on next page				

Attribute name	DATA type	Explanation	M/O/E	Remarks
NamPlt	ABB_b_dLPL	Name plate	M	
Status Information				
TrFltst	ABB_a_dSPS	Trip fault state	E	

3.1.2

CCRDIF

Table 5: CCRDIF

Attribute name	DATA type	Explanation	M/O/E	Remarks
RDIF class				
RDIF		Differential current supervision	M	
Data				
Common Logical Node Information				
Mod	ABB_a_dINC	Mode	M	
Beh	ABB_a_dINS	Behaviour	M	
Health	ABB_c_dINS	Health	M	
NamPlt	ABB_b_dLPL	Name plate	M	
Status Information				
Op	ABB_b_dACT	Detection of current circuit failure	E	
Alm	ABB_a_dSPS	Alarm for current circuit failure	E	

3.1.3

SEQRFUF

Table 6: SEQRFUF

Attribute name	DATA type	Explanation	M/O/E	Remarks
RFUF class				
RFUF		Fuse failure supervision	M	
Data				
Common Logical Node Information				
Mod	ABB_a_dINC	Mode	M	
Beh	ABB_a_dINS	Behaviour	M	
Health	ABB_c_dINS	Health	M	
NamPlt	ABB_b_dLPL	Name plate	M	
Status Information				
Str	ABB_d_dACD	Start (Power Swing Detected)	E	
Str3Ph	ABB_d_dACD	Three-phase start of function	E	
StrRst	ABB_d_dACD	Start of current and voltage controlled function	E	

3.1.4 QCCBAY

Table 7: QCCBAY

Attribute name	DATA type	Explanation	M/O/E	Remarks
CBAY class				
CBAY		Bay function	M	
Data				
Common Logical Node Information				
Mod	ABB_a_dINC	Mode	M	
Beh	ABB_a_dINS	Behaviour	M	
Health	ABB_c_dINS	Health	M	
NamPlt	ABB_b_dLPL	Name plate	M	
Status Information				
BlkCmd	ABB_v1_dSPC	Block commands	E	Controllable
BlkUpd	ABB_v1_dSPC	Block update	E	Controllable
Loc	ABB_a_dSPS	Local operation	E	
Rem	ABB_v1_dSPS	Remote operation	E	
LocSwPos	ABB_v1_dINS	Position of local switch	E	

3.1.5 DSTPLAL

Table 8: DSTPLAL

Attribute name	DATA type	Explanation	M/O/E	Remarks
PLAL class				
PLAL		Local acceleration logic	M	
Data				
Common Logical Node Information				
Mod	ABB_a_dINC	Mode	M	
Beh	ABB_a_dINS	Behaviour	M	
Health	ABB_c_dINS	Health	M	
NamPlt	ABB_b_dLPL	Name plate	M	
Status Information				
OpLosLod	ABB_b_dACT	Operate by loss of load	E	
OpZnExd	ABB_b_dACT	Operate by zone extension	E	

3.1.6 TCSSCBR

Table 9: TCSSCBR

Attribute name	DATA type	Explanation	M/O/E	Remarks
SCBR class				
SCBR		Trip circuit supervision function	M	
Data				
Common Logical Node Information				
Mod	ABB_a_dINC	Mode	M	
Beh	ABB_a_dINS	Behaviour	M	
Health	ABB_c_dINS	Health	M	
NamPlt	ABB_c_dLPL	Name plate	M	
Status Information				
TrCctAlm	ABB_a_dSPS	Trip circuit healthy alarm	O	

3.1.7 SSCBR

Table 10: SSCBR

Attribute name	DATA type	Explanation	M/O/E	Remarks
SCBR class				
SCBR		Circuit breaker condition monitoring	M	
Data				
Common Logical Node Information				
Mod	ABB_a_dINC	Mode	M	
Beh	ABB_a_dINS	Behaviour	M	
Health	ABB_c_dINS	Health	M	
NamPlt	ABB_c_dLPL	Name plate	M	
Status Information				
OpCnt	ABB_v5_dINS	Number of CB operations	E	
OpnAlm	ABB_v1_dSPS	Open alarm	E	
RsAccAPwr	ABB_v1_dSPC	Reset energy	E	Controllable
TmmsCls	ABB_v2_dMV	CB close travel time	E	
ClsAlm	ABB_v1_dSPS	Close alarm	E	
OpNumAlm	ABB_v1_dSPS	Number of CB operations exceeds alarm limit	E	
OpNumLO	ABB_v1_dSPS	Number of CB operations exceeds lock out limit	E	
APwrAlm	ABB_v1_dSPS	Accumulated energy exceeds alarm setting	E	
APwrLO	ABB_v1_dSPS	Accumulated energy exceeds lockout setting	E	
Table continues on next page				

Attribute name	DATA type	Explanation	M/O/E	Remarks
LonTmAlm	ABB_v1_dSPS	CB not operated for long time	E	
SprChaAlm	ABB_v1_dSPS	Spring charging time exceeds threshold setting	E	
PresAlm	ABB_v3_dSPS	Pressure below alarm level	E	
InaTmdCnt	ABB_v1_dINS	Number of days CB has been Inactive	E	
PosOpn	ABB_v1_dSPS	CB is in open position	E	
Poslvd	ABB_v1_dSPS	CB position is invalid	E	
PosCls	ABB_v1_dSPS	CB is in close position	E	
CBLifAlm	ABB_v1_dSPS	Life of CB below alarm level	E	
TmmsOpn	ABB_v2_dMV	CB open travel time	E	
TmsSprCha	ABB_v2_dMV	Charging time of the CB spring	E	
AccAPwrPhB	ABB_v2_dMV	Accumulated currents power for phase B	E	
AccAPwrPhC	ABB_v2_dMV	Accumulated currents power for phase C	E	
RmnLifPhA	ABB_v1_dINS	Remaining life of CB of phase A	E	
RmnLifPhB	ABB_v1_dINS	Remaining life of CB of phase B	E	
RmnLifPhC	ABB_v1_dINS	Remaining life of CB of phase C	E	
RsCBWear	ABB_v1_dSPC	Reset operation counter	E	Controllable
AccAPwrPhA	ABB_v2_dMV	Accumulated currents power for phase A	E	
PresLO	ABB_v1_dSPS	Pressure below lockout level	E	
RsTrvTm	ABB_v1_dSPC	Reset travel times and related alarms	E	Controllable
RsSprChaTm	ABB_v1_dSPC	Reset spring charge time and related alarm	E	Controllable

3.1.8

TPOSSLTC

Table 11: TPOSSLTC

Attribute name	DATA type	Explanation	M/O/E	Remarks
SLTC class				
SLTC		Tap position indication	M	
Data				
Common Logical Node Information				
Mod	ABB_a_dINC	Mode	M	
Beh	ABB_a_dINS	Behaviour	M	
Health	ABB_c_dINS	Health	M	
NamPlt	ABB_b_dLPL	Name plate	M	
Status Information				
TapPoslvd	ABB_a_dSPS	Tap position invalidity	E	
TapPos	ABB_d_dINC	Tap position	E	Status-only

3.1.9 EFPADM

Table 12: EFPADM

Attribute name	DATA type	Explanation	M/O/E	Remarks
PADM class				
PADM		Earth-fault admittance protection	M	
Data				
Common Logical Node Information				
Mod	ABB_c_dINC	Mode	M	Status-only
Beh	ABB_a_dINS	Behaviour	M	
Health	ABB_c_dINS	Health	M	
NamPlt	ABB_e_dLPL	Name plate	M	
Status Information				
Cond	ABB_b_dMV	Measured neutral conductance	E	
IvdChrLin	ABB_b_dINS	Overlapping admittance boundary line settings	E	
Op	ABB_b_dACT	Operate	E	
Str	ABB_d_dACD	Start	E	
StrDur	ABB_b_dMV	Start duration	E	
Sus	ABB_b_dMV	Measured neutral susceptance	E	

3.1.10 PHQVVR

Table 13: PHQVVR

Attribute name	DATA type	Explanation	M/O/E	Remarks
QVVR class				
QVVR		Voltage sag, swell and interruption monitoring	M	
Data				
Common Logical Node Information				
Mod	ABB_c_dINC	Mode	M	Status-only
Beh	ABB_a_dINS	Behaviour	M	
Health	ABB_c_dINS	Health	M	
NamPlt	ABB_b_dLPL	Name plate	M	
Status Information				
DipStr	ABB_d_dSPS	Start (Voltage dip event in progress)	E	
SwlStr	ABB_d_dSPS	Start (Voltage swell event in progress)	E	
IntrStr	ABB_d_dSPS	Voltage interruption start (Voltage Interruption event in progress)	E	
Table continues on next page				

Attribute name	DATA type	Explanation	M/O/E	Remarks
DipOp	ABB_d_dSPS	Operate (Voltage dip event finished but not reset)	E	
SwlOp	ABB_d_dSPS	Operate (Voltage swell event finished but not reset)	E	
IntrOp	ABB_d_dSPS	Operate (Voltage interruption event finished but not Reset)	E	
DipSwlOp	ABB_d_dSPS	Operate (Concurrent voltage dip and swell event finished but not reset)	E	
VarStr1	ABB_d_dSPS	Start phase A/AB (Voltage variation event in progress)	E	
VarStr2	ABB_d_dSPS	Start phase B/BC (Voltage variation event in progress)	E	
VarStr3	ABB_d_dSPS	Start phase C/CA (Voltage variation event in progress)	E	
DipOpCnt	ABB_b_dINS	Operation counter for voltage dip event	E	
SwlOpCnt	ABB_b_dINS	Operation counter for voltage swell event	E	
IntrOpCnt	ABB_b_dINS	Operation counter for voltage interruption event	E	
RsCnt	ABB_a_dSPC	Reset counters	E	Controllable

3.1.11

VSQVUB

Table 14: VSQVUB

Attribute name	DATA type	Explanation	M/O/E	Remarks
QVUB class				
QVUB		Voltage imbalance monitoring function	M	
Data				
Common Logical Node Information				
Mod	ABB_c_dINC	Mode	M	Status-only
Beh	ABB_a_dINS	Behaviour	M	
Health	ABB_c_dINS	Health	M	
NamPlt	ABB_b_dLPL	Name plate	M	
Status Information				
Str	ABB_d_dACD	Start (Three seconds mean voltage imbalance is above limit)	E	
Vlmb3sMn	ABB_b_dMV	Sliding three seconds mean value of voltage imbalance	E	
Vlmb10mMn	ABB_b_dMV	Sliding 10 minutes mean value of voltage imbalance	E	
HiMnlmbVal	ABB_v2_dMV	Maximum three seconds sliding mean voltage imbalance during alarm	E	

3.1.12 MDSOPT

Table 15: MDSOPT

Attribute name	DATA type	Explanation	M/O/E	Remarks
SLTC class				
SLTC		General operate time counter	M	
Data				
Common Logical Node Information				
Mod	ABB_a_dINC	Mode	M	
Beh	ABB_a_dINS	Behaviour	M	
Health	ABB_a_dINS	Health	M	
NamPlt	ABB_b_dLPL	Name plate	M	
Status Information				
OpTmAlm	ABB_a_dSPS	Operation time alarm	E	
OpTmh	ABB_i_dINS	Operation time in hours	E	
OpTmRs	ABB_a_dSPC	Reset operation time to initial value	E	
OpTmWrn	ABB_a_dSPS	Operation time warning	E	

3.1.13 ARASPTR

Table 16: ARASPTR

Attribute name	DATA type	Explanation	M/O/E	Remarks
RBRF class				
RBRF		Average ageing rate calculation for transformers	M	
Data				
Common Logical Node Information				
Mod	ABB_c_dINC	Mode	M	
Beh	ABB_a_dINS	Behaviour	M	
Health	ABB_c_dINS	Health	M	
NamPlt	ABB_d_dLPL	Name plate	M	
Status Information				
AgeRte	ABB_b_dMV	Ageing rate	O	

3.1.14

HSARSPTR

Table 17: HSARSPTR

Attribute name	DATA type	Explanation	M/O/E	Remarks
RBRF class				
RBRF		Hot spot and insulation ageing rate monitoring for transformers	M	
Data				
Common Logical Node Information				
Mod	ABB_c_dINC	Mode	M	
Beh	ABB_a_dINS	Behaviour	M	
Health	ABB_c_dINS	Health	M	
NamPlt	ABB_e_dLPL	Name plate	M	
Status Information				
AgeRte	ABB_b_dMV	Ageing rate	O	
HPTmpClc	ABB_b_dMV	Calculated winding hot spot temperature	O	
HPTmpAlm	ABB_a_dSPS	Winding hot spot temperature alarm	O	
HPTmpWrn	ABB_v2_dSPS	Winding hot spot temperature warning	E	
AgeRteAlm	ABB_v2_dSPS	Alarm signal for average ageing rate over set time period	E	
RsLosLif	ABB_v2_dSPC	Reset loss of life calculation	E	
RsAvg	ABB_v2_dSPC	Reset calculated average ageing rate calculation	E	
LosLifTmYe	ABB_v2_dMV	Loss of life in years	E	
ToTmp	ABB_v2_dMV	Calculated value of top oil temperature	E	
HPToOilGra	ABB_v2_dMV	Rated hot spot to top oil temperature gradient	E	
LoadRsvWrn	ABB_v2_dMV	Percentage load reserve for reaching warning condition	E	
LoadRsvAlm	ABB_v2_dMV	Percentage load reserve for reaching alarm condition	E	

3.2

Extended logical nodes

All extra data that has been added, is marked with E (Extended). These data contain the “dataNs” attribute.

Table 18: *Logical nodes included in the IED*

LN Class	Prefix (default)	LN Type	Description
LLN0		LLN0	General LN0 for LDO
	GNRL	GNRLLN0	General LN0 for other LDs
	RS	RSLLN0	General LN0 for other LDs with general reset
	PHB	PHBLLN0	General LN0 for other LDs
	RESB	RESBLLN0	General LN0 for other LDs
	LSHD	LSHDLLN0	LN0 for under frequency and df/dt based load-shedding
	EPD	EPDLLN0	LN0 for energy calculation function
	DEF	DEFLLN0	LN0 for directional earth-fault protection functions
	DST	DSTLLN0	LN0 for distance protection for distribution networks
	RSY2	RSY2LLN0	LN0 for synchrocheck function
	STT	STTLLN0	LN0 for motor startup supervision protection
	H3EF	H3EFLN0	LN0 for 3 rd harmonic-based stator earth-fault protection
	HSAR	HSARLLN0	LN0 for hot-spot and insulation ageing rate monitoring for transformers
DQ	DQLLN0	LN0 for directional reactive power under voltage protection	
LPHD		LPHD	Physical device information
ATCC	OL	OLATCC	Automatic on-load tap changer controller
CILO	S	SCILO	Interlocking logic interface
CSWI	GNRL	GNRLCSWI	Switch controller
GAPC	ESM	ESMGAPC	Allow emergency start for motor
	MAP	MAPGAPC	Multipurpose analogue protection function
GGIO	CNT	CNTGGIO	Generic counters
	DP	DPGGIO	Generic double point status
	MV	MVGGIO	Generic measured value
	SP	SPGGIO	Generic single point status
	PC	PCGGIO	Pulse counter for energy metering
	VS	VSGGIO	Versatile Switch
	SL	SLGGIO	Selector switch
	SPC8	SPC8GGIO	Single point controllable eight points
Table continues on next page			

LN Class	Prefix (default)	LN Type	Description
MHAI	CM	CMHAI	Current harmonics measurement
	HAEF	HAEFMHAI	Harmonics earth-fault protection measurement
	VPH	VPHMHAI	Voltage (phase-to-earth) harmonics measurement
	VPP	VPPMHAI	Voltage (phase-to-phase) harmonics measurement
MMTR	EPD	EPDMMTR	Energy calculation function
MMXU	CPH	CPHMMXU	Phase current measurement
	DP	DPMMXU	Three-phase directional power protection measurements
	DQ	DQMMXU	Directional reactive power under voltage protection measurement
	EPD	EPDMMXU	Three phase power demand
	PWR	PWRMMXU	Power monitoring function with P, Q, S, power factor
	RESC	RESCMMXU	Residual current measurement
	RESV	RESVMMXU	Residual voltage measurement, true RMS value
	UEX	UEXMMXU	Under excitation protection for synchronous machines, measurements
	UZ	UZMMXU	Three-phase under impedance protection phase-to-phase impedance measurements
	VPH	VPHMMXU	Phase voltage measurement
	VPP	VPPMMXU	Phase-to-phase voltage measurement
	VRES	VRESMMXU	Residual voltage measurement, fundamental component RMS value
	W	WMMXU	MMXU for Wattmetric directional earth fault protection (for residual power measurement)
MSQI	CS	CSMSQI	Sequence current measurement, positive and negative sequence values
	VS	VSMSQI	Sequence voltage measurement, positive and negative sequence values
Table continues on next page			

LN Class	Prefix (default)	LN Type	Description
MSTA	DST1	DST1MSTA	Recording data bank 1 for DSTPDIS zones
	DST	DSTMSTA	Recording data bank >1 for DSTPDIS zones
	EAD1	EAD1MSTA	Recording data bank 1 for EFPADM
	EAD	EADMSTA	Recording data bank >1 for EFPADM
	F1	F1MSTA	Recording data bank 1 for SCEFRFLO
	F	FMSTA	Recording data bank >1 for SCEFRFLO
	GFC1	GFC1MSTA	Recording data bank 1 for DSTPDIS GFC
	GFC	GFCMSTA	Recording data bank >1 for DSTPDIS GFC
	QVU1	QVU1MSTA	Recording data bank 1 for VSQVUB
	QVU	QVUMSTA	Recording data bank >1 for VSQVUB
	QVV1	QVV1MSTA	Recording data bank 1 for PHQVVR
	QVV	QVVMSTA	Recording data bank >1 for PHQVVR
PDIF	M	MPDIF	Motor Differential Protection
	MHZ	MHZPDIF	High-impedance or flux-balance based differential protection for generators and motors
	HREF	HREFPDIF	Restricted EF protection based on high impedance principle
	LREF	LREFPDIF	Stabilised restricted earth-fault protection (low impedance principle)
	TR2R	TR2PDIF	Transformer differential protection for two winding transformers
PDIS	DST	DSTPDIS	Zone for distribution distance protection
	GFC	GFCPDIS	General fault criteria for distribution distance protection
	UEX	UEXPDIS	Under excitation protection for synchronous machines
	UZ	UZPDIS	Three-phase under impedance protection for synchronous machines
PDOP	DP	DPPDOP	Three-phase directional overpower protection
	DQ	DQPDOP	Reactive over power part of reactive power under voltage protection
PDUP	DP	DPPDUP	Three-phase directional underpower protection
PFRC	DA	DAPFRC	Rate of change of frequency
	LSHD	LSHDPFRC	Load-shedding, frequency rate of change
Table continues on next page			

LN Class	Prefix (default)	LN Type	Description
PHAR	GNR1	GNR1PHAR	General harmonic restraint with general start only
	GNR2	GNR2PHAR	General harmonic restraint with phase starts
	INR	INRPHAR	Three-phase inrush detector
	TR5H	TR5HPHAR	5th harmonic restraint for transformer differential protection
PMRI	STT	STTPMRI	Motor restart inhibition and stall protection
PMSS	STT	STTPMSS	Motor startup supervision, start time and cumulative start time
PPAM	VVS	VVSPAM	Voltage vector shift protection
PSCH	RESC	RESCPSCH	Scheme communication logic for residual overcurrent protection
	RCRW	RCRWPSCH	Current reversal and weak-end infeed logic for residual over-current protection
	DSOC	DSOCPSCH	Scheme communication logic for distance or overcurrent
	CRW	CRWPSCH	Current reversal and weak-end infeed logic for distance protection
PSDE	W	WPSDE	Wattmetric directional earth fault protection
	MFAD	MFADPSDE	Multi-frequency admittance protection
PTEF	INTR	INTRPTEF	Intermittent earth-fault protection
Table continues on next page			

LN Class	Prefix (default)	LN Type	Description
PTOC	DEF	DEFPTOC	Directional earth-fault protection, high or low stage
	DPH	DPHPTOC	Directional phase overcurrent, high or low stage
	EFH	EFHPTOC	Non-directional earth-fault protection, high stage
	EFI	EFIPTOC	Non-directional earth-fault protection, instantaneous stage
	EFL	EFLPTOC	Non-directional earth-fault protection, low stage
	HAEF	HAEFPTOC	Harmonics earth-fault protection
	JAM	JAMPTOC	Motor running time jam protection
	MRE1	MRE1PTOC	Rotor earth fault protection, alarm state
	MRE2	MRE2PTOC	Rotor earth fault protection, operate stage
	MNS	MNSPTOC	Negative-phase-sequence time overcurrent protection for machines
	NS	NSPTOC	Negative-sequence overcurrent protection
	PDNS	PDNSPTOC	Phase discontinuity protection based on I2/I1 ratio
	PHH	PHHPTOC	Non-directional phase overcurrent, high stage
	PHI	PHIPTOC	Non-directional phase overcurrent, instantaneous stage
	PHL	PHLPTOC	Non-directional phase overcurrent, low stage
PREV	PREVPTOC	Motor phase reversal protection	
PTOF	DA	DAPTOF	Overfrequency protection
PTOV	H3EF	H3EFPTOV	Third harmonic based differential overvoltage protection
	NS	NSPTOV	Negative-sequence overvoltage protection
	PS	PSPTOV	Positive-sequence overvoltage protection
	PH	PHPTOV	Three phase overvoltage protection
	ROV	ROVPTOV	Residual overvoltage protection
PTRC	H3EF	H3EFPTRC	Third Harmonic based stator earth fault, Trip logic
	LSHD	LSHDPTRC	Load-shedding, trip logic
	TRP	TRPPTRC	Trip conditioning logic
PTTR	T1	T1PTTR	Thermal overload 1 time constants
	T2	T2PTTR	Thermal overload 2 time constants for transformers
	M	MPTR	Thermal overload protection for motors
PTUC	LOFL	LOFLPTUC	Loss of load protection
Table continues on next page			

LN Class	Prefix (default)	LN Type	Description
PTUF	DA	DAPTUF	Underfrequency protection
	LSHD	LSHDPTUF	Load-shedding, under frequency
PTUV	DQ	DQPTUV	Directional reactive power under voltage protection
	H3EF	H3EFPTUV	Third harmonic undervoltage protection
	LVRT	LVRTPTUV	Low voltage ride through protection function
	PS	PSPTUV	Positive-sequence undervoltage protection
	PH	PHPTUV	Three phase undervoltage protection
PHPVOC	PH	PHPVOC	Voltage dependent overcurrent protection
PVPH	OE	OEPVPH	Overexcitation protection
RDIR	DEF	DEFRDIR	Directional element used for directional earth fault protection.
	DPH	DPHRDIR	Directional element used for directional overcurrent protection.
	DST	DSTRDIR	Directional element used for all zones in distribution distance protection
	GFC	GFCRDIR	Directional element used for general fault criteria for distribution distance protection
	W	WRDIR	Directional element used for wattmetric directional earth fault protection.
	MFAD	MFADRDIR	Directional element used for Multi-frequency admittance protection
RDRE	DR	DRRDRE	Disturbance recorder
RBRF	CCB	CCBRBRF	Breaker failure protection
RFLO	SCEF	SCEFRFLO	Fault locator
RREC	DA	DARREC	Autorecloser (distribution networks)
RSYN	AUT2	AUT2RSYN	Auto control of synchrocheck and energizing check, single circuit breaker, 11/2 or double circuit breaker, for automatic purpose
	MAN2	MAN2RSYN	Manual control of synchrocheck and energizing check, single circuit breaker, 11/2 or double circuit breaker, for manual purpose
	SYN1	SYN1RSYN	Auto control of synchrocheck and energizing check, single circuit breaker, 11/2 or double circuit breaker
XCBR	DA	DAXCBR	Circuit breaker
XSWI	DA	DAXSWI	Circuit switch
YLTC	OL	OLYLTC	On-load tap changer
ZBAT	SPVN	SPVNZBAT	Station battery supervision

3.2.1 LLN0

Table 19: LLN0

Attribute name	DATA type	Explanation	M/O/E	Remarks
LLN0 class				
LLN0		General LN0 for LD0		
Data				
Common Logical Node Information				
Mod	ABB_a_dINC	Mode	M	
Beh	ABB_a_dINS	Behaviour	M	
Health	ABB_c_dINS	Health	M	
NamPlt	ABB_In0_dLPL	Name plate	M	
Status Information				

3.2.2 GNRLLN0

Table 20: GNRLLN0

Attribute name	DATA type	Explanation	M/O/E	Remarks
LLN0 class				
LLN0		General LN0 for other LDs		
Data				
Common Logical Node Information				
Mod	ABB_a_dINC	Mode	M	
Beh	ABB_a_dINS	Behaviour	M	
Health	ABB_c_dINS	Health	M	
NamPlt	ABB_In0_dLPL	Name plate	M	
Status Information				

3.2.3 RSLN0

Table 21: RSLN0

Attribute name	DATA type	Explanation	M/O/E	Remarks
LLN0 class				
LLN0		General LN0 for other LDs with general reset		
Data				
Common Logical Node Information				
Mod	ABB_a_dINC	Mode	M	
Table continues on next page				

Attribute name	DATA type	Explanation	M/O/E	Remarks
Beh	ABB_a_dINS	Behaviour	M	
Health	ABB_c_dINS	Health	M	
NamPlt	ABB_In0_dLPL	Name plate	M	
Status Information				
Rs	ABB_v1_dSPC	General reset	E	Controllable

3.2.4

PHBLLN0

Table 22: PHBLLN0

Attribute name	DATA type	Explanation	M/O/E	Remarks
LLN0 class				
LLN0		LLN0 with phase base value selector	M	
Data				
Common Logical Node Information				
Mod	ABB_a_dINC	Mode	M	
Beh	ABB_a_dINS	Behaviour	M	
Health	ABB_c_dINS	Health	M	
NamPlt	ABB_In0_dLPL	Name plate	M	
Status Information				

3.2.5

RESBLLN0

Table 23: RESBLLN0

Attribute name	DATA type	Explanation	M/O/E	Remarks
LLN0 class				
LLN0		General LN0 for other LDs	M	
Data				
Common Logical Node Information				
Mod	ABB_a_dINC	Mode	M	
Beh	ABB_a_dINS	Behaviour	M	
Health	ABB_c_dINS	Health	M	
NamPlt	ABB_In0_dLPL	Name plate	M	
Status Information				

3.2.6 LSHDLLN0

Table 24: LSHDLLN0

Attribute name	DATA type	Explanation	M/O/E	Remarks
LLN0 class				
LLN0		LN0 for under frequency and df/dt based load-shedding		
Data				
Common Logical Node Information				
Mod	ABB_a_dINC	Mode	M	
Beh	ABB_a_dINS	Behaviour	M	
Health	ABB_c_dINS	Health	M	
NamPit	ABB_In0_dLPL	Name plate	M	
Status Information				
BlkV	ABB_a_dSPS	Blocked because of voltage	E	

3.2.7 EPDLLN0

Table 25: EPDLLN0

Attribute name	DATA type	Explanation	M/O/E	Remarks
LLN0 class				
LLN0		LN0 for eergy calculation function		
Data				
Common Logical Node Information				
Mod	ABB_a_dINC	Mode	M	
Beh	ABB_a_dINS	Behaviour	M	
Health	ABB_c_dINS	Health	M	
NamPit	ABB_In0_dLPL	Name plate	M	
Status Information				

3.2.8 DEFLLN0

Table 26: DEFLLN0

Attribute name	DATA type	Explanation	M/O/E	Remarks
LLN0 class				
LLN0		LN0 for directional earth-fault protection functions		
Data				
Common Logical Node Information				
Table continues on next page				

Attribute name	DATA type	Explanation	M/O/E	Remarks
Mod	ABB_a_dINC	Mode	M	
Beh	ABB_a_dINS	Behaviour	M	
Health	ABB_c_dINS	Health	M	
NamPlt	ABB_In0_dLPL	Name plate	M	
Status Information				

3.2.9

DSTLLN0

Table 27: DSTLLN0

Attribute name	DATA type	Explanation	M/O/E	Remarks
LLN0 class				
LLN0		LNO for distance protection for distribution networks		
Data				
Common Logical Node Information				
Mod	ABB_a_dINC	Mode	M	
Beh	ABB_a_dINS	Behaviour	M	
Health	ABB_c_dINS	Health	M	
NamPlt	ABB_In0_dLPL	Name plate	M	
Status Information				
Rs	ABB_v1_dSPC	General reset	E	Controllable

3.2.10

DQLLN0

Table 28: DQLLN0

Attribute name	DATA type	Explanation	M/O/E	Remarks
LLN0 class				
LLN0		LNO for directional reactive power under voltage protection		
Data				
Common Logical Node Information				
Mod	ABB_a_dINC	Mode	M	
Beh	ABB_a_dINS	Behaviour	M	
Health	ABB_c_dINS	Health	M	
NamPlt	ABB_In0_dLPL	Name plate	M	
Status Information				

3.2.11 H3EFLLN0

Table 29: H3EFLLN0

Attribute name	DATA type	Explanation	M/O/E	Remarks
LLN0 class				
LLN0		LN0 for 3rd harmonic based stator earth fault protection		
Data				
Common Logical Node Information				
Mod	ABB_a_dINC	Mode	M	
Beh	ABB_a_dINS	Behaviour	M	
Health	ABB_c_dINS	Health	M	
NamPit	ABB_In0_dLPL	Name plate	M	
Status Information				

3.2.12 HSARLLN0

Table 30: HSARLLN0

Attribute name	DATA type	Explanation	M/O/E	Remarks
LLN0 class				
LLN0		LN0 for hot spot and insulation ageing rate monitoring for transformers		
Data				
Common Logical Node Information				
Mod	ABB_a_dINC	Mode	M	
Beh	ABB_a_dINS	Behaviour	M	
Health	ABB_c_dINS	Health	M	
NamPit	ABB_In0_dLPL	Name plate	M	
Status Information				

3.2.13 RSY2LLN0

Table 31: RSY2LLN0

Attribute name	DATA type	Explanation	M/O/E	Remarks
LLN0 class				
LLN0		LN0 for synchrocheck function		
Data				
Common Logical Node Information				
Mod	ABB_a_dINC	Mode	M	
Beh	ABB_a_dINS	Behaviour	M	
Health	ABB_c_dINS	Health	M	
NamPlt	ABB_In0_dLPL	Name plate	M	
Status Information				
Bus1Sel	ABB_v1_dSPS	Bus1 selected	E	
Bus2Sel	ABB_v1_dSPS	Bus2 selected	E	
Lin1Sel	ABB_v1_dSPS	Line1 selected	E	
Lin2Sel	ABB_v1_dSPS	Line2 selected	E	
SelFuFail	ABB_v1_dSPS	Selected voltage transformer fuse failed	E	
TestEnOK	ABB_v1_dSPS	Energizing check OK test output	E	
VInBnd	ABB_v1_dSPS	Voltage in band	E	
VInd	ABB_a_dSPS	Voltage difference out of limit	E	

3.2.14 STTLLN0

Table 32: STTLLN0

Attribute name	DATA type	Explanation	M/O/E	Remarks
LLN0 class				
LLN0		LN0 for motor startup supervision protection		
Data				
Common Logical Node Information				
Mod	ABB_a_dINC	Mode	M	
Beh	ABB_a_dINS	Behaviour	M	
Health	ABB_c_dINS	Health	M	
NamPlt	ABB_In0_dLPL	Name plate	M	
Status Information				

3.2.15 LPHD Revision 1

Table 33: LPHD Revision 1

Attribute name	DATA type	Explanation	M/O/E	Remarks
LPHD class				
LPHD		Physical device information	M	
Data				
Common Logical Node Information				
PhyNam	ABB_a_dDPL	Physical device name plate	M	
PhyHealth	ABB_c_dINS	Physical device health	M	
Status Information				
Proxy	ABB_b_dSPS	Indicates if this LN ia a proxy	M	

3.2.16 OLATCC

Table 34: OLATCC

Attribute name	DATA type	Explanation	M/O/E	Remarks
ATCC class				
ATCC		Automatic on-load tap changer controller	M	
Data				
Common Logical Node Information				
Mod	ABB_c_dINC	Mode	M	Status-only
Beh	ABB_a_dINS	Behaviour	M	
Health	ABB_c_dINS	Health	M	
NamPlt	ABB_d_dLPL	Name plate	M	
Status Information				
TapChg	ABB_c_dBSC	Change reactive power	C	Controllable
CtlV	ABB_b_dMV	Control voltage	M	
Loc	ABB_a_dSPS	Local operation	M	
ParOp	ABB_c_dSPC	Parallel Independent operation	M	Status-only
Auto	ABB_a_dSPS	Automatic, maual operation	O	
CircA	ABB_b_dMV	Circulating current	O	
LodA	ABB_b_dMV	Load current	O	
LTCBlk	ABB_c_dSPC	Block (Inhibit) Automatic Control of LTC	O	Status-only
OpCntRs	ABB_d_dINC	Operation counter resettable	O	Status-only
VRed1	ABB_c_dSPC	Voltage reduction step 1	O	Status-only
AlmReas	ABB_v7_dINS	Status and reason for alarm	E	
ALod	ABB_v1_dCMV	Current from own transformer	E	
Table continues on next page				

Attribute name	DATA type	Explanation	M/O/E	Remarks
AngVAPhA	ABB_v2_dMV	Measured angle value between phase A voltage and current	E	
BlkSt	ABB_v1_dINS	Bit-coded output showing the blocking status for the next operation	E	
ClcLDC	ABB_v2_dMV	Calculated line drop compensation	E	
CtlDIOn	ABB_v8_dINS	Timer T1, T2 or fast lower timer active	E	
CtlOpModSt	ABB_v7_dINS	The acting operation mode of the function block	E	
CtlVDif	ABB_v2_dMV	Voltage difference between Measured voltage - Control Voltage: $U_m - U_p$	E	
EndPosL	ABB_a_dSPS	End position lower reached	E	
EndPosR	ABB_a_dSPS	End position raise reached	E	
ErrParTra	ABB_v1_dSPS	Parallel failure detected	E	
FllwFlt	ABB_v7_dINS	Failed followers	E	
LTCBlkAHi	ABB_v1_dSPS	Indication of load current blocking	E	
LTCBlkCirA	ABB_v1_dSPS	Indication of high circulating current blocking	E	
LTCBlkSt	ABB_v1_dSPS	Indication of external blocking	E	
LTCBlkVLo	ABB_v1_dSPS	Indication of under voltage blocking	E	
LTCRnbk	ABB_v1_dSPS	Indication of runback raise voltage blocking	E	
NumParUnit	ABB_v7_dINS	Parallel units in MCC	E	
OpTmhNum	ABB_v1_dINS	Number of controls for own tap changer during last hour	E	
TapOpErr	ABB_v1_dSPS	Alarm status	E	
TapOpFllw1	ABB_v7_dINS	Change Follower 1 Tap Position command from master (stop, lower, higher)	E	
TapOpFllw2	ABB_v7_dINS	Change Follower 2 Tap Position command from master (stop, lower, higher)	E	
TapOpFllw3	ABB_v7_dINS	Change Follower 3 Tap Position command from master (stop, lower, higher)	E	
TapOpL	ABB_v2_dSPS	Lower command for own transformer	E	
TapOpR	ABB_v2_dSPS	Raise command for own transformer	E	
VMeas	ABB_v2_dMV	Phase-to-phase voltage , average filtered	E	

3.2.17 SCILO Revision 1

Table 35: SCILO Revision 1

Attribute name	DATA type	Explanation	M/O/E	Remarks
CILO class				
CILO		Interlocking		
Data				
Common Logical Node Information				
Mod	ABB_a_dINC	Mode	M	
Beh	ABB_a_dINS	Behaviour	M	
Health	ABB_c_dINS	Health	M	
NamPlt	ABB_a_dLPL	Name plate	M	
Status Information				
EnaOpn	ABB_a_dSPS	Enable Open	M	
EnaCls	ABB_a_dSPS	Enable Close	M	

3.2.18 GNRLCSWI

Table 36: GNRLCSWI

Attribute name	DATA type	Explanation	M/O/E	Remarks
CSWI class				
CSWI		Switch control		
Data				
Common Logical Node Information				
Mod	ABB_a_dINC	Mode	M	
Beh	ABB_a_dINS	Behaviour	M	
Health	ABB_c_dINS	Health	M	
NamPlt	ABB_a_dLPL	Name plate	M	
Status Information				
Pos	ABB_a_dDPC	Switch, general	M	Controllable
OpOpn	ABB_b_dACT	Operation "Open Switch"	O	
OpCls	ABB_b_dACT	Operation "Close Switch"	O	
BlkCmd	ABB_v1_dSPC	Block of commands	E	Controllable

3.2.19

ESMGAPC

Table 37: *ESMGAPC*

Attribute name	DATA type	Explanation	M/O/E	Remarks
GAPC class				
GAPC		Allow emergency start for motor	M	
Data				
Common Logical Node Information				
Mod	ABB_a_dINC	Mode	M	
Beh	ABB_a_dINS	Behaviour	M	
Health	ABB_c_dINS	Health	M	
NamPlt	ABB_a_dLPL	Name plate	M	
Status Information				
Str	ABB_d_dACD	Start	M	
Op	ABB_b_dACT	Operate	M	

3.2.20

MAPGAPC

Table 38: *MAPGAPC*

Attribute name	DATA type	Explanation	M/O/E	Remarks
GAPC class				
GAPC		Multipurpose analogue protection function	M	
Data				
Common Logical Node Information				
Mod	ABB_a_dINC	Mode	M	
Beh	ABB_a_dINS	Behaviour	M	
Health	ABB_c_dINS	Health	M	
NamPlt	ABB_d_dLPL	Nam plate	M	
Status Information				
Op	ABB_b_dACT	Operate	M	
Str	ABB_d_dACD	Start	M	
StrDur	ABB_v2_dMV	Start duration	E	

3.2.21 CNTGGIO Revision 1

Table 39: CNTGGIO Revision 1

Attribute name	DATA type	Explanation	M/O/E	Remarks
GGIO class				
GGIO		Event counters		
Data				
Common Logical Node Information				
Mod	ABB_a_dINC	Mode	M	
Beh	ABB_a_dINS	Behaviour	M	
Health	ABB_c_dINS	Health	M	
NamPlt	ABB_a_dLPL	Name plate	M	
Status Information				
RsCnt	ABB_v1_dSPC	Reset counters	E	Controllable
Cnt1	ABB_v1_dBCR	Output of counter 1	E	Data type for counter value is INT32 (INT128 is not supported)
Cnt2	ABB_v1_dBCR	Output of counter 2	E	Data type for counter value is INT32 (INT128 is not supported)
Cnt3	ABB_v1_dBCR	Output of counter 3	E	Data type for counter value is INT32 (INT128 is not supported)
Cnt4	ABB_v1_dBCR	Output of counter 4	E	Data type for counter value is INT32 (INT128 is not supported)
Cnt5	ABB_v1_dBCR	Output of counter 5	E	Data type for counter value is INT32 (INT128 is not supported)
Cnt6	ABB_v1_dBCR	Output of counter 6	E	Data type for counter value is INT32 (INT128 is not supported)

3.2.22 DPGGIO Revision 1

Table 40: DPGGIO Revision 1

Attribute name	DATA type	Explanation	M/O/E	Remarks
GGIO class				
GGIO		Generic double point status		
Data				
Common Logical Node Information				
Mod	ABB_a_dINC	Mode	M	
Beh	ABB_a_dINS	Behaviour	M	
Health	ABB_c_dINS	Health	M	
NamPlt	ABB_a_dLPL	Name plate	M	
Status Information				
DPCSO	ABB_b_dDPC	General position indication	O	Status-only

3.2.23 MVGGIO Revision 1

Table 41: MVGGIO Revision 1

Attribute name	DATA type	Explanation	M/O/E	Remarks
GGIO class				
GGIO		Generic measured value		
Data				
Common Logical Node Information				
Mod	ABB_a_dINC	Mode	M	
Beh	ABB_a_dINS	Behaviour	M	
Health	ABB_c_dINS	Health	M	
NamPlt	ABB_a_dLPL	Name plate	M	
Status Information				
AnIn	ABB_a_dMV	Measured value	O	

3.2.24 SPGGIO Revision 1

Table 42: SPGGIO Revision 1

Attribute name	DATA type	Explanation	M/O/E	Remarks
GGIO class				
GGIO		Single point control		
Data				
Common Logical Node Information				
Mod	ABB_a_dINC	Mode	M	
Beh	ABB_a_dINS	Behaviour	M	
Table continues on next page				

Attribute name	DATA type	Explanation	M/O/E	Remarks
Health	ABB_c_dINS	Health	M	
NamPit	ABB_a_dLPL	Name plate	M	
Status Information				
Ind	ABB_c_dSPS	Output status	O	

3.2.25

PCGGIO Revision 1

Table 43: PCGGIO Revision 1

Attribute name	DATA type	Explanation	M/O/E	Remarks
GGIO class Type				
GGIO		Pulse counter		
Data				
Common Logical Node Information				
Mod	ABB_a_dINC	Mode	M	
Beh	ABB_a_dINS	Behaviour	M	
Health	ABB_c_dINS	Health	M	
NamPit	ABB_a_dLPL	Name plate	M	
Status Information				
AnIn	ABB_b_dMV	Scaled measured value since the last reset	O	
TotVal	ABB_v2_dBCR	Measured value since last reset	E	Data type for counter value is INT32 (INT128 is not supported)
ValUpd	ABB_v1_dSPS	A new pulse counter value is generated	E	
IcpCyc	ABB_v1_dSPS	The reported value does not compromise a complete cycle	E	

3.2.26

VSGGIO Revision 1

Table 44: VSGGIO Revision 1

Attribute name	DATA type	Explanation	M/O/E	Remarks
GGIO class				
GGIO		Versatile switch		
Data				
Common Logical Node Information				
Mod	ABB_a_dINC	Mode	M	
Beh	ABB_a_dINS	Behaviour	M	
Health	ABB_c_dINS	Health	M	
Table continues on next page				

Attribute name	DATA type	Explanation	M/O/E	Remarks
NamPlt	ABB_a_dLPL	Name plate	M	
Status Information				
DPCSO	ABB_d_dDPC	Double point controllable status output	O	Controllable

3.2.27

SLGGIO Revision 3

Table 45: SLGGIO Revision 3

Attribute name	DATA type	Explanation	M/O/E	Remarks
GGIO class				
GGIO		Selector switch	M	
Data				
Common Logical Node Information				
Mod	ABB_a_dINC	Mode	M	
Beh	ABB_a_dINS	Behaviour	M	
Health	ABB_c_dINS	Health	M	
NamPlt	ABB_a_dLPL	Name plate	M	
Status Information				
IntIn	ABB_b_dINS	Integer status input	O	
SPCCO	ABB_v2_dSPC	Raise/Lower Commands	E	Controllable
SwPosC1	ABB_v2_dISC	Integer step controllable output	E	Controllable

3.2.28

SPC8GGIO Revision 1

Table 46: SPC8GGIO Revision

Attribute name	DATA type	Explanation	M/O/E	Remarks
GGIO class				
GGIO		Single Point Controllable 8 points	M	
Data				
Common Logical Node Information				
Mod	ABB_a_dINC	Mode	M	
Beh	ABB_a_dINS	Behaviour	M	
Health	ABB_c_dINS	Health	M	
NamPlt	ABB_a_dLPL	Name plate	M	
Status Information				
SPCSO1	ABB_v2_dSPC	Single Point Controllable 1	E	Controllable
SPCSO2	ABB_v2_dSPC	Single Point Controllable 2	E	Controllable
SPCSO3	ABB_v2_dSPC	Single Point Controllable 3	E	Controllable
Table continues on next page				

Attribute name	DATA type	Explanation	M/O/E	Remarks
SPCSO4	ABB_v2_dSPC	Single Point Controllable 4	E	Controllable
SPCSO5	ABB_v2_dSPC	Single Point Controllable 5	E	Controllable
SPCSO6	ABB_v2_dSPC	Single Point Controllable 6	E	Controllable
SPCSO7	ABB_v2_dSPC	Single Point Controllable 7	E	Controllable
SPCSO8	ABB_v2_dSPC	Single Point Controllable 8	E	Controllable

3.2.29

CMHAI

Table 47: CMHAI

Attribute name	DATA type	Explanation	M/O/E	Remarks
MHAI class				
MHAI		Current harmonics measurement	M	
Data				
Common Logical Node Information				
Mod	ABB_a_dINC	Mode	M	
Beh	ABB_a_dINS	Behaviour	M	
Health	ABB_c_dINS	Health	M	
NamPlt	ABB_d_dLPL	Name plate	M	
Status Information				
Hz	ABB_b_dMV	Basic frequency	C	
TddA	ABB_f_dWYE	Current Total Demand Distortion per IEEE 519	O	
ThdA	ABB_f_dWYE	Current Total Harmonic or Interharmonic Distortion (different methods)	O	
AlmHiHNum	ABB_v4_dINS	Number of the highest harmonic that exceeds its alarm limit	E	
HiATdd	ABB_v1_dSPS	Three seconds mean current TDD is above limit	E	
HiAThd	ABB_v1_dSPS	Three seconds mean current THD is above limit	E	
HiHA	ABB_v1_dSPS	Three seconds mean current harmonic is above limit	E	
MaxHAVal1	ABB_v2_dMV	Maximum 1st harmonic 3-second mean RMS value during alarm	E	
MaxHAVal10	ABB_v2_dMV	Maximum 10th harmonic 3-second mean RMS value during alarm	E	
MaxHAVal11	ABB_v2_dMV	Maximum 11th harmonic 3-second mean RMS value during alarm	E	
Table continues on next page				

Attribute name	DATA type	Explanation	M/O/E	Remarks
MaxHVal12	ABB_v2_dMV	Maximum 12th harmonic 3-second mean RMS value during alarm	E	
MaxHVal13	ABB_v2_dMV	Maximum 13th harmonic 3-second mean RMS value during alarm	E	
MaxHVal14	ABB_v2_dMV	Maximum 14th harmonic 3-second mean RMS value during alarm	E	
MaxHVal15	ABB_v2_dMV	Maximum 15th harmonic 3-second mean RMS value during alarm	E	
MaxHVal16	ABB_v2_dMV	Maximum 16th harmonic 3-second mean RMS value during alarm	E	
MaxHVal17	ABB_v2_dMV	Maximum 17th harmonic 3-second mean RMS value during alarm	E	
MaxHVal18	ABB_v2_dMV	Maximum 18th harmonic 3-second mean RMS value during alarm	E	
MaxHVal19	ABB_v2_dMV	Maximum 19th harmonic 3-second mean RMS value during alarm	E	
MaxHVal2	ABB_v2_dMV	Maximum 2nd harmonic 3-second mean RMS value during alarm	E	
MaxHVal20	ABB_v2_dMV	Maximum 20th harmonic 3-second mean RMS value during alarm	E	
MaxHVal3	ABB_v2_dMV	Maximum 3rd harmonic 3-second mean RMS value during alarm	E	
MaxHVal4	ABB_v2_dMV	Maximum 4th harmonic 3-second mean RMS value during alarm	E	
MaxHVal5	ABB_v2_dMV	Maximum 5th harmonic 3-second mean RMS value during alarm	E	
MaxHVal6	ABB_v2_dMV	Maximum 6th harmonic 3-second mean RMS value during alarm	E	
MaxHVal7	ABB_v2_dMV	Maximum 7th harmonic 3-second mean RMS value during alarm	E	
MaxHVal8	ABB_v2_dMV	Maximum 8th harmonic 3-second mean RMS value during alarm	E	
MaxHVal9	ABB_v2_dMV	Maximum 9th harmonic 3-second mean RMS value during alarm	E	
Table continues on next page				

Attribute name	DATA type	Explanation	M/O/E	Remarks
MaxTddAVal	ABB_v2_dMV	Maximum TDD 3-second mean RMS value during alarm	E	
MaxThdAVal	ABB_v2_dMV	Maximum THD 3-second mean RMS value during alarm	E	
PhSvSt	ABB_v4_dINS	Monitored phase	E	

3.2.30

HAEFMHAI

Table 48: HAEFMHAI

Attribute name	DATA type	Explanation	M/O/E	Remarks
MHAI class				
MHAI		Harmonics earth-fault protection measurement	M	
Data				
Common Logical Node Information				
Mod	ABB_c_dINC	Mode	M	
Beh	ABB_a_dINS	Behaviour	M	
Health	ABB_c_dINS	Health	M	
NamPit	ABB_d_dLPL	Name plate	M	
Status Information				
Hz	ABB_b_dMV	Basic frequency	C	
HRmsA	ABB_d_dWYE	Current RMS Harmonic or Inter harmonics (un-normalized Total harmonic distortion, Thd)	O	

3.2.31

VPHMHAI

Table 49: VPHMHAI

Attribute name	DATA type	Explanation	M/O/E	Remarks
MHAI class				
MHAI		Voltage (phase-to-earth) harmonics measurement	M	
Data				
Common Logical Node Information				
Mod	ABB_a_dINC	Mode	M	
Beh	ABB_a_dINS	Behaviour	M	
Health	ABB_c_dINS	Health	M	
NamPit	ABB_d_dLPL	Name plate	M	
Status Information				
Hz	ABB_b_dMV	Basic frequency	C	
Table continues on next page				

Attribute name	DATA type	Explanation	M/O/E	Remarks
ThdPhV	ABB_f_dWYE	Voltage Total Harmonic or Interharmonic Distortion (different methods) for phase to ground	O	
AlmHiHNum	ABB_v4_dINS	Number of the highest harmonic that exceeds its alarm limit	E	
HiHV	ABB_v1_dSPS	Three seconds mean voltage harmonic is above limit	E	
HiVTdd	ABB_v1_dSPS	Three seconds mean voltage TDD is above limit	E	
HiVThd	ABB_v1_dSPS	Three seconds mean voltage THD is above limit	E	
MaxHVVal1	ABB_v2_dMV	Maximum 1st harmonic 3-second mean RMS value during alarm	E	
MaxHVVal10	ABB_v2_dMV	Maximum 10th harmonic 3-second mean RMS value during alarm	E	
MaxHVVal11	ABB_v2_dMV	Maximum 11th harmonic 3-second mean RMS value during alarm	E	
MaxHVVal12	ABB_v2_dMV	Maximum 12th harmonic 3-second mean RMS value during alarm	E	
MaxHVVal13	ABB_v2_dMV	Maximum 13th harmonic 3-second mean RMS value during alarm	E	
MaxHVVal14	ABB_v2_dMV	Maximum 14th harmonic 3-second mean RMS value during alarm	E	
MaxHVVal15	ABB_v2_dMV	Maximum 15th harmonic 3-second mean RMS value during alarm	E	
MaxHVVal16	ABB_v2_dMV	Maximum 16th harmonic 3-second mean RMS value during alarm	E	
MaxHVVal17	ABB_v2_dMV	Maximum 17th harmonic 3-second mean RMS value during alarm	E	
MaxHVVal18	ABB_v2_dMV	Maximum 18th harmonic 3-second mean RMS value during alarm	E	
MaxHVVal19	ABB_v2_dMV	Maximum 19th harmonic 3-second mean RMS value during alarm	E	
MaxHVVal2	ABB_v2_dMV	Maximum 2nd harmonic 3-second mean RMS value during alarm	E	
MaxHVVal20	ABB_v2_dMV	Maximum 20th harmonic 3-second mean RMS value during alarm	E	
Table continues on next page				

Attribute name	DATA type	Explanation	M/O/E	Remarks
MaxHVVal3	ABB_v2_dMV	Maximum 3rd harmonic 3-second mean RMS value during alarm	E	
MaxHVVal4	ABB_v2_dMV	Maximum 4th harmonic 3-second mean RMS value during alarm	E	
MaxHVVal5	ABB_v2_dMV	Maximum 5th harmonic 3-second mean RMS value during alarm	E	
MaxHVVal6	ABB_v2_dMV	Maximum 6th harmonic 3-second mean RMS value during alarm	E	
MaxHVVal7	ABB_v2_dMV	Maximum 7th harmonic 3-second mean RMS value during alarm	E	
MaxHVVal8	ABB_v2_dMV	Maximum 8th harmonic 3-second mean RMS value during alarm	E	
MaxHVVal9	ABB_v2_dMV	Maximum 9th harmonic 3-second mean RMS value during alarm	E	
MaxTddVVal	ABB_v2_dMV	Maximum TDD 3-second mean RMS value during alarm	E	
MaxThdVVal	ABB_v2_dMV	Maximum THD 3-second mean RMS value during alarm	E	
PhSvSt	ABB_v4_dINS	Monitored phase	E	
TddPhV	ABB_v3_dWYE	Voltage Total Demand Distortion	E	

3.2.32

VPPMHAI

Table 50: VPPMHAI

Attribute name	DATA type	Explanation	M/O/E	Remarks
MHAI class				
MHAI		Voltage (phase-to-phase) harmonics measurement	M	
Data				
Common Logical Node Information				
Mod	ABB_a_dINC	Mode	M	
Beh	ABB_a_dINS	Behaviour	M	
Health	ABB_c_dINS	Health	M	
NamPlt	ABB_d_dLPL	Name plate	M	
Status Information				
Hz	ABB_b_dMV	Basic frequency	C	
Table continues on next page				

Attribute name	DATA type	Explanation	M/O/E	Remarks
ThdPPV	ABB_c_dDEL	Voltage Total Harmonic or Interharmonic Distortion (different methods) for phase to phase	O	
AlmHiHNum	ABB_v4_dINS	Number of the highest harmonic that exceeds its alarm limit	E	
HiHV	ABB_v1_dSPS	Three seconds mean voltage harmonic is above limit	E	
HiVTdd	ABB_v1_dSPS	Three seconds mean voltage TDD is above limit	E	
HiVThd	ABB_v1_dSPS	Three seconds mean voltage THD is above limit	E	
MaxHVVal1	ABB_v2_dMV	Maximum 1st harmonic 3-second mean RMS value during alarm	E	
MaxHVVal10	ABB_v2_dMV	Maximum 10th harmonic 3-second mean RMS value during alarm	E	
MaxHVVal11	ABB_v2_dMV	Maximum 11th harmonic 3-second mean RMS value during alarm	E	
MaxHVVal12	ABB_v2_dMV	Maximum 12th harmonic 3-second mean RMS value during alarm	E	
MaxHVVal13	ABB_v2_dMV	Maximum 13th harmonic 3-second mean RMS value during alarm	E	
MaxHVVal14	ABB_v2_dMV	Maximum 14th harmonic 3-second mean RMS value during alarm	E	
MaxHVVal15	ABB_v2_dMV	Maximum 15th harmonic 3-second mean RMS value during alarm	E	
MaxHVVal16	ABB_v2_dMV	Maximum 16th harmonic 3-second mean RMS value during alarm	E	
MaxHVVal17	ABB_v2_dMV	Maximum 17th harmonic 3-second mean RMS value during alarm	E	
MaxHVVal18	ABB_v2_dMV	Maximum 18th harmonic 3-second mean RMS value during alarm	E	
MaxHVVal19	ABB_v2_dMV	Maximum 19th harmonic 3-second mean RMS value during alarm	E	
MaxHVVal2	ABB_v2_dMV	Maximum 2nd harmonic 3-second mean RMS value during alarm	E	
MaxHVVal20	ABB_v2_dMV	Maximum 20th harmonic 3-second mean RMS value during alarm	E	
Table continues on next page				

Attribute name	DATA type	Explanation	M/O/E	Remarks
MaxHVVal3	ABB_v2_dMV	Maximum 3rd harmonic 3-second mean RMS value during alarm	E	
MaxHVVal4	ABB_v2_dMV	Maximum 4th harmonic 3-second mean RMS value during alarm	E	
MaxHVVal5	ABB_v2_dMV	Maximum 5th harmonic 3-second mean RMS value during alarm	E	
MaxHVVal6	ABB_v2_dMV	Maximum 6th harmonic 3-second mean RMS value during alarm	E	
MaxHVVal7	ABB_v2_dMV	Maximum 7th harmonic 3-second mean RMS value during alarm	E	
MaxHVVal8	ABB_v2_dMV	Maximum 8th harmonic 3-second mean RMS value during alarm	E	
MaxHVVal9	ABB_v2_dMV	Maximum 9th harmonic 3-second mean RMS value during alarm	E	
MaxTddVVal	ABB_v2_dMV	Maximum TDD 3-second mean RMS value during alarm	E	
MaxThdVVal	ABB_v2_dMV	Maximum THD 3-second mean RMS value during alarm	E	
PhSvSt	ABB_v4_dINS	Monitored phase	E	
TddPPV	ABB_v2_dDEL	Voltage Total Demand Distortion	E	

3.2.33

EPDMMTR

Table 51: EPDMMTR

Attribute name	DATA type	Explanation	M/O/E	Remarks
MMTR class				
MMTR		Energy calculation function	M	
Data				
Common Logical Node Information				
Mod	ABB_c_dINC	Mode	M	Status-only
Beh	ABB_a_dINS	Behaviour	M	
Health	ABB_c_dINS	Health	M	
NamPlt	ABB_a_dLPL	Name plate	M	
Status Information				
SupWh	ABB_a_dBCR	Real energy supply (default supply direction: energy flow towards busbar)	O	Data type for counter value is INT32 (INT128 is not supported)
Table continues on next page				

Attribute name	DATA type	Explanation	M/O/E	Remarks
SupVArh	ABB_a_dBCR	Reactive energy supply (default supply direction: energy flow towards busbar)	O	Data type for counter value is INT32 (INT128 is not supported)
DmdWh	ABB_a_dBCR	Real energy demand (default demand direction: energy flow from busbar away)	O	Data type for counter value is INT32 (INT128 is not supported)
DmdVArh	ABB_a_dBCR	Reactive energy demand (default demand direction: energy flow from busbar away)	O	Data type for counter value is INT32 (INT128 is not supported)
WhFwd	ABB_v2_dBCR	Energy active forward binary counter value	E	Data type for counter value is INT32 (INT128 is not supported)
WhRv	ABB_v2_dBCR	Energy active reverse binary counter value	E	Data type for counter value is INT32 (INT128 is not supported)
VArhFwd	ABB_v2_dBCR	Energy reactive forward binary counter value	E	Data type for counter value is INT32 (INT128 is not supported)
VArhRv	ABB_v2_dBCR	Energy reactive reverse binary counter value	E	Data type for counter value is INT32 (INT128 is not supported)
StrAcc	ABB_v1_dSPS	Start of accumulating energy values	E	
WhFwdAlm	ABB_v1_dSPS	Alarm of energy active forward for exceeding the limit	E	
WhRvAlm	ABB_v1_dSPS	Alarm of energy active reverse for exceeding the limit	E	
VArhFwdAlm	ABB_v1_dSPS	Alarm of energy reactive forward for exceeding the limit	E	
VArhRvAlm	ABB_v1_dSPS	Alarm of energy reactive reverse for exceeding the limit	E	
DmdWhCnt	ABB_v1_dINS	Number of times energy active forward accumulated crossed maximum limit	E	
SupWhCnt	ABB_v1_dINS	Number of times energy active reverse accumulated crossed maximum limit	E	
Table continues on next page				

Attribute name	DATA type	Explanation	M/O/E	Remarks
DmdVArhCnt	ABB_v1_dINS	Number of times energy reactive forward accumulated crossed maximum limit	E	
SupVArhCnt	ABB_v1_dINS	Number of times energy reactive reverse accumulated crossed maximum limit	E	
SupDmdRs	ABB_v1_dSPC	Reset accumulated values	E	Controllable

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CPHMMXU (CMMXU)

Table 52: CPHMMXU

Attribute name	DATA type	Explanation	M/O/E	Remarks
MMXU class				
MMXU		Phase current measurement	M	
Data				
Common Logical Node Information				
Mod	ABB_a_dINC	Mode	M	
Beh	ABB_a_dINS	Behaviour	M	
Health	ABB_c_dINS	Health	M	
NamPit	ABB_a_dLPL	Name plate	M	
Status Information				
A	ABB_a_dWYE	Phase currents (IL1, IL2, IL3)	O	

3.2.35

DPMMXU

Table 53: DPMMXU

Attribute name	DATA type	Explanation	M/O/E	Remarks
MMXU class				
MMXU		Three-phase directional power protection measurements	M	
Data				
Common Logical Node Information				
Mod	ABB_c_dINC	Mode	M	Status-only
Beh	ABB_a_dINS	Behaviour	M	
Health	ABB_c_dINS	Health	M	
NamPit	ABB_d_dLPL	Name plate	M	
Status Information				
TotVA	ABB_b_dMV	Total Apparent Power (Total S)	O	
TotVAr	ABB_b_dMV	Total Reactive Power (Total Q)	O	
TotW	ABB_b_dMV	Total Active Power (Total P)	O	
TotPFang	ABB_v2_dMV	Angle between total apparent power and total active power	E	

3.2.36

DQMMXU

Table 54: DQMMXU

Attribute name	DATA type	Explanation	M/O/E	Remarks
MMXU class				
MMXU		Directional reactive power under voltage protection measurement	M	
Data				
Common Logical Node Information				
Mod	ABB_c_dINC	Mode	M	Status-only
Beh	ABB_a_dINS	Behaviour	M	
Health	ABB_c_dINS	Health	M	
NamPlt	ABB_d_dLPL	Name plate	M	
Status Information				
TotVAr	ABB_b_dMV	Total Reactive Power (Total Q)	O	

3.2.37

EPDMMXU

Table 55: EPDMMXU

Attribute name	DATA type	Explanation	M/O/E	Remarks
MMXU class				
MMXU		Three phase power demand	M	
Data				
Common Logical Node Information				
Mod	ABB_c_dINC	Mode	M	Status-only
Beh	ABB_a_dINS	Behaviour	M	
Health	ABB_c_dINS	Health	M	
NamPlt	ABB_a_dLPL	Name plate	M	
Status Information				
MaxDmdRs	ABB_v1_dSPC	Reset maximum demands	E	Controllable
WFwdDmd	ABB_v2_dMV	Active power demand value in forward direction	E	
VArFwdDmd	ABB_v2_dMV	Reactive power demand value in forward direction	E	
WRvDmd	ABB_v2_dMV	Active power demand value in reverse direction	E	
VArRvDmd	ABB_v2_dMV	Reactive power demand value in reverse direction	E	
MaxWFwdDmd	ABB_v2_dMV	Maximum active power demand value in forward direction	E	
Table continues on next page				

Attribute name	DATA type	Explanation	M/O/E	Remarks
MaxWRvDmd	ABB_v2_dMV	Maximum active power demand value in reverse direction	E	
MaxVArFwdD	ABB_v2_dMV	Maximum reactive power demand value in forward direction	E	
MaxVArRvDm	ABB_v2_dMV	Maximum reactive power demand value in reverse direction	E	

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PWRMMXU

Table 56: PWRMMXU

Attribute name	DATA type	Explanation	M/O/E	Remarks
MMXU class				
MMXU		Power monitoring function with P, Q, S, power factor	M	
Data				
Common Logical Node Information				
Mod	ABB_a_dINC	Mode	M	
Beh	ABB_a_dINS	Behaviour	M	
Health	ABB_c_dINS	Health	M	
NamPlt	ABB_a_dLPL	Name plate	M	
Status Information				
TotW	ABB_a_dMV	Total Active Power (Total P)	O	
TotVAr	ABB_a_dMV	Total Reactive Power (Total Q)	O	
TotVA	ABB_a_dMV	Total Apparent Power (Total S)	O	
TotPF	ABB_a_dMV	Average Power factor (Total PF)	O	
Hz	ABB_a_dMV	Frequency	O	
ALd	ABB_v1_dSPS	Current is leading voltage	E	
ALg	ABB_v1_dSPS	Current is lagging voltage	E	

3.2.39

RESCMMXU

Table 57: RESCMMXU

Attribute	DATA	Explanation	M/O/E	Remarks
MMXU class				
MMXU		Residual current measurement	M	
Data				
Common Logical Node Information				
Mod	ABB_a_dINC	Mode	M	
Beh	ABB_a_dINS	Behaviour	M	
Table continues on next page				

Attribute	DATA	Explanation	M/O/E	Remarks
Health	ABB_c_dINS	Health	M	
NamPlt	ABB_a_dLPL	Name plate	M	
Status Information				
A	ABB_d_dWYE	Phase currents (IL1, IL2, IL3)	O	

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RESVMMXU

Table 58: RESVMMXU

Attribute name	DATA type	Explanation	M/O/E	Remarks
MMXU class				
MMXU		Residual voltage measurement, true RMS value	M	
Data				
Common Logical Node Information				
Mod	ABB_c_dINC	Mode	M	Status-only
Beh	ABB_a_dINS	Behaviour	M	
Health	ABB_c_dINS	Health	M	
NamPlt	ABB_a_dLPL	Name plate	M	
Status Information				
PhV	ABB_d_dWYE	Phase to ground voltages (VL1ER, ...)	O	

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VPHMMXU

Table 59: VPHMMXU

Attribute name	DATA type	Explanation	M/O/E	Remarks
MMXU class				
MMXU		Phase voltage measurement	M	
Data				
Common Logical Node Information				
Mod	ABB_a_dINC	Mode	M	
Beh	ABB_a_dINS	Behaviour	M	
Health	ABB_c_dINS	Health	M	
NamPlt	ABB_a_dLPL	Name plate	M	
Status Information				
PhV	ABB_a_dWYE	Phase to ground voltages (VL1ER, ...)	O	

3.2.42 VPPMMXU

Table 60: VPPMMXU

Attribute name	DATA type	Explanation	M/O/E	Remarks
MMXU class				
MMXU		Phase-to-phase voltage measurement	M	
Data				
Common Logical Node Information				
Mod	ABB_a_dINC	Mode	M	
Beh	ABB_a_dINS	Behaviour	M	
Health	ABB_c_dINS	Health	M	
NamPit	ABB_a_dLPL	Name plate	M	
Status Information				
PPV	ABB_a_dDEL	Phase to phase voltages (VL1VL2, ...)	O	

3.2.43 VRESMMXU

Table 61: VRESMMXU

Attribute name	DATA type	Explanation	M/O/E	Remarks
MMXU class				
MMXU		Residual voltage measurement, fundamental component RMS value	M	
Data				
Common Logical Node Information				
Mod	ABB_c_dINC	Mode	M	Status-only
Beh	ABB_a_dINS	Behaviour	M	
Health	ABB_c_dINS	Health	M	
NamPit	ABB_a_dLPL	Name plate	M	
Status Information				
PhV	ABB_d_dWYE	Phase to ground voltages (VL1ER, ...)	O	

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UEXMMXU

Table 62: UEXMMXU

Attribute name	DATA type	Explanation	M/O/E	Remarks
MMXU class				
MMXU		Under excitation protection for synchronous machines, measurements	M	
Data				
Common Logical Node Information				
Mod	ABB_c_dINC	Mode	M	Status-only
Beh	ABB_a_dINS	Behaviour	M	
Health	ABB_c_dINS	Health	M	
NamPlt	ABB_d_dLPL	Name plate	M	
Status Information				
Z	ABB_h_dWYE	Phase Impedance	O	
Z1	ABB_v1_dCMV	Positive sequence impedance	E	
ZPP	ABB_v1_dDEL	Phase to phase impedances	E	

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UZMMXU

Table 63: UZMMXU

Attribute name	DATA type	Explanation	M/O/E	Remarks
MMXU class				
MMXU		Three-phase under impedance protection phase-to-phase impedance measurements	M	
Data				
Common Logical Node Information				
Mod	ABB_c_dINC	Mode	M	Status-only
Beh	ABB_a_dINS	Behaviour	M	
Health	ABB_c_dINS	Health	M	
NamPlt	ABB_d_dLPL	Name plate	M	
Status Information				
ZPP	ABB_v2_dDEL	Phase-phase impedances	E	

3.2.46

WMMXU

Table 64: WMMXU

Attribute name	DATA type	Explanation	M/O/E	Remarks
MMXU class				
MMXU		MMXU for Sensitive EF, wattmetric (for residual power measurement)	M	
Data				
Common Logical Node Information				
Mod	ABB_c_dINC	Mode	M	Status-only
Beh	ABB_a_dINS	Behaviour	M	
Health	ABB_c_dINS	Health	M	
NamPlt	ABB_a_dLPL	Name plate	M	
Status Information				
W	ABB_b_dWYE	Phase active power (P)	O	

3.2.47

CSMSQI

Table 65: CSMSQI

Attribute name	DATA type	Explanation	M/O/E	Remarks
MSQI class				
MSQI		Sequence current measurement, positive and negative sequence values	M	
Data				
Common Logical Node Information				
Mod	ABB_a_dINC	Mode	M	
Beh	ABB_a_dINS	Behaviour	M	
Health	ABB_c_dINS	Health	M	
NamPlt	ABB_a_dLPL	Name plate	M	
Status Information				
SeqA	ABB_c_dSEQ	Positive, negative and zero sequence current	C	

3.2.48

VSMSQI

Table 66: VSMSQI

Attribute name	DATA type	Explanation	M/O/E	Remarks
MSQI class				
MSQI		Sequence voltage measurement, positive and negative sequence values	M	
Data				
Common Logical Node Information				
Mod	ABB_a_dINC	Mode	M	
Beh	ABB_a_dINS	Behaviour	M	
Health	ABB_c_dINS	Health	M	
NamPlt	ABB_a_dLPL	Name plate	M	
Status Information				
SeqV	ABB_c_dSEQ	Positive, Negative and Zero Sequence Voltage	C	

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DST1MSTA

Table 67: DST1MSTA

Attribute name	DATA type	Explanation	M/O/E	Remarks
MSTA class				
MSTA		Recording data bank 1 for DSTPDIS zones	M	
Data				
Common Logical Node Information				
Mod	ABB_c_dINC	Mode	M	Status-only
Beh	ABB_a_dINS	Behaviour	M	
Health	ABB_c_dINS	Health	M	
NamPlt	ABB_a_dLPL	Name plate	M	
Status Information				
DirRisZn	ABB_v2_dMV	Zone direction calculation resistance	E	
DirReactZn	ABB_v2_dMV	Zone direction calculation reactance	E	
PhLoopRis1	ABB_v2_dMV	PE-loop resistance (1st)	E	
PhLoopRea1	ABB_v2_dMV	PE-loop reactance (1st)	E	
PhLoopRis2	ABB_v2_dMV	PE-loop resistance (2nd)	E	
PhLoopRea2	ABB_v2_dMV	PE-loop reactance (2nd)	E	
PPLoopRis	ABB_v2_dMV	PP-loop resistance	E	
PPLoopReac	ABB_v2_dMV	PP-loop reactance	E	

3.2.50 DSTMSTA

Table 68: DSTMSTA

Attribute name	DATA type	Explanation	M/O/E	Remarks
MSTA class				
MSTA		Recording data bank >1 for DSTPDIS zones	M	
Data				
Common Logical Node Information				
Mod	ABB_c_dINC	Mode	M	Status-only
Beh	ABB_a_dINS	Behaviour	M	
Health	ABB_c_dINS	Health	M	
NamPit	ABB_a_dLPL	Name plate	M	
Status Information				
DirRisZn	ABB_v2_dMV	Zone direction calculation resistance	E	
DirReactZn	ABB_v2_dMV	Zone direction calculation reactance	E	
PhLoopRis1	ABB_v2_dMV	PE-loop resistance (1st)	E	
PhLoopRea1	ABB_v2_dMV	PE-loop reactance (1st)	E	
PhLoopRis2	ABB_v2_dMV	PE-loop resistance (2nd)	E	
PhLoopRea2	ABB_v2_dMV	PE-loop reactance (2nd)	E	
PPLoopRis	ABB_v2_dMV	PP-loop resistance	E	
PPLoopReac	ABB_v2_dMV	PP-loop reactance	E	

3.2.51 EAD1MSTA

Table 69: EAD1MSTA

Attribute name	DATA type	Explanation	M/O/E	Remarks
MSTA class				
MSTA		Recording data bank 1 for EFPADM	M	
Data				
Common Logical Node Information				
Mod	ABB_c_dINC	Mode	M	Status-only
Beh	ABB_a_dINS	Behaviour	M	
Health	ABB_c_dINS	Health	M	
NamPit	ABB_d_dLPL	Name plate	M	
Status Information				
AFit	ABB_v5_dWYE	Fault-state currents	E	
APreFit	ABB_v5_dWYE	Pre-fault currents	E	
Table continues on next page				

Attribute name	DATA type	Explanation	M/O/E	Remarks
Cond	ABB_v2_dMV	Recorded real part of neutral admittance	E	
Dir	ABB_b_dACD	Recorded direction	E	
PhVFit	ABB_v5_dWYE	Fault-state phase to earth voltages	E	
PhVPreFit	ABB_v5_dWYE	Pre-fault phase to earth voltages	E	
StrDur	ABB_v2_dMV	Start duration	E	
Sus	ABB_v2_dMV	Recorded imaginary part of neutral admittance	E	

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EADMSTA

Table 70: EADMSTA

Attribute name	DATA type	Explanation	M/O/E	Remarks
MSTA class				
MSTA		Recording data bank >1 for EFPADM	M	
Data				
Common Logical Node Information				
Mod	ABB_c_dINC	Mode	M	Status-only
Beh	ABB_a_dINS	Behaviour	M	
Health	ABB_c_dINS	Health	M	
NamPlt	ABB_d_dLPL	Name plate	M	
Status Information				
AFIt	ABB_v5_dWYE	Fault-state currents	E	
APreFit	ABB_v5_dWYE	Pre-fault currents	E	
Cond	ABB_v2_dMV	Recorded real part of neutral admittance	E	
Dir	ABB_b_dACD	Recorded direction	E	
PhVFit	ABB_v5_dWYE	Fault-state phase to earth voltages	E	
PhVPreFit	ABB_v5_dWYE	Pre-fault phase to earth voltages	E	
StrDur	ABB_v2_dMV	Start duration	E	
Sus	ABB_v2_dMV	Recorded imaginary part of neutral admittance	E	

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F1MSTA

Table 71: F1MSTA

Attribute name	DATA type	Explanation	M/O/E	Remarks
MSTA class				
MSTA		Recording data bank 1 for SCEFRFLO	M	
Data				
Common Logical Node Information				
Mod	ABB_c_dINC	Mode	M	Status-only
Beh	ABB_a_dINS	Behaviour	M	
Health	ABB_c_dINS	Health	M	
NamPit	ABB_a_dLPL	Name plate	M	
Status Information				
FitLoop	ABB_e_dINS	Fault Loop	E	
FitR	ABB_v2_dMV	Fault resistance	E	
FitLoopR	ABB_v2_dMV	Fault loop resistance	E	
FitLoopX	ABB_v2_dMV	Fault loop reactance	E	
FitDiskm	ABB_b_dMV	Fault distance	E	
PhGndCapac	ABB_v2_dMV	Line phase-to-earth capacitance	E	
EqDisLod	ABB_v2_dMV	Equivalent load distance estimate	E	
RatFitALod	ABB_v2_dMV	Ratio between fault current and load current	E	
FitDisVald	ABB_v1_dINS	Validity of earth fault location	E	
Alm	ABB_a_dSPS	Alarm signal	E	
VPreFitPhA	ABB_v2_dMV	Pre-fault voltage amplitude, phase A	E	
VPreFitPhB	ABB_v2_dMV	Pre-fault voltage amplitude, phase B	E	
VPreFitPhC	ABB_v2_dMV	Pre-fault voltage amplitude, phase C	E	
APreFitPhA	ABB_v2_dMV	Pre-fault current amplitude, phase A	E	
APreFitPhB	ABB_v2_dMV	Pre-fault current amplitude, phase B	E	
APreFitPhC	ABB_v2_dMV	Pre-fault current amplitude, phase C	E	
VFitPhA	ABB_v2_dMV	Voltage amplitude during fault, phase A	E	
VFitPhB	ABB_v2_dMV	Voltage amplitude during fault, phase B	E	
VFitPhC	ABB_v2_dMV	Voltage amplitude during fault, phase C	E	
Table continues on next page				

Attribute name	DATA type	Explanation	M/O/E	Remarks
AFItPhA	ABB_v2_dMV	Current amplitude during fault, phase A	E	
AFItPhB	ABB_v2_dMV	Current amplitude during fault, phase B	E	
AFItPhC	ABB_v2_dMV	Current amplitude during fault, phase C	E	

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FMSTA

Table 72: FMSTA

Attribute name	DATA type	Explanation	M/O/E	Remarks
MSTA class				
MSTA		Recording data bank >1 for SCEFRFLO	M	
Data				
Common Logical Node Information				
Mod	ABB_c_dINC	Mode	M	Status-only
Beh	ABB_a_dINS	Behaviour	M	
Health	ABB_c_dINS	Health	M	
NamPlt	ABB_a_dLPL	Name plate	M	
Status Information				
FltLoop	ABB_e_dINS	Fault Loop	E	
FltR	ABB_v2_dMV	Fault resistance	E	
FltLoopR	ABB_v2_dMV	Fault loop resistance	E	
FltLoopX	ABB_v2_dMV	Fault loop reactance	E	
FltDiskm	ABB_b_dMV	Fault disdance	E	
PhGndCapac	ABB_v2_dMV	Line phase-to-earth capacitance	E	
EqDisLod	ABB_v2_dMV	Equivalent load distance estimate	E	
RatFltALod	ABB_v2_dMV	Ratio between fault current and load current	E	
FltDisVald	ABB_v1_dINS	Validity of earth fault location	E	
Alm	ABB_a_dSPS	Alarm signal	E	
VPreFltPhA	ABB_v2_dMV	Pre-fault voltage amplitude, phase A	E	
VPreFltPhB	ABB_v2_dMV	Pre-fault voltage amplitude, phase B	E	
VPreFltPhC	ABB_v2_dMV	Pre-fault voltage amplitude, phase C	E	
APreFltPhA	ABB_v2_dMV	Pre-fault current amplitude, phase A	E	
APreFltPhB	ABB_v2_dMV	Pre-fault current amplitude, phase B	E	
Table continues on next page				

Attribute name	DATA type	Explanation	M/O/E	Remarks
APreFitPhC	ABB_v2_dMV	Pre-fault current amplitude, phase C	E	
VFitPhA	ABB_v2_dMV	Voltage amplitude during fault, phase A	E	
VFitPhB	ABB_v2_dMV	Voltage amplitude during fault, phase B	E	
VFitPhC	ABB_v2_dMV	Voltage amplitude during fault, phase C	E	
AFitPhA	ABB_v2_dMV	Current amplitude during fault, phase A	E	
AFitPhB	ABB_v2_dMV	Current amplitude during fault, phase B	E	
AFitPhC	ABB_v2_dMV	Current amplitude during fault, phase C	E	

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GFC1MSTA

Table 73: GFC1MSTA

Attribute name	DATA type	Explanation	M/O/E	Remarks
MSTA class				
MSTA		Recording data bank 1 for DSTPDIS GFC	M	
Data				
Common Logical Node Information				
Mod	ABB_c_dINC	Mode	M	Status-only
Beh	ABB_a_dINS	Behaviour	M	
Health	ABB_c_dINS	Health	M	
NamPlt	ABB_a_dLPL	Name plate	M	
Status Information				
RelPhLoop	ABB_v4_dINS	Release PE-loops	E	
RelPPLoop	ABB_v4_dINS	Release PP-loops	E	
EFDet	ABB_v2_dSPS	Earth-fault detected	E	
XCDet	ABB_v2_dSPS	Cross-country fault detected	E	
EFDdir	ABB_v2_dACD	EF direction	E	
Dir	ABB_b_dACD	Direction	E	
ZnOpSt	ABB_v4_dINS	Operate signals of all zones	E	

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GFCMSTA

Table 74: GFCMSTA

Attribute name	DATA type	Explanation	M/O/E	Remarks
MSTA class				
MSTA		Recording data bank >1 for DSTPDIS GFC	M	
Data				
Common Logical Node Information				
Mod	ABB_c_dINC	Mode	M	Status-only
Beh	ABB_a_dINS	Behaviour	M	
Health	ABB_c_dINS	Health	M	
NamPlt	ABB_a_dLPL	Name plate	M	
Status Information				
RelPhLoop	ABB_v4_dINS	Release PE-loops	E	
RelPPLoop	ABB_v4_dINS	Release PP-loops	E	
EFDet	ABB_v2_dSPS	Earth-fault detected	E	
XCDet	ABB_v2_dSPS	Cross-country fault detected	E	
EFDir	ABB_v2_dACD	EF direction	E	
Dir	ABB_b_dACD	Direction	E	
ZnOpSt	ABB_v4_dINS	Operate signals of all zones	E	

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QVU1MSTA

Table 75: QVU1MSTA

Attribute name	DATA type	Explanation	M/O/E	Remarks
MSTA class				
MSTA		Recording data bank 1 for VSQVUB	M	
Data				
Common Logical Node Information				
Mod	ABB_c_dINC	Mode	M	Status-only
Beh	ABB_a_dINS	Behaviour	M	
Health	ABB_c_dINS	Health	M	
NamPlt	ABB_a_dLPL	Name plate	M	
Status Information				
HiMnImbVal	ABB_v2_dMV	Maximum 3 second sliding mean voltage imbalance during alarm	E	

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QVUMSTA

Table 76: QVUMSTA

Attribute name	DATA type	Explanation	M/O/E	Remarks
MSTA class				
MSTA		Recording data bank 1 for VSQVUB	M	
Data				
Common Logical Node Information				
Mod	ABB_c_dINC	Mode	M	Status-only
Beh	ABB_a_dINS	Behaviour	M	
Health	ABB_c_dINS	Health	M	
NamPlt	ABB_a_dLPL	Name plate	M	
Status Information				
HiMnImbVal	ABB_v2_dMV	Maximum 3 second sliding mean voltage imbalance during alarm	E	

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QVV1MSTA

Table 77: QVV1MSTA

Attribute name	DATA type	Explanation	M/O/E	Remarks
MSTA class				
MSTA		Recording data bank 1 for PHQVVR	M	
Data				
Common Logical Node Information				
Mod	ABB_c_dINC	Mode	M	Status-only
Beh	ABB_a_dINS	Behaviour	M	
Health	ABB_c_dINS	Health	M	
NamPlt	ABB_a_dLPL	Name plate	M	
Status Information				
VVaTm1	ABB_v2_dMV	Voltage variation duration phase A/AB (last completed event)	E	
VVaTm2	ABB_v2_dMV	Voltage variation duration phase B/BC (last completed event)	E	
VVaTm3	ABB_v2_dMV	Voltage variation duration phase C/CA (last completed event)	E	
VVa1	ABB_v2_dMV	Voltage variation magnitude phase A/AB	E	
VVa2	ABB_v2_dMV	Voltage variation magnitude phase B/BC	E	
Table continues on next page				

Attribute name	DATA type	Explanation	M/O/E	Remarks
VVa3	ABB_v2_dMV	Voltage variation magnitude phase C/CA	E	
AMagPhA	ABB_v2_dMV	Current magnitude phase A (value preceding voltage variation start)	E	
AMagPhB	ABB_v2_dMV	Current magnitude phase B (value preceding voltage variation start)	E	
AMagPhC	ABB_v2_dMV	Current magnitude phase C (value preceding voltage variation start)	E	
VVaTyp	ABB_v7_dINS	Variation type	E	

3.2.60

QVVMSTA

Table 78: QVVMSTA

Attribute name	DATA type	Explanation	M/O/E	Remarks
MSTA class				
MSTA		Recording data bank >1 for PHQVVR	M	
Data				
Common Logical Node Information				
Mod	ABB_c_dINC	Mode	M	Status-only
Beh	ABB_a_dINS	Behaviour	M	
Health	ABB_c_dINS	Health	M	
NamPlt	ABB_a_dLPL	Name plate	M	
Status Information				
VVaTm1	ABB_v2_dMV	Voltage variation duration phase A/AB (last completed event)	E	
VVaTm2	ABB_v2_dMV	Voltage variation duration phase B/BC (last completed event)	E	
VVaTm3	ABB_v2_dMV	Voltage variation duration phase C/CA (last completed event)	E	
VVa1	ABB_v2_dMV	Voltage variation magnitude phase A/AB	E	
VVa2	ABB_v2_dMV	Voltage variation magnitude phase B/BC	E	
VVa3	ABB_v2_dMV	Voltage variation magnitude phase C/CA	E	
AMagPhA	ABB_v2_dMV	Current magnitude phase A (value preceding voltage variation start)	E	
Table continues on next page				

Attribute name	DATA type	Explanation	M/O/E	Remarks
AMagPhB	ABB_v2_dMV	Current magnitude phase B (value preceding voltage variation start)	E	
AMagPhC	ABB_v2_dMV	Current magnitude phase C (value preceding voltage variation start)	E	
VVaTyp	ABB_v7_dINS	Variation type	E	

3.2.61

MPDIF

Table 79: MPDIF

Attribute name	DATA type	Explanation	M/O/E	Remarks
PDIF class				
PDIF		Machine Differential Protection	M	
Data				
Common Logical Node Information				
Mod	ABB_a_dINC	Mode	M	
Beh	ABB_a_dINS	Behaviour	M	
Health	ABB_c_dINS	Health	M	
NamPit	ABB_d_dLPL	Name plate	M	
Status Information				
Op	ABB_a_dACT	Operate	M	
DifACIc	ABB_f_dWYE	Differential Current	O	
RstA	ABB_f_dWYE	Restraint Current	O	
AngLinAB	ABB_v2_dMV	Current phase angle phase A – phase B, line side	E	
AngLinBC	ABB_v2_dMV	Current phase angle phase B – phase C, line side	E	
AngLinCA	ABB_v2_dMV	Current phase angle phase C – phase BA line side	E	
AngLinNeuA	ABB_v2_dMV	Current phase angle diff between line and neutral, phase A	E	
AngLinNeuB	ABB_v2_dMV	Current phase angle diff between line and neutral, phase B	E	
AngLinNeuC	ABB_v2_dMV	Current phase angle diff between line and neutral, phase C	E	
AngNeutAB	ABB_v2_dMV	Current phase angle phase A – phase B, neutral side	E	
AngNeutBC	ABB_v2_dMV	Current phase angle phase B – phase C, neutral side	E	
AngNeutCA	ABB_v2_dMV	Current phase angle phase C – phase BA neutral side	E	
Table continues on next page				

Attribute name	DATA type	Explanation	M/O/E	Remarks
BlkInSt	ABB_v1_dACT	Status form waveform blocking	E	
OpHiSet	ABB_v2_dACT	Operate signal from high set stage	E	
OpLoSet	ABB_v2_dACT	Operate signal from low set stage	E	

3.2.62

MHZPDIF

Table 80: MHZPDIF

Attribute name	DATA type	Explanation	M/O/E	Remarks
PDIF class				
PDIF		High-impedance or Flux-balance based differential protection for generators and motors	M	
Data				
Common Logical Node Information				
Mod	ABB_a_dINC	Mode	M	
Beh	ABB_a_dINS	Behaviour	M	
Health	ABB_c_dINS	Health	M	
NamPlt	ABB_d_dLPL	Name plate	M	
Status Information				
Op	ABB_a_dACT	Operate	M	
DifAClc	ABB_f_dWYE	Differential Current	O	
Str	ABB_c_dACD	Start	O	
StrDur	ABB_v2_dMV	Start duration	E	

3.2.63

HREFPDIF

Table 81: HREFPDIF

Attribute name	DATA type	Explanation	M/O/E	Remarks
PDIF class				
PDIF		Restricted EF protection based on high impedance principle	M	
Data				
Common Logical Node Information				
Mod	ABB_a_dINC	Mode	M	
Beh	ABB_a_dINS	Behaviour	M	
Health	ABB_c_dINS	Health	M	
NamPlt	ABB_a_dLPL	Name plate	M	
Status Information				
Table continues on next page				

Attribute name	DATA type	Explanation	M/O/E	Remarks
Str	ABB_d_dACD	Start	O	
Op	ABB_b_dACT	Operate	M	
StrDur	ABB_v2_dMV	Start duration	E	

3.2.64

LREFPDIF

Table 82: LREFPDIF

Attribute name	DATA type	Explanation	M/O/E	Remarks
PDIF class				
PDIF		Stabilised restricted earth-fault protection (low impedance principle)	M	
Data				
Common Logical Node Information				
Mod	ABB_c_dINC	Mode	M	Status-only
Beh	ABB_a_dINS	Behaviour	M	
Health	ABB_c_dINS	Health	M	
NamPlt	ABB_a_dLPL	Name plate	M	
Status Information				
Str	ABB_d_dACD	Start	O	
Op	ABB_b_dACT	Operate	M	
DifACIc	ABB_b_dWYE	Differential Current	O	
RstA	ABB_b_dWYE	Restraint Current	O	
Blk2HSt	ABB_v2_dACT	Blocked due to 2nd Harmonic	E	
StrDur	ABB_v2_dMV	Start duration	E	

3.2.65

TR2PDIF

Attribute name	DATA type	Explanation	M/O/E	Remarks
PDIF class				
PDIF		Transformer differential protection for two winding transformers	M	
Data				
Common Logical Node Information				
Mod	ABB_c_dINC	Mode	M	Status-only
Beh	ABB_a_dINS	Behaviour	M	
Health	ABB_c_dINS	Health	M	
NamPlt	ABB_a_dLPL	Name plate	M	
Status Information				
Table continues on next page				

Attribute name	DATA type	Explanation	M/O/E	Remarks
Op	ABB_a_dACT	Operate	M	
OpLoSet	ABB_v2_dACT	Operate signal from low set (stabilized) stage	E	
OpHiSet	ABB_v2_dACT	Operate signal from high set (instantaneous) stage	E	
BlkWavSt	ABB_v1_dACT	Status of waveform blocking	E	
Blk2HSt	ABB_v1_dACT	Status of second harmonic blocking	E	
Blk5HSt	ABB_v1_dACT	Status of fifth harmonic blocking	E	
AngPriAB	ABB_v2_dMV	Angle between primary currents in phases A and B	E	
AngPriBC	ABB_v2_dMV	Angle between primary currents in phases B and C	E	
AngPriCA	ABB_v2_dMV	Angle between primary currents in phases C and A	E	
AngScyAB	ABB_v2_dMV	Angle between secondary current in phases A and B	E	
AngScyBC	ABB_v2_dMV	Angle between secondary current in phases B and C	E	
AngScyCA	ABB_v2_dMV	Angle between secondary current in phases C and A	E	
AngPriScyA	ABB_v2_dMV	Angle between primary and secondary current, phase A	E	
AngPriScyB	ABB_v2_dMV	Angle between primary and secondary current, phase B	E	
AngPriScyC	ABB_v2_dMV	Angle between primary and secondary current, phase C	E	

3.2.66

DSTPDIS

Table 83: DSTPDIS

Attribute name	DATA type	Explanation	M/O/E	Remarks
PDIS class				
PDIS		Zone for distribution distance protection	M	
Data				
Common Logical Node Information				
Mod	ABB_c_dINC	Mode	M	Status-only
Beh	ABB_a_dINS	Behaviour	M	
Health	ABB_c_dINS	Health	M	
NamPlt	ABB_a_dLPL	Name plate	M	
Status Information				
Str	ABB_c_dACD	Start	M	
Op	ABB_b_dACT	Operate	M	
IvdTitAng	ABB_v1_dINS	Invalid / not allowed value for TitAng	E	

3.2.67

GFCPDIS

Table 84: GFCPDIS

Attribute name	DATA type	Explanation	M/O/E	Remarks
PDIS class				
PDIS		General fault criteria for distribution distance protection	M	
Data				
Common Logical Node Information				
Mod	ABB_c_dINC	Mode	M	Status-only
Beh	ABB_a_dINS	Behaviour	M	
Health	ABB_c_dINS	Health	M	
NamPit	ABB_a_dLPL	Name plate	M	
Status Information				
Str	ABB_c_dACD	Start	M	
Op	ABB_b_dACT	Operate	M	
RelPhsA	ABB_v1_dSPS	Release phase A to earth loop	E	
RelPhsB	ABB_v1_dSPS	Release phase B to earth loop	E	
RelPhsC	ABB_v1_dSPS	Release phase C to earth loop	E	
RelPhsAB	ABB_v1_dSPS	Release phase A to phase B loop	E	
RelPhsBC	ABB_v1_dSPS	Release phase B to phase C loop	E	
RelPhsCA	ABB_v1_dSPS	Release phase C to phase A loop	E	
Rel3Ph	ABB_v1_dSPS	Release three-phase loop	E	
IvdPhSel	ABB_v1_dSPS	Invalid / not allowed phase selection method (Over A/ underZ without accurate phase voltages)	E	
EFDet	ABB_v1_dSPS	Indication of single phase earth fault, GFC	E	
XCDet	ABB_v1_dSPS	Indication of cross-country fault, GFC. In high impedance grounded network	E	

3.2.68

UEXPDIS

Table 85: UEXPDIS

Attribute name	DATA type	Explanation	M/O/E	Remarks
PDIS class				
PDIS		Under excitation protection for synchronous machines	M	
Data				
Table continues on next page				

Attribute name	DATA type	Explanation	M/O/E	Remarks
Common Logical Node Information				
Mod	ABB_c_dINC	Mode	M	Status-only
Beh	ABB_a_dINS	Behaviour	M	
Health	ABB_c_dINS	Health	M	
NamPlt	ABB_d_dLPL	Name plate	M	
Status Information				
Op	ABB_b_dACT	Operate	M	
Str	ABB_d_dACD	Start	M	
StrDur	ABB_v2_dMV	Start duration	E	

3.2.69

UZPDIS

Table 86: UZPDIS

Attribute name	DATA type	Explanation	M/O/E	Remarks
PDIS class				
PDIS		Three-phase under impedance protection for synchronous machines	M	
Data				
Common Logical Node Information				
Mod	ABB_c_dINC	Mode	M	Status-only
Beh	ABB_a_dINS	Behaviour	M	
Health	ABB_c_dINS	Health	M	
NamPlt	ABB_d_dLPL	Name plate	M	
Status Information				
Op	ABB_b_dACT	Operate	M	
Str	ABB_d_dACD	Start	M	
StrDur	ABB_v2_dMV	Start duration	E	

3.2.70

DPPDOP

Table 87: DPPDOP

Attribute name	DATA type	Explanation	M/O/E	Remarks
PDOP class				
PDOP		Three-phase directional overpower protection	M	
Data				
Common Logical Node Information				
Mod	ABB_c_dINC	Mode	M	Status-only
Table continues on next page				

Attribute name	DATA type	Explanation	M/O/E	Remarks
Beh	ABB_a_dINS	Behaviour	M	
Health	ABB_c_dINS	Health	M	
NamPlt	ABB_d_dLPL	Name plate	M	
Status Information				
Op	ABB_b_dACT	Operate	M	
Str	ABB_d_dACD	Start	M	
StrDur	ABB_v2_dMV	Start duration	E	

3.2.71

DQPDOP

Table 88: DQPDOP

Attribute name	DATA type	Explanation	M/O/E	Remarks
PDOP class				
PDOP		Reactive over power part of reactive power under voltage protection	M	
Data				
Common Logical Node Information				
Mod	ABB_c_dINC	Mode	M	Status-only
Beh	ABB_a_dINS	Behaviour	M	
Health	ABB_c_dINS	Health	M	
NamPlt	ABB_d_dLPL	Name plate	M	
Status Information				
Op	ABB_b_dACT	Operate	M	
Str	ABB_d_dACD	Start	M	

3.2.72

DPPDUP

Table 89: DPPDUP

Attribute name	DATA type	Explanation	M/O/E	Remarks
PDUP class				
PDUP		Three-phase directional underpower protection	M	
Data				
Common Logical Node Information				
Mod	ABB_c_dINC	Mode	M	Status-only
Beh	ABB_a_dINS	Behaviour	M	
Health	ABB_c_dINS	Health	M	
NamPlt	ABB_d_dLPL	Name plate	M	
Status Information				
Table continues on next page				

Attribute name	DATA type	Explanation	M/O/E	Remarks
Op	ABB_b_dACT	Operate	M	
Str	ABB_d_dACD	Start	M	
StrDur	ABB_v2_dMV	Start duration	E	

3.2.73

DAPFRC

Table 90: DAPFRC

Attribute name	DATA type	Explanation	M/O/E	Remarks
PFRC class				
PFRC		Rate of change of frequency	M	
Data				
Common Logical Node Information				
Mod	ABB_a_dINC	Mode	M	
Beh	ABB_a_dINS	Behaviour	M	
Health	ABB_c_dINS	Health	M	
NamPlt	ABB_a_dLPL	Name plate	M	
Status Information				
Str	ABB_d_dACD	Start	M	
Op	ABB_b_dACT	Operate	M	
BlkV	ABB_a_dSPS	Blocked because of voltage	O	
StrDur	ABB_v2_dMV	Start duration	E	

3.2.74

LSHDPFRC

Table 91: LSHDPFRC

Attribute name	DATA type	Explanation	M/O/E	Remarks
PFRC class				
PFRC		Load shedding, frequency rate of change	M	
Data				
Common Logical Node Information				
Mod	ABB_c_dINC	Mode	M	Status-only
Beh	ABB_a_dINS	Behaviour	M	
Health	ABB_c_dINS	Health	M	
NamPlt	ABB_a_dLPL	Name plate	M	
Status Information				
Str	ABB_d_dACD	Start	M	
Op	ABB_b_dACT	Operate	M	

3.2.75

GNR1PHAR

Table 92: GNR1PHAR

Attribute name	DATA type	Explanation	M/O/E	Remarks
PHAR class				
PHAR		General harmonic restraint with general start only	M	
Data				
Common Logical Node Information				
Mod	ABB_c_dINC	Mode	M	Status-only
Beh	ABB_a_dINS	Behaviour	M	
Health	ABB_c_dINS	Health	M	
NamPlt	ABB_a_dLPL	Name Plate	M	
Status Information				
Str	ABB_d_dACD	Start (active when restraint is needed)	M	

3.2.76

GNR2PHAR

Table 93: GNR2PHAR

Attribute name	DATA type	Explanation	M/O/E	Remarks
PHAR class				
PHAR		General harmonic restraint with phase starts	M	
Data				
Common Logical Node Information				
Mod	ABB_c_dINC	Mode	M	Status-only
Beh	ABB_a_dINS	Behaviour	M	
Health	ABB_c_dINS	Health	M	
NamPlt	ABB_a_dLPL	Name Plate	M	
Status Information				
Str	ABB_c_dACD	Start (active when restraint is needed)	M	

3.2.77

INRPHAR

Table 94: INRPHAR

Attribute name	DATA type	Explanation	M/O/E	Remarks
PHAR class				
PHAR		5th harmonic restraint for transformer differential protection	M	
Data				
Common Logical Node Information				
Mod	ABB_a_dINC	Mode	M	
Beh	ABB_a_dINS	Behaviour	M	
Health	ABB_c_dINS	Health	M	
NamPlt	ABB_a_dLPL	Name Plate	M	
Status Information				
Str	ABB_c_dACD	Start (active when restraint is needed)	M	

3.2.78

TR5PHAR

Table 95: TR5PHAR

Attribute name	DATA type	Explanation	M/O/E	Remarks
PHAR class				
PHAR		5th harmonic restraint for transformer differential protection	M	
Data				
Common Logical Node Information				
Mod	ABB_c_dINC	Mode	M	Status-only
Beh	ABB_a_dINS	Behaviour	M	
Health	ABB_c_dINS	Health	M	
NamPlt	ABB_a_dLPL	Name Plate	M	
Status Information				
Str	ABB_a_dACD	Start (active when restraint is needed)	M	

3.2.79

STTPMRI

Table 96: STTPMRI

Attribute name	DATA type	Explanation	M/O/E	Remarks
PMRI class				
PMRI		Motor restart inhibition and stall protection	M	
Data				
Common Logical Node Information				
Mod	ABB_c_dINC	Mode	M	Status-only
Beh	ABB_a_dINS	Behaviour	M	
Health	ABB_c_dINS	Health	M	
NamPit	ABB_a_dLPL	Name plate	M	
Status Information				
Op	ABB_b_dACT	Operate	O	
StrInh	ABB_a_dSPS	Restart inhibited	E	
StrInhTmm	ABB_b_dINS	Restart inhibition time	E	
TmsCumStUp	ABB_v2_dMV	Cumulated start-up time in sec	E	
TmsStUp	ABB_v2_dMV	Measured motor latest startup time in sec	E	
StUpCnt	ABB_v1_dINS	Number of motor start-ups occurred	E	
ThmStsPct	ABB_v2_dMV	Thermal stress relative to set maximum thermal stress	E	

3.2.80

STTPMSS

Table 97: STTPMSS

Attribute name	DATA type	Explanation	M/O/E	Remarks
PMSS class				
PMSS		Motor startup supervision, start time and cumulative start time	M	
Data				
Common Logical Node Information				
Mod	ABB_c_dINC	Mode	M	Status-only
Beh	ABB_a_dINS	Behaviour	M	
Health	ABB_c_dINS	Health	M	
NamPit	ABB_a_dLPL	Name plate	M	
Status Information				
Str	ABB_d_dACD	Start	O	
Op	ABB_b_dACT	Operate	O	
StrDur	ABB_v2_dMV	Start duration	E	

3.2.81

VVSPAM

Table 98: VVSPAM

Attribute name	DATA type	Explanation	M/O/E	Remarks
PMSS class				
PPAM		Voltage vector shift protection	M	
Data				
Common Logical Node Information				
Mod	ABB_a_dINC	Mode	M	
Beh	ABB_a_dINS	Behaviour	M	
Health	ABB_c_dINS	Health	M	
NamPlt	ABB_a_dLPL	Name plate	M	
Status Information				
Str	ABB_d_dACD	Start	O	
Op	ABB_b_dACT	Operate	O	
BlkInSt	ABB_v1_dSPS	Protection function internally blocked	E	
VShtPhA	ABB_v2_dMV	Vector shift for phase to earth voltage A or phase to phase voltage AB	E	
VShtPhB	ABB_v2_dMV	Vector shift for phase to earth voltage B or phase to phase voltage BC	E	

3.2.82

CRWPSCH

Table 99: CRWPSCH

Attribute name	DATA type	Explanation	M/O/E	Remarks
PSCH class				
PSCH		Current reversal and weak-end infeed logic for distance protection	M	
Data				
Common Logical Node Information				
Mod	ABB_a_dINC	Mode	M	
Beh	ABB_a_dINS	Behaviour	M	
Health	ABB_c_dINS	Health	M	
NamPlt	ABB_a_dLPL	Name plate	M	
Status Information				
ProTx	ABB_a_dSPS	Teleprotection signal transmitted	M	
ProRx	ABB_a_dSPS	Teleprotection signal received	M	
Str	ABB_b_dACD	Carrier Send	M	
Table continues on next page				

Attribute name	DATA type	Explanation	M/O/E	Remarks
Op	ABB_b_dACT	Operate	M	
Echo	ABB_b_dACT	Echo signal from weak end infeed function	O	
WeiOp	ABB_b_dACT	Operate signal from weak end infeed function	O	
RvABlk	ABB_b_dACT	Block signal from current reversal function	O	

3.2.83

DSOCPSCH

Table 100: *DSOCPSCH*

Attribute name	DATA type	Explanation	M/O/E	Remarks
PSCH class				
PSCH		Scheme communication logic for distance or overcurrent	M	
Data				
Common Logical Node Information				
Mod	ABB_a_dINC	Mode	M	
Beh	ABB_a_dINS	Behaviour	M	
Health	ABB_c_dINS	Health	M	
NamPlt	ABB_a_dLPL	Name plate	M	
Status Information				
ProTx	ABB_a_dSPS	Teleprotection signal transmitted	M	
ProRx	ABB_a_dSPS	Teleprotection signal received	M	
Str	ABB_b_dACD	Carrier Send	M	
Op	ABB_b_dACT	Operate	M	
CarRx	ABB_b_dACT	Carrier received after unblock logic	O	
LosOfGrd	ABB_a_dSPS	Loss of guard	O	

3.2.84

RCRWPSCH

Table 101: *RCRWPSCH*

Attribute name	DATA type	Explanation	M/O/E	Remarks
PSCH class				
PSCH		Current reversal and weak-end infeed logic for residual over-current protection	M	
Data				
Common Logical Node Information				
Mod	ABB_a_dINC	Mode	M	
Table continues on next page				

Attribute name	DATA type	Explanation	M/O/E	Remarks
Beh	ABB_a_dINS	Behaviour	M	
Health	ABB_c_dINS	Health	M	
NamPlt	ABB_a_dLPL	Name plate	M	
Status Information				
ProTx	ABB_a_dSPS	Teleprotection signal transmitted	M	
ProRx	ABB_a_dSPS	Teleprotection signal received	M	
Str	ABB_b_dACD	Carrier Send	M	
Op	ABB_b_dACT	Operate	M	
Echo	ABB_b_dACT	Echo signal from weak-end infeed function	O	
WeiOp	ABB_b_dACT	Operate signal from weak-end infeed function	O	
RvABlk	ABB_b_dACT	Block signal from current reversal function	O	

3.2.85

RESCPSCH

Table 102: RESCPSCH

Attribute name	DATA type	Explanation	M/O/E	Remarks
PSCH class				
PSCH		Scheme communication logic for residual overcurrent protection	M	
Data				
Common Logical Node Information				
Mod	ABB_a_dINC	Mode	M	
Beh	ABB_a_dINS	Behaviour	M	
Health	ABB_c_dINS	Health	M	
NamPlt	ABB_a_dLPL	Name plate	M	
Status Information				
ProTx	ABB_a_dSPS	Teleprotection signal transmitted	M	
ProRx	ABB_a_dSPS	Teleprotection signal received	M	
Str	ABB_b_dACD	Carrier Send	M	
Op	ABB_b_dACT	Operate	M	
CarRx	ABB_b_dACT	Carrier received after unblock logic	O	
LosOfGrd	ABB_a_dSPS	Loss of guard	O	

3.2.86

WPSDE

Table 103: WPSDE

Attribute name	DATA type	Explanation	M/O/E	Remarks
PSDE class				
PSDE		Wattmetric directional earth fault protection	M	
Data				
Common Logical Node Information				
Mod	ABB_c_dINC	Mode	M	Status-only
Beh	ABB_a_dINS	Behaviour	M	
Health	ABB_c_dINS	Health	M	
NamPit	ABB_a_dLPL	Name plate	M	
Status Information				
Str	ABB_d_dACD	Start	M	
Op	ABB_b_dACT	Operate	O	
StrDur	ABB_v2_dMV	Start duration	E	

3.2.87

MFADPSDE

Table 104: MFADPSDE

Attribute name	DATA type	Explanation	M/O/E	Remarks
PSDE Class				
PSDE		Multi-frequency admittance protection	M	
Data				
Common Logical Node Information				
Mod	ABB_c_dINC	Mode	M	Status-only
Beh	ABB_a_dINS	Behaviour	M	
Health	ABB_c_dINS	Health	M	
NamPit	ABB_d_dLPL	Name plate	M	
Status Information				
Str	ABB_d_dACD	Start	M	
Op	ABB_b_dACT	Operate	O	
InhEF	ABB_v1_dSPS	Block signal for EF to indicate opposite fault direction	E	
ItmEFInd	ABB_v1_dSPS	Intermittent earth-fault indication	E	
PkInd	ABB_v1_dSPS	Current transient detection indication	E	
StrDur	ABB_v2_dMV	Start duration	E	

3.2.88

INTRPTEF

Table 105: *INTRPTEF*

Attribute name	DATA type	Explanation	M/O/E	Remarks
PTEF class				
PTEF		Intermittend earth-fault protection	M	
Data				
Common Logical Node Information				
Mod	ABB_a_dINC	Mode	M	
Beh	ABB_a_dINS	Behaviour	M	
Health	ABB_c_dINS	Health	M	
NamPlt	ABB_a_dLPL	Name plate	M	
Status Information				
Str	ABB_d_dACD	Start	C	
Op	ABB_b_dACT	Operate	C	
InhEF	ABB_v1_dSPS	Inhibite / block for other EF functions	E	

3.2.89

DEFPTOC

Table 106: *DEFPTOC*

Attribute name	DATA type	Explanation	M/O/E	Remarks
PTOC class				
PTOC		Directional earth-fault protection, high or low stage	M	
Data				
Common Logical Node Information				
Mod	ABB_c_dINC	Mode	M	Status-only
Beh	ABB_a_dINS	Behaviour	M	
Health	ABB_c_dINS	Health	M	
NamPlt	ABB_a_dLPL	Name plate	M	
Status Information				
Str	ABB_d_dACD	Start	M	
Op	ABB_b_dACT	Operate	M	
IvdCrv	ABB_v1_dSPS	Invalid coefficients for user programmable curve	E	
StrDur	ABB_v2_dMV	Start duration	E	

3.2.90 DPHPTOC

Table 107: DPHPTOC

Attribute name	DATA type	Explanation	M/O/E	Remarks
PTOC class				
PTOC		Directional phase overcurrent, high or low stage	M	
Data				
Common Logical Node Information				
Mod	ABB_c_dINC	Mode	M	Status-only
Beh	ABB_a_dINS	Behaviour	M	
Health	ABB_c_dINS	Health	M	
NamPit	ABB_a_dLPL	Name plate	M	
Status Information				
Str	ABB_c_dACD	Start	M	
Op	ABB_a_dACT	Operate	M	
IvdCrv	ABB_v1_dSPS	Invalid coefficients for user programmable curve	E	
StrDur	ABB_v2_dMV	Start duration	E	

3.2.91 EFHPTOC

Table 108: EFHPTOC

Attribute name	DATA type	Explanation	M/O/E	Remarks
PTOC class				
PTOC		Non-directional earth-fault protection, high stage	M	
Data				
Common Logical Node Information				
Mod	ABB_a_dINC	Mode	M	
Beh	ABB_a_dINS	Behaviour	M	
Health	ABB_c_dINS	Health	M	
NamPit	ABB_a_dLPL	Name plate	M	
Status Information				
Str	ABB_d_dACD	Start	M	
Op	ABB_b_dACT	Operate	M	
IvdCrv	ABB_v1_dSPS	Invalid coefficients for user programmable curve	E	
StrDur	ABB_v2_dMV	Start duration	E	

3.2.92

EFIPTOC

Table 109: *EFIPTOC*

Attribute name	DATA type	Explanation	M/O/E	Remarks
PTOC class				
PTOC		Non-directional earth-fault protection, instantaneous stage	M	
Data				
Common Logical Node Information				
Mod	ABB_a_dINC	Mode	M	
Beh	ABB_a_dINS	Behaviour	M	
Health	ABB_c_dINS	Health	M	
NamPlt	ABB_a_dLPL	Name plate	M	
Status Information				
Str	ABB_d_dACD	Start	M	
Op	ABB_b_dACT	Operate	M	
StrDur	ABB_v2_dMV	Start duration	E	

3.2.93

EFLPTOC

Table 110: *EFLPTOC*

Attribute name	DATA type	Explanation	M/O/E	Remarks
PTOC class				
PTOC		Non-directional earth-fault protection, low stage	M	
Data				
Common Logical Node Information				
Mod	ABB_a_dINC	Mode	M	
Beh	ABB_a_dINS	Behaviour	M	
Health	ABB_c_dINS	Health	M	
NamPlt	ABB_a_dLPL	Name plate	M	
Status Information				
Str	ABB_d_dACD	Start	M	
Op	ABB_b_dACT	Operate	M	
StrDur	ABB_v2_dMV	Start duration	E	
IvdCrv	ABB_v1_dSPS	Invalid coefficients for user programmable curve	E	

3.2.94 HAEFPTOC

Table 111: HAEFPTOC

Attribute name	DATA type	Explanation	M/O/E	Remarks
PTOC class				
PTOC		Harmonics earth-fault protection	M	
Data				
Common Logical Node Information				
Mod	ABB_a_dINC	Mode	M	
Beh	ABB_a_dINS	Behaviour	M	
Health	ABB_c_dINS	Health	M	
NamPlt	ABB_a_dLPL	Name plate	M	
Status Information				
Str	ABB_d_dACD	Start	M	
Op	ABB_b_dACT	Operate	M	
BlkARef	ABB_v2_dSPS	Blocked by reference current	E	
StrDur	ABB_v2_dMV	Start duration	E	

3.2.95 JAMPTOC

Table 112: JAMPTOC

Attribute name	DATA type	Explanation	M/O/E	Remarks
PTOC class				
PTOC		Motor running time jam protection	M	
Data				
Common Logical Node Information				
Mod	ABB_a_dINC	Mode	M	
Beh	ABB_a_dINS	Behaviour	M	
Health	ABB_c_dINS	Health	M	
NamPlt	ABB_a_dLPL	Name plate	M	
Status Information				
Str	ABB_b_dACD	Start	M	
Op	ABB_b_dACT	Operate	M	
StrDur	ABB_v2_dMV	Start duration	E	

3.2.96

MNSPTOC Revision 1

Table 113: MNSPTOC Revision 1

Attribute name	DATA type	Explanation	M/O/E	Remarks
PTOC class				
PTOC		Negative-phase-sequence time overcurrent protection for machines	M	
Data				
Common Logical Node Information				
Mod	ABB_a_dINC	Mode	M	
Beh	ABB_a_dINS	Behaviour	M	
Health	ABB_c_dINS	Health	M	
NamPlt	ABB_a_dLPL	Name plate	M	
Status Information				
Str	ABB_d_dACD	Start	M	
Op	ABB_b_dACT	Operate	M	
StrDur	ABB_v2_dMV	Start duration	E	
StrInh	ABB_a_dSPS	Restart inhibited	E	
TmsRecEna	ABB_v1_dINS	Estimated time to reset of block restart in seconds	E	

3.2.97

MRE1PTOC

Table 114: MRE1PTOC

Attribute name	DATA type	Explanation	M/O/E	Remarks
PTOC class				
PTOC		Rotor earth-fault protection, alarm stage	M	
Data				
Common Logical Node Information				
Mod	ABB_c_dINC	Mode	M	
Beh	ABB_a_dINS	Behaviour	M	
Health	ABB_c_dINS	Health	M	
NamPlt	ABB_d_dLPL	Name plate	M	
Status Information				
Str	ABB_d_dACD	Start	M	
Op	ABB_b_dACT	Operate	M	

3.2.98

MRE2PTOC

Table 115: MRE2PTOC

Attribute name	DATA type	Explanation	M/O/E	Remarks
PTOC class				
PTOC		Rotor earth-fault protection, operate stage	M	
Data				
Common Logical Node Information				
Mod	ABB_c_dINC	Mode	M	
Beh	ABB_a_dINS	Behaviour	M	
Health	ABB_c_dINS	Health	M	
NamPlt	ABB_d_dLPL	Name plate	M	
Status Information				
Str	ABB_d_dACD	Start	M	
Op	ABB_b_dACT	Operate	M	

3.2.99

NSPTOC

Table 116: NSPTOC

Attribute name	DATA type	Explanation	M/O/E	Remarks
PTOC class				
PTOC		Negative-sequence overcurrent protection	M	
Data				
Common Logical Node Information				
Mod	ABB_a_dINC	Mode	M	
Beh	ABB_a_dINS	Behaviour	M	
Health	ABB_c_dINS	Health	M	
NamPlt	ABB_a_dLPL	Name plate	M	
Status Information				
Str	ABB_d_dACD	Start	M	
Op	ABB_b_dACT	Operate	M	
StrDur	ABB_v2_dMV	Start duration	E	

3.2.100

PDNSPTOC

Table 117: PDNSPTOC

Attribute name	DATA type	Explanation	M/O/E	Remarks
PTOC class				
PTOC		Phase discontinuity protection based on I2/I1 ratio	M	
Data				
Common Logical Node Information				
Mod	ABB_a_dINC	Mode	M	
Beh	ABB_a_dINS	Behaviour	M	
Health	ABB_c_dINS	Health	M	
NamPlt	ABB_a_dLPL	Name plate	M	
Status Information				
Str	ABB_d_dACD	Start	M	
Op	ABB_b_dACT	Operate	M	
StrDur	ABB_v2_dMV	Start duration	E	
ImbNgA	ABB_b_dMV	Imbalance negative sequence current	E	

3.2.101

PHHPTOC

Table 118: PHHPTOC

Attribute name	DATA type	Explanation	M/O/E	Remarks
PTOC class				
PTOC		Non-directional phase overcurrent, high stage	M	
Data				
Common Logical Node Information				
Mod	ABB_a_dINC	Mode	M	
Beh	ABB_a_dINS	Behaviour	M	
Health	ABB_c_dINS	Health	M	
NamPlt	ABB_a_dLPL	Name plate	M	
Status Information				
Str	ABB_c_dACD	Start	M	
Op	ABB_a_dACT	Operate	M	
IvdCrv	ABB_v1_dSPS	Invalid coefficients for user programmable curve	E	
StrDur	ABB_v2_dMV	Start duration	E	

3.2.102

PHIPTOC

Table 119: PHIPTOC

Attribute name	DATA type	Explanation	M/O/E	Remarks
PTOC class				
PTOC		Non-directional phase overcurrent, instantaneous stage	M	
Data				
Common Logical Node Information				
Mod	ABB_a_dINC	Mode	M	
Beh	ABB_a_dINS	Behaviour	M	
Health	ABB_c_dINS	Health	M	
NamPlt	ABB_a_dLPL	Name plate	M	
Status Information				
Str	ABB_c_dACD	Start	M	
Op	ABB_a_dACT	Operate	M	
StrDur	ABB_v2_dMV	Start duration	E	

3.2.103

PHLPTOC

Table 120: PHLPTOC

Attribute name	DATA type	Explanation	M/O/E	Remarks
PTOC class				
PTOC		Non-directional phase overcurrent, low stage	M	
Data				
Common Logical Node Information				
Mod	ABB_a_dINC	Mode	M	
Beh	ABB_a_dINS	Behaviour	M	
Health	ABB_c_dINS	Health	M	
NamPlt	ABB_a_dLPL	Name plate	M	
Status Information				
Str	ABB_c_dACD	Start	M	
Op	ABB_a_dACT	Operate	M	
IvdCrv	ABB_v1_dSPS	Invalid coefficients for user programmable curve	E	
StrDur	ABB_v2_dMV	Start duration	E	

3.2.104 **PREVPTOC**Table 121: *PREVPTOC*

Attribute name	DATA type	Explanation	M/O/E	Remarks
PTOC class				
PTOC		Motor phase reversal protection	M	
Data				
Common Logical Node Information				
Mod	ABB_a_dINC	Mode	M	
Beh	ABB_a_dINS	Behaviour	M	
Health	ABB_c_dINS	Health	M	
NamPlt	ABB_a_dLPL	Name plate	M	
Status Information				
Str	ABB_d_dACD	Start	M	
Op	ABB_b_dACT	Operate	M	
StrDur	ABB_v2_dMV	Start duration	E	

3.2.105 **DAPTOF**Table 122: *DAPTOF*

Attribute name	DATA type	Explanation	M/O/E	Remarks
PTOF class				
PTOF		Overfrequency protection	M	
Data				
Common Logical Node Information				
Mod	ABB_a_dINC	Mode	M	
Beh	ABB_a_dINS	Behaviour	M	
Health	ABB_c_dINS	Health	M	
NamPlt	ABB_a_dLPL	Name plate	M	
Status Information				
Str	ABB_d_dACD	Start	M	
Op	ABB_b_dACT	Operate	M	
BlkV	ABB_a_dSPS	Blocked because of voltage	O	
StrDur	ABB_v2_dMV	Start duration	E	

3.2.106

H3EFPTOV

Table 123: H3EFPTOV

Attribute name	DATA type	Explanation	M/O/E	Remarks
PTOV class				
PTOV		Third harmonic -based differential overvoltage protection	M	
Data				
Common Logical Node Information				
Mod	ABB_c_dINC	Mode	M	Status-only
Beh	ABB_a_dINS	Behaviour	M	
Health	ABB_c_dINS	Health	M	
NamPlt	ABB_a_dLPL	Name plate	M	
Status Information				
Str	ABB_d_dACD	Start	M	
Op	ABB_b_dACT	Operate	O	
BlkInSt	ABB_v2_dACT	Protection internally blocked	E	
Dif3HV	ABB_v2_dMV	3rd harmonic differential voltage amplitude	E	
Bias3HV	ABB_v2_dMV	3rd harmonic bias voltage amplitude	E	
Term3HV	ABB_v2_dMV	Terminal side 3rd harmonic voltage amplitude	E	
N3HV	ABB_v2_dMV	Neutral side 3rd harmonic voltage amplitude	E	
Ang3HVTerN	ABB_v2_dMV	Phase angle between 3rd harmonic terminal and neutral voltage	E	
StrDur	ABB_v2_dMV	Ratio of start time/operate time (in %)	E	

3.2.107

NSPTOV

Table 124: NSPTOV

Attribute name	DATA type	Explanation	M/O/E	Remarks
PTOV class				
PTOV		Negative-sequence overvoltage protection	M	
Data				
Common Logical Node Information				
Mod	ABB_a_dINC	Mode	M	
Beh	ABB_a_dINS	Behaviour	M	
Health	ABB_c_dINS	Health	M	
Table continues on next page				

Attribute name	DATA type	Explanation	M/O/E	Remarks
NamPlt	ABB_a_dLPL	Name plate	M	
Status Information				
Str	ABB_d_dACD	Start	M	
Op	ABB_b_dACT	Operate	O	
StrDur	ABB_v2_dMV	Start duration	E	

3.2.108

PSPTOV

Table 125: PSPTOV

Attribute name	DATA type	Explanation	M/O/E	Remarks
PTOV class				
PTOV		Positive-sequence overvoltage protection	M	
Data				
Common Logical Node Information				
Mod	ABB_a_dINC	Mode	M	
Beh	ABB_a_dINS	Behaviour	M	
Health	ABB_c_dINS	Health	M	
NamPlt	ABB_a_dLPL	Name Plate	M	
Status Information				
Str	ABB_d_dACD	Start	M	
Op	ABB_b_dACT	Operate	O	
StrDur	ABB_v2_dMV	Start duration	E	

3.2.109

PHPTOV

Table 126: PHPTOV

Attribute name	DATA type	Explanation	M/O/E	Remarks
PTOV class				
PTOV		Three phase overvoltage protection	M	
Data				
Common Logical Node Information				
Mod	ABB_a_dINC	Mode	M	
Beh	ABB_a_dINS	Behaviour	M	
Health	ABB_c_dINS	Health	M	
NamPlt	ABB_a_dLPL	Name Plate	M	
Status Information				
Str	ABB_c_dACD	Start	M	
Table continues on next page				

Attribute name	DATA type	Explanation	M/O/E	Remarks
Op	ABB_a_dACT	Operate	O	
StrDur	ABB_v2_dMV	Start duration	E	
VMax	ABB_v2_dMV	Maximum voltage of the supervised phases	E	
VMaxRat	ABB_v2_dMV	Maximum voltage ratio to the Start value	E	

3.2.110

ROVPTOV

Table 127: ROVPTOV

Attribute name	DATA type	Explanation	M/O/E	Remarks
PTOV class				
PTOV		Residual overvoltage protection	M	
Data				
Common Logical Node Information				
Mod	ABB_a_dINC	Mode	M	
Beh	ABB_a_dINS	Behaviour	M	
Health	ABB_c_dINS	Health	M	
NamPlt	ABB_a_dLPL	Name plate	M	
Status Information				
Str	ABB_d_dACD	Start	M	
Op	ABB_b_dACT	Operate	O	
StrDur	ABB_v2_dMV	Start duration	E	

3.2.111

H3EFPTRC

Table 128: H3EFPTRC

Attribute name	DATA type	Explanation	M/O/E	Remarks
PTRC class				
PTRC		Third Harmonic based stator earth fault, Trip logic	M	
Data				
Common Logical Node Information				
Mod	ABB_c_dINC	Mode	M	Status-only
Beh	ABB_a_dINS	Behaviour	M	
Health	ABB_c_dINS	Health	M	
NamPlt	ABB_d_dLPL	Name plate	M	
Status Information				
Str	ABB_d_dACD	Start	M	
Op	ABB_b_dACT	Operate (combination of subscribed Op from protection functions)	O	

3.2.112 LSHDPTRC

Table 129: LSHDPTRC

Attribute name	DATA type	Explanation	M/O/E	Remarks
PTRC class				
PTRC		Load shedding, trip logic	M	
Data				
Common Logical Node Information				
Mod	ABB_c_dINC	Mode	M	Status-only
Beh	ABB_a_dINS	Behaviour	M	
Health	ABB_c_dINS	Health	M	
NamPlt	ABB_a_dLPL	Name plate	M	
Status Information				
Op	ABB_b_dACT	Operate (combination of subscribed Op from protection functions)	C	
Str	ABB_d_dACD	Sum of all starts of all connected Logical Nodes	O	
RestLodStr	ABB_v3_dACD	Start of restore	E	
RestLodOp	ABB_v2_dACT	Restore the load	E	
StrDur	ABB_v2_dMV	Start duration	E	
ManRest	ABB_v1_dSPC	Manual restore	E	Controllable

3.2.113 TRPPTRC

Table 130: TRPPTRC

Attribute name	DATA type	Explanation	M/O/E	Remarks
PTRC class				
PTRC		Trip conditioning logic	M	
Data				
Common Logical Node Information				
Mod	ABB_a_dINC	Mode	M	
Beh	ABB_a_dINS	Behaviour	M	
Health	ABB_c_dINS	Health	M	
NamPlt	ABB_a_dLPL	Name plate	M	
Status Information				
Tr	ABB_b_dACT	Trip	C	
LORs	ABB_v1_dSPC	Reset lockout	E	Controllable
ClsLO	ABB_v1_dSPS	Close lockout	E	

3.2.114

MPTR

Table 131: *MPTR*

Attribute name	DATA type	Explanation	M/O/E	Remarks
PTTR class				
PTTR		Thermal overload protection for motors	M	
Data				
Common Logical Node Information				
Mod	ABB_a_dINC	Mode	M	
Beh	ABB_a_dINS	Behaviour	M	
Health	ABB_c_dINS	Health	M	
NamPit	ABB_a_dLPL	Name plate	M	
Status Information				
Op	ABB_b_dACT	Operate	M	
AlmThm	ABB_a_dSPS	Thermal Alarm	O	
StrInh	ABB_a_dSPS	Restart inhibited	E	
SenFlt	ABB_v1_dSPS	Error signal of the temperature sensor	E	
TmsRecEna	ABB_v1_dINS	Estimated time to reset of block restart	E	
ThmDev	ABB_v2_dMV	Thermal level of the device	E	
TmpUsed	ABB_v2_dMV	Ambient temperature used in calculations	E	
ThmLevSt	ABB_v2_dMV	Thermal level at beginning of overload condition	E	
ThmLevEnd	ABB_v2_dMV	Thermal level at end of overload condition	E	
RsTmp	ABB_v1_dSPC	Reset thermal counter	E	Controllable

3.2.115

T1PTTR

Table 132: *T1PTTR*

Attribute name	DATA type	Explanation	M/O/E	Remarks
PTTR class				
PTTR		Thermal overload 1 time constants	M	
Data				
Common Logical Node Information				
Mod	ABB_a_dINC	Mode	M	
Beh	ABB_a_dINS	Behaviour	M	
Health	ABB_c_dINS	Health	M	
NamPit	ABB_a_dLPL	Name plate	M	
Table continues on next page				

Attribute name	DATA type	Explanation	M/O/E	Remarks
Status Information				
Tmp	ABB_b_dMV	Temperature for thermal load	O	
TmpRI	ABB_b_dMV	Relation between temperature and max. temperature	O	
Str	ABB_d_dACD	Start	O	
Op	ABB_b_dACT	Operate	M	
AlmThm	ABB_a_dSPS	Thermal Alarm	O	
TmpUsed	ABB_v2_dMV	Ambient temperature used in the calculations	E	
TmmOp	ABB_v1_dINS	Estimated time to operate in minutes	E	
TmmRecEna	ABB_v1_dINS	Estimated time to deactivate InhRec in minutes	E	
RsTmp	ABB_v1_dSPC	Reset thermal counter	E	Controllable
InhRec	ABB_v1_dSPS	Thermal overload indicator, to inhibit reclose	E	
SenFit	ABB_v1_dSPS	Error signal from the temperature sensor	E	

3.2.116

T2PTTR

Table 133: T2PTTR

Attribute name	DATA type	Explanation	M/O/E	Remarks
PTTR class				
PTTR		Thermal overload 2 time constants for transformers	M	
Data				
Common Logical Node Information				
Mod	ABB_a_dINC	Mode	M	
Beh	ABB_a_dINS	Behaviour	M	
Health	ABB_c_dINS	Health	M	
NamPlt	ABB_a_dLPL	Name plate	M	
Status Information				
Tmp	ABB_b_dMV	Temperature for thermal load	O	
TmpRI	ABB_b_dMV	Relation between temperature and max. temperature	O	
Str	ABB_d_dACD	Start	O	
Op	ABB_b_dACT	Operate	M	
AlmThm	ABB_a_dSPS	Thermal Alarm	O	
RsTmp	ABB_v1_dSPC	Reset thermal counter	E	Controllable
InhRec	ABB_v1_dSPS	Thermal overload indicator, to inhibit reclose	E	
Table continues on next page				

Attribute name	DATA type	Explanation	M/O/E	Remarks
SenFit	ABB_v1_dSPS	Error signal from the temperature sensor	E	
TmpUsed	ABB_v2_dMV	Ambient temperature used in the calculations	E	
TmsOp	ABB_v1_dINS	Estimated time to operate in seconds.	E	
TmsRecEna	ABB_v1_dINS	Estimated time to deactivate InhRec in seconds	E	

3.2.117

LOFLPTUC

Table 134: LOFLPTUC

Attribute name	DATA type	Explanation	M/O/E	Remarks
PTUC class				
PTUC		Loss of load protection	M	
Data				
Common Logical Node Information				
Mod	ABB_a_dINC	Mode	M	
Beh	ABB_a_dINS	Behaviour	M	
Health	ABB_c_dINS	Health	M	
NamPlt	ABB_a_dLPL	Name plate	M	
Status Information				
Str	ABB_d_dACD	Start	M	
Op	ABB_b_dACT	Operate	M	
StrDur	ABB_v2_dMV	Start duration	E	

3.2.118

DAPTUF

Table 135: DAPTUF

Attribute name	DATA type	Explanation	M/O/E	Remarks
PTUF class				
PTUF		Underfrequency protection	M	
Data				
Common Logical Node Information				
Mod	ABB_a_dINC	Mode	M	
Beh	ABB_a_dINS	Behaviour	M	
Health	ABB_c_dINS	Health	M	
NamPlt	ABB_a_dLPL	Name plate	M	
Status Information				
Str	ABB_d_dACD	Start	M	
Table continues on next page				

Attribute name	DATA type	Explanation	M/O/E	Remarks
Op	ABB_b_dACT	Operate	M	
BlkV	ABB_a_dSPS	Blocked because of voltage	O	
StrDur	ABB_v2_dMV	Start duration	E	
RestLodOp	ABB_v2_dACT	Restore the load	E	

3.2.119

LSHDPTUF

Table 136: LSHDPTUF

Attribute name	DATA type	Explanation	M/O/E	Remarks
PTUF class				
PTUF		Load-shedding, under frequency	M	
Data				
Common Logical Node Information				
Mod	ABB_c_dINC	Mode	M	Status-only
Beh	ABB_a_dINS	Behaviour	M	
Health	ABB_c_dINS	Health	M	
NamPlt	ABB_a_dLPL	Name plate	M	
Status Information				
Str	ABB_d_dACD	Start	M	
Op	ABB_b_dACT	Operate	M	

3.2.120

DQPTUV

Table 137:

Attribute name	DATA type	Explanation	M/O/E	Remarks
PTUF class				
PTUF		Directional reactive power under voltage protection	M	
Data				
Common Logical Node Information				
Mod	ABB_c_dINC	Mode	M	Status-only
Beh	ABB_a_dINS	Behaviour	M	
Health	ABB_c_dINS	Health	M	
NamPlt	ABB_a_dLPL	Name plate	M	
Status Information				
Str	ABB_d_dACD	Start	M	
Op	ABB_b_dACT	Operate	M	
StrDur	ABB_v2_dMV	Start duration	E	

3.2.121

H3EFPTUV

Table 138: H3EFPTUV

Attribute name	DATA type	Explanation	M/O/E	Remarks
PTUV class				
PTUV		Third harmonic -based, undervoltage protection	M	
Data				
Common Logical Node Information				
Mod	ABB_c_dINC	Mode	M	Status-only
Beh	ABB_a_dINS	Behaviour	M	
Health	ABB_c_dINS	Health	M	
NamPlt	ABB_d_dLPL	Name plate	M	
Status Information				
Str	ABB_d_dACD	Start	M	
Op	ABB_b_dACT	Operate	M	

3.2.122

LVRTPTUV

Table 139: LVRTPTUV

Attribute name	DATA type	Explanation	M/O/E	Remarks
PTUF class				
PTUF		Low voltage ride through protection function	M	
Data				
Common Logical Node Information				
Mod	ABB_a_dINC	Mode	M	Status-only
Beh	ABB_a_dINS	Behaviour	M	
Health	ABB_c_dINS	Health	M	
NamPlt	ABB_d_dLPL	Name plate	M	
Status Information				
Str	ABB_d_dACD	Start	M	
Op	ABB_b_dACT	Operate	M	

3.2.123

PHPTUV

Table 140: PHPTUV

Attribute name	DATA type	Explanation	M/O/E	Remarks
PTUV class				
PTUV		Three phase undervoltage protection	M	
Data				
Common Logical Node Information				
Mod	ABB_a_dINC	Mode	M	
Beh	ABB_a_dINS	Behaviour	M	
Health	ABB_c_dINS	Health	M	
NamPlt	ABB_a_dLPL	Name plate	M	
Status Information				
Str	ABB_c_dACD	Start	M	
Op	ABB_a_dACT	Operate	M	
StrDur	ABB_v2_dMV	Start duration	E	
VMin	ABB_v2_dMV	Minimum voltage of the supervised phases	E	
VMinRat	ABB_v2_dMV	Minimum voltage ratio to the Start value	E	

3.2.124

PSPTUV

Table 141: PSPTUV

Attribute name	DATA type	Explanation	M/O/E	Remarks
PTUV class				
PTUV		Positive-sequence undervoltage protection	M	
Data				
Common Logical Node Information				
Mod	ABB_a_dINC	Mode	M	
Beh	ABB_a_dINS	Behaviour	M	
Health	ABB_c_dINS	Health	M	
NamPlt	ABB_a_dLPL	Name plate	M	
Status Information				
Str	ABB_d_dACD	Start	M	
Op	ABB_b_dACT	Operate	M	
StrDur	ABB_v2_dMV	Start duration	E	

3.2.125

PHPVOC

Table 142: PHPVOC

Attribute name	DATA type	Explanation	M/O/E	Remarks
PVPH class				
PVPH		Overexcitation protection	M	
Data				
Common Logical Node Information				
Mod	ABB_a_dINC	Mode	M	
Beh	ABB_a_dINS	Behaviour	M	
Health	ABB_c_dINS	Health	M	
NamPlt	ABB_a_dLPL	Name plate	M	
Status Information				
Str	ABB_c_dACD	Start	M	
Op	ABB_a_dACT	Operate	M	
StrDur	ABB_v2_dMV	Start duration	E	
EffStrVal	ABB_v3_dWYE	Calculated effective start value	E	

3.2.126

OEPVPH

Table 143: OEPVPH

Attribute name	DATA type	Explanation	M/O/E	Remarks
PVPH class				
PVPH		Overexcitation protection	M	
Data				
Common Logical Node Information				
Mod	ABB_a_dINC	Mode	M	
Beh	ABB_a_dINS	Behaviour	M	
Health	ABB_c_dINS	Health	M	
NamPlt	ABB_d_dLPL	Name plate	M	
Status Information				
Op	ABB_b_dACT	Operate	M	
Str	ABB_b_dACD	Start	M	
CoolAct	ABB_v1_dSPS	Cooling active signal	E	
StrDur	ABB_v2_dMV	Start duration	E	
StrInh	ABB_a_dSPS	Restart inhibited	E	
TmsRecEna	ABB_v1_dINS	Estimated time to reset of block restart in seconds	E	
VHzRat	ABB_v2_dMV	Relative voltage to frequency ratio	E	

3.2.127

DEFDIR

Table 144: DEFDIR

Attribute name	DATA type	Explanation	M/O/E	Remarks
RDIR class				
RDIR		Directional element used for directional earth fault protection.	M	
Data				
Common Logical Node Information				
Mod	ABB_c_dINC	Mode	M	Status-only
Beh	ABB_a_dINS	Behaviour	M	
Health	ABB_c_dINS	Health	M	
NamPlt	ABB_a_dLPL	Name plate	M	
Status Information				
Dir	ABB_b_dACD	Direction	M	
OpAEF	ABB_v2_dMV	Operating current for EF protection	E	
OpPolAng	ABB_v2_dMV	Angle between operating and polarizing quantity	E	
OpChrAng	ABB_v2_dMV	Angle between operating angle and relay characteristic angle	E	

3.2.128

DPHRDIR

Table 145: DPHRDIR

Attribute name	DATA type	Explanation	M/O/E	Remarks
RDIR class				
RDIR		Directional element used for directional overcurrent protection.	M	
Data				
Common Logical Node Information				
Mod	ABB_c_dINC	Mode	M	Status-only
Beh	ABB_a_dINS	Behaviour	M	
Health	ABB_c_dINS	Health	M	
NamPlt	ABB_a_dLPL	Name plate	M	
Status Information				
Dir	ABB_a_dACD	Direction	M	

3.2.129

DSTRDIR

Table 146: DSTRDIR

Attribute name	DATA type	Explanation	M/O/E	Remarks
RDIR class				
RDIR		Directional element used for all zones in distribution distance protection	M	
Data				
Common Logical Node Information				
Mod	ABB_c_dINC	Mode	M	Status-only
Beh	ABB_a_dINS	Behaviour	M	
Health	ABB_c_dINS	Health	M	
NamPlt	ABB_a_dLPL	Name plate	M	
Status Information				
Dir	ABB_b_dACD	Direction	M	

3.2.130

GFCRDIR

Table 147: GFCRDIR

Attribute name	DATA type	Explanation	M/O/E	Remarks
RDIR class				
RDIR		Directional element used for general fault criteria for distribution distance protection	M	
Data				
Common Logical Node Information				
Mod	ABB_c_dINC	Mode	M	Status-only
Beh	ABB_a_dINS	Behaviour	M	
Health	ABB_c_dINS	Health	M	
NamPlt	ABB_a_dLPL	Name plate	M	
Status Information				
Dir	ABB_b_dACD	Direction	M	

3.2.131

MFADRDIR

Table 148: MFADRDIR

Attribute name	DATA type	Explanation	M/O/E	Remarks
RDIR class				
RDIR		Directional element used for multi-frequency admittance protection	M	
Data				
Common Logical Node Information				
Mod	ABB_c_dINC	Mode	M	Status-only
Beh	ABB_a_dINS	Behaviour	M	
Health	ABB_c_dINS	Health	M	
NamPlt	ABB_d_dLPL	Name plate	M	
Status Information				
Dir	ABB_b_dACD	Direction	M	
OpPolAng	ABB_v2_dMV	Angle between operating and polarizing quantity	E	

3.2.132

WRDIR

Table 149: WRDIR

Attribute name	DATA type	Explanation	M/O/E	Remarks
RDIR class				
RDIR		RDIR for WattmetricSEF_MAF_A	M	
Data				
Common Logical Node Information				
Mod	ABB_c_dINC	Mode	M	Status-only
Beh	ABB_a_dINS	Behaviour	M	
Health	ABB_d_dINS	Health	M	
NamPlt	ABB_a_dLPL	Name plate	M	
Status Information				
Dir	ABB_d_dACD	Direction	M	
OpChrAng	ABB_v2_dMV	Angle between operating angle and relay characteristic angle	E	
OpPolAng	ABB_v2_dMV	Angle between operating and polarizing quantity	E	

3.2.133

DRRDRE

Table 150: DRRDRE

Attribute name	DATA type	Explanation	M/O/E	Remarks
RDRE class				
RDRE		Disturbance recorder	M	
Data				
Common Logical Node Information				
Mod	ABB_a_dINC	Mode	M	
Beh	ABB_a_dINS	Behaviour	M	
Health	ABB_c_dINS	Health	M	
NamPlt	ABB_a_dLPL	Name plate	M	
Status Information				
RcdMade	ABB_d_dSPS	Recording made	M	
FitNum	ABB_b_dINS	Fault Number	M	
RcdStr	ABB_d_dSPS	Recording started	O	
MemUsed	ABB_b_dINS	Memory used in %	O	
RcdClr	ABB_v2_dSPS	Recordings cleared	E	
MemUsedAlm	ABB_v2_dSPS	Memory used alarm	E	

3.2.134

CCBRBRF

Table 151: CCBRRBF

Attribute name	DATA type	Explanation	M/O/E	Remarks
RBRF class				
RBRF		Breaker failure protection	M	
Data				
Common Logical Node Information				
Mod	ABB_a_dINC	Mode	M	
Beh	ABB_a_dINS	Behaviour	M	
Health	ABB_c_dINS	Health	M	
NamPlt	ABB_a_dLPL	Name plate	M	
Status Information				
Str	ABB_d_dACD	Start, timer running	O	
OpEx	ABB_b_dACT	Breaker failure trip (external trip)	C	
OpIn	ABB_b_dACT	Operate, retrip (internal trip)	C	

3.2.135 SCEFRFLO

Table 152: SCEFRFLO

Attribute name	DATA type	Explanation	M/O/E	Remarks
RFLO class				
RFLO		Fault locator	M	
Data				
Common Logical Node Information				
Mod	ABB_c_dINC	Mode	M	Status-only
Beh	ABB_a_dINS	Behaviour	M	
Health	ABB_c_dINS	Health	M	
NamPlt	ABB_a_dLPL	Name plate	M	
Status Information				
FltZ	ABB_c_dCMV	Fault Impedance	M	
FltDiskm	ABB_c_dMV	Fault Distance in km	M	
FltLoop	ABB_e_dINS	Fault Loop	O	
FltAlm	ABB_v1_dSPS	Alarm, fault location in between set limits	E	
TrgSt	ABB_v1_dSPS	Signal indicating function triggering	E	
FltLoopR	ABB_v2_dMV	Fault loop resistance in primary ohms	E	
FltLoopX	ABB_v2_dMV	Fault loop reactance in primary ohms	E	
PhGndCapac	ABB_v2_dMV	Line phase-to-earth capacitance	E	
RatFltALod	ABB_v2_dMV	Ratio between fault current and load current	E	
FltDisVald	ABB_v1_dINS	Validity of earth fault location	E	
EqDisLod	ABB_v2_dMV	Equivalent load distance estimate	E	

3.2.136 DARREC

Table 153: DARREC

Attribute name	DATA type	Explanation	M/O/E	Remarks
RREC class				
RREC		Autorecloser (distribution networks)	M	
Data				
Common Logical Node Information				
Mod	ABB_a_dINC	Mode	M	
Beh	ABB_a_dINS	Behaviour	M	
Table continues on next page				

Attribute name	DATA type	Explanation	M/O/E	Remarks
Health	ABB_c_dINS	Health	M	
NamPit	ABB_a_dLPL	Name plate	M	
Status Information				
OpCntRs	ABB_d_dINC	Operation counter resettable	O	status-only
Op	ABB_b_dACT	Operate (used here to provide close to XCBR)	M	
AutoRecSt	ABB_d_dINS	Auto Reclosing Status	M	
OpOpn	ABB_b_dACT	Operate (open command to XCBR)	E	
OpCnt1	ABB_j_dINS	Operation counter (1st shot)	E	
OpCnt2	ABB_j_dINS	Operation counter (2nd shot)	E	
OpCnt3	ABB_j_dINS	Operation counter (3rd shot)	E	
OpCnt4	ABB_j_dINS	Operation counter (4th shot)	E	
OpCnt5	ABB_j_dINS	Operation counter (5th shot)	E	
LO	ABB_v1_dSPS	Lockout status	E	
SucRec	ABB_v1_dSPS	Successful reclose status	E	
UnsRec	ABB_v1_dSPS	Unsuccessful reclose status	E	
UnsCBCIs	ABB_v1_dSPS	Unsuccessful CB closing status	E	
RdyRec	ABB_v1_dSPS	Ready reclose status	E	
ActRec	ABB_v1_dSPS	Active reclose status	E	
PrgRec	ABB_v1_dSPS	In progress status	E	
PrgRec1	ABB_v1_dSPS	In progress 1st reclose	E	
PrgRec2	ABB_v1_dSPS	In progress 2nd reclose	E	
PrgRec3	ABB_v1_dSPS	In progress 3rd reclose	E	
PrgRec4	ABB_v1_dSPS	In progress 4th reclose	E	
PrgRec5	ABB_v1_dSPS	In progress 5th reclose	E	
PrgDsr	ABB_v1_dSPS	Discrimination time in progress	E	
PrgCutOut	ABB_v1_dSPS	Cutout time in progress	E	
FrqOpAlm	ABB_v1_dSPS	Frequent operation counter alarm	E	
WtMstr	ABB_v1_dSPS	Signal to the low priority unit (follower) issued by high priority unit (master)	E	
ProDsa	ABB_v1_dINS	A word type signal for disabling protection functions	E	
FrqOpCnt	ABB_v1_dINS	Frequent operation counter	E	
RsRec	ABB_v1_dSPC	Reset reclosing	E	Controllable
RsCnt	ABB_v1_dSPC	Reset reclosing counters	E	Controllable
DsaCnt	ABB_v1_dSPC	Signal for counter disabling	E	Controllable
Table continues on next page				

Attribute name	DATA type	Explanation	M/O/E	Remarks
CBManCls	ABB_v1_dSPS	Indicates CB manual closing during reclosing sequence	E	
SOF	ABB_v1_dSPS	Switch-onto-fault	E	
ShotPntr	ABB_v1_dINS	Shot pointer value	E	

3.2.137

AUT2RSYN

Table 154: AUT2RSYN

Attribute name	DATA type	Explanation	M/O/E	Remarks
RSYN class				
RSYN		Auto control of synchrocheck and energizing check, single circuit breaker, 11/2 or double circuit breaker, for automatic purpose	M	
Data				
Common Logical Node Information				
Mod	ABB_c_dINC	Mode	M	Status-only
Beh	ABB_a_dINS	Behaviour	M	
Health	ABB_c_dINS	Health	M	
NamPlt	ABB_a_dLPL	Name plate	M	
Status Information				
Rel	ABB_a_dSPS	Release	M	
VInd	ABB_a_dSPS	Voltage difference indicator	O	
AngInd	ABB_a_dSPS	Angle difference Indicator	O	
HzInd	ABB_a_dSPS	Frequency difference indicator	O	
DifVClc	ABB_b_dMV	Calculated difference in voltage	O	
DifHzClc	ABB_b_dMV	Calculated difference in frequency	O	
DifAngClc	ABB_b_dMV	Calculated difference of phase angle	O	
TestSCOK	ABB_v1_dSPS	Manual synchro check OK test output	E	
EnOK	ABB_v1_dSPS	Manual energizing check OK	E	

3.2.138

MAN2RSYN

Table 155: MAN2RSYN

Attribute name	DATA type	Explanation	M/O/E	Remarks
RSYN class				
RSYN		Manual control of synchrocheck and energizing check, single circuit breaker, 11/2 or double circuit breaker, for manual purpose	M	
Data				
Common Logical Node Information				
Mod	ABB_c_dINC	Mode	M	Status-only
Beh	ABB_a_dINS	Behaviour	M	
Health	ABB_c_dINS	Health	M	
NamPlt	ABB_a_dLPL	Name plate	M	
Status Information				
Rel	ABB_a_dSPS	Release	M	
VInd	ABB_a_dSPS	Voltage difference indicator	O	
AngInd	ABB_a_dSPS	Angle difference indicator	O	
HZInd	ABB_a_dSPS	Frequency difference indicator	O	
EnOK	ABB_v1_dSPS	Manual energizing check OK	E	
TestSCOK	ABB_v1_dSPS	Manual synchrocheck OK test output	E	

3.2.139

SYN1RSYN

Table 156: SYN1RSYN

Attribute name	DATA type	Explanation	M/O/E	Remarks
RSYN class				
RSYN		Auto control of synchrocheck and energizing check, single circuit breaker, 11/2 or double circuit breaker	M	
Data				
Common Logical Node Information				
Mod	ABB_c_dINC	Mode	M	Status-only
Beh	ABB_a_dINS	Behaviour	M	
Health	ABB_c_dINS	Health	M	
NamPlt	ABB_a_dLPL	Name plate	M	
Status Information				
Rel	ABB_a_dSPS	Release	M	
VInd	ABB_a_dSPS	Voltage difference Indicator	O	
Table continues on next page				

Attribute name	DATA type	Explanation	M/O/E	Remarks
HzInd	ABB_a_dSPS	Frequency difference Indicator	O	
FailSyn	ABB_v1_dSPS	Synchronizing failed	E	
TestSynOK	ABB_v1_dSPS	Synchronizing OK test output	E	
HzRCInd	ABB_v1_dSPS	Frequency derivative out of limit for synchronizing	E	
SynWait	ABB_v1_dSPS	Synchronism waiting in progress	E	
HzInBnd	ABB_v1_dSPS	Frequency difference in band for synchronizing	E	

3.2.140

DAXCBR

Table 157: DAXCBR

Attribute name	DATA type	Explanation	M/O/E	Remarks
XCBR class				
XCBR		Circuit breaker	M	
Data				
Common Logical Node Information				
Mod	ABB_a_dINC	Mode	M	
Beh	ABB_a_dINS	Behaviour	M	
Health	ABB_c_dINS	Health	M	
NamPlt	ABB_a_dLPL	Name plate	M	
Status Information				
Loc	ABB_a_dSPS	Local operation (local means without substation automation communication, hardwired direct control)	M	
OpCnt	ABB_b_dINS	Operation counter	M	
Pos	ABB_c_dDPC	Switch position	M	Status-only
BlkOpn	ABB_a_dSPC	Block opening	M	Controllable
BlkCls	ABB_a_dSPC	Block closing	M	Controllable
CBOpCap	ABB_h_dINS	Circuit breaker operating capability	M	
BlkUpd	ABB_v1_dSPC	Block update	E	Controllable

3.2.141

DAXSWI

Table 158: DAXSWI

Attribute name	DATA type	Explanation	M/O/E	Remarks
XSWI class				
XSWI		Circuit switch	M	
Data				
Common Logical Node Information				
Mod	ABB_a_dINC	Mode	M	
Beh	ABB_a_dINS	Behaviour	M	
Health	ABB_c_dINS	Health	M	
NamPlt	ABB_a_dLPL	Name plate	M	
Status Information				
Loc	ABB_a_dSPS	Local operation	M	
OpCnt	ABB_b_dINS	Operation counter	M	
Pos	ABB_c_dDPC	Switch position	M	Status-only
BlkOpn	ABB_a_dSPC	Block opening	M	Controllable
BlkCls	ABB_a_dSPC	Block closing	M	Controllable
SwTyp	ABB_g_dINS	Switch type	M	
SwOpCap	ABB_f_dINS	Switch operating capability	M	
BlkUpd	ABB_v1_dSPC	Block update	E	Controllable

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SPVNZBAT

Table 159: SPVNZBAT

Attribute name	DATA type	Explanation	M/O/E	Remarks
ZBAT class				
ZBAT		Station battery supervision	M	
Data				
Common Logical Node Information				
Mod	ABB_a_dINC	Mode	M	
Beh	ABB_a_dINS	Behaviour	M	
Health	ABB_c_dINS	Health	M	
NamPlt	ABB_a_dLPL	Name plate	M	
Status Information				
Vol	ABB_b_dMV	Battery voltage	M	
BatHi	ABB_a_dSPS	Battery high (voltage or charge - overcharge)	O	
Table continues on next page				

Attribute name	DATA type	Explanation	M/O/E	Remarks
BatLo	ABB_a_dSPS	Battery low (voltage or charge)	O	
OpBatLo	ABB_v1_dSPS	Operate command when battery voltage drops below lower limit	E	
OpBatHi	ABB_v1_dSPS	Operate command when battery voltage exceeds upper limit	E	

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OLYLTC

Table 160: OLYLTC

Attribute name	DATA type	Explanation	M/O/E	Remarks
YLTC class				
YLTC		On-load tap changer	M	
Data				
Common Logical Node Information				
Mod	ABB_c_dINC	Mode	M	Status-only
Beh	ABB_a_dINS	Behaviour	M	
Health	ABB_c_dINS	Health	M	
NamPlt	ABB_d_dLPL	Name plate	M	
Status Information				
TapChg	ABB_b_dBSC	Change tap position stop, higher, lower	C	Status-only
EndPosL	ABB_a_dSPS	End position lower reached	M	
EndPosR	ABB_a_dSPS	End position raise reached	M	

Section 4 Glossary

Beh	Behavior
CB	Circuit breaker
E	Data extension to IEC 61850-7-4
EF	Earth fault
EMC	Electromagnetic compatibility
GFC	General fault criteria
I/O	Input/output
IEC	International Electrotechnical Commission
LD	Logical device
LD0	Logical device zero (0)
LHMI	Local human-machine interface
LLN0	Logical node zero (0)
LN	Logical node
LTC	1. Local time clock 2. Load tap changer
M	Mandatory data according to IEC 61850-7-4
MICS	Model implementation conformance statement
O	Optional data according to IEC 61850-7-4
RMS	Root-mean-square (value)
WHMI	Web human-machine interface



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