Easergy MiCOM P44y
(P443 & P446)

Fast Multifunction Distance Protection Relay

P44y/EN PC/Me3 – Ed. 2

Software Version	K3
Hardware Suffix	M
IEC61850 Edition	2
Issue Date	02/2021

Protocol Implementation Conformance Statement (PICS)

Note The technical manual for this device gives instructions for its installation, commissioning, and operation. However, the manual cannot cover all conceivable circumstances or include detailed information on all topics. In the event of questions or specific problems, do not take any action without proper authorization. Contact the appropriate Schneider Electric technical sales office and request the necessary information.

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PROTOCOL IMPLEMENTATION CONFORMANCE STATEMENT (PICS)

Date (month/year):	02/2021
Products covered by this chapter:	This chapter covers the specific versions of the MiCOM products listed below. This includes ***only*** the following combinations of Software Version and Hardware Suffix.
Hardware suffix:	M
Software version:	K3
Connection diagrams:	This includes a list of the Connection Diagrams for the Products covered by this document. 10P44303 (SH 01 and 03) 10P44304 (SH 01 and 03) 10P44305 (SH 01 and 03) 10P44306 (SH 01 and 03) 10P44600 10P44601 (SH 1 to 2) 10P44602 (SH 1 to 2) 10P44603 (SH 1 to 2)

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Notes:

1 Introduction

The following ACSI conformance statements are used to provide an overview and details about MiCOM P44y (P443 and P446) with firmware K3:

- ACSI basic conformance statement,
- ACSI models conformance statement,
- ACSI service conformance statement

The statements specify the communication features mapped to IEC 61850-8-1 and IEC 61850-9-2.

2 ACSI Basic Conformance Statement

The basic conformance statement is defined in Table 1:

		Client/ Subscriber	Server/ Publisher	Value/ Comments
Client-Server roles				
B11	**Server** side (of TWO-PARTY-APPLICATION-ASSOCIATION)		Y	
B12	**Client** side of (TWO-PARTY-APPLICATION-ASSOCIATION)			
SCSMs supported				
B21	**SCSM**: IEC 61850-8-1 used		Y	
B22	**SCSM**: IEC 61850-9-1 used			Deprecated Ed2
B23	**SCSM**: IEC 61850-9-2 used	Y		
B24	**SCSM**: other			
Generic substation event model (GSE)				
B31	**Publisher** side		Y	
B32	**Subscriber** side	Y		
Transmission of sampled value model (SVC)				
B41	**Publisher** side			
B42	**Subscriber** side	Y		
– = not applicable Y = supported N or empty = not supported				

Table 1 - Basic Conformance Statement

3 ACSI Models Conformance Statement

The ACSI models conformance statement is defined in Table 2.

		Client/ Subscriber	Server/ Publisher	Value/ Comments
If Server side (B11) and/or Client side (B12) supported				
M1	Logical device		Y	c1
M2	Logical node		Y	c1
M3	Data		Y	c1
M4	Data set		Y	c2
M5	Substitution			
M6	Setting group control		Y	
	Reporting			
M7	Buffered report control		Y	
M7-1	sequence-number		Y	
M7-2	report-time-stamp		Y	
M7-3	reason-for-inclusion		Y	
M7-4	data-set-name		Y	
M7-5	data-reference		Y	
M7-6	buffer-overflow		Y	
M7-7	entryID		Y	
M7-8	BufTm		Y	
M7-9	IntgPd		Y	
M7-10	GI		Y	
M7-11	conf-revision		Y	
M8	Unbuffered report control		Y	
M8-1	sequence-number		Y	
M8-2	report-time-stamp		Y	
M8-3	reason-for-inclusion		Y	
M8-4	data-set-name		Y	
M8-5	data-reference		Y	
M8-6	BufTm		Y	
M8-7	IntgPd		Y	
M8-8	GI		Y	
M8-9	conf-revision		Y	
	Logging			
M9	Log control			
M9-1	IntgPd			
M10	Log			
M11	Control		Y	
M17	File Transfer		Y	
M18	Application association		Y	c1
M19	GOOSE Control Block	Y	Y	
M20	Sampled Value Control Block			
c1 Server must be Y if B11=Yes; Client must be Y if B12=Y c2 Server must be Y if M7-Y or M8=Y or M9=Y or M19=Y or M20=Y				

		Client/ Subscriber	Server/ Publisher	Value/ Comments
If GSE (B31/32) is supported				
M12	GOOSE	Y	Y	
M13	GSSE			Deprecated Ed2
If SVC (B41/42) is supported				
M14	Multicast SVC	Y		
M15	Unicast SVC			
For all IEDs				
M16	Time	Y	Y	Time source with required accuracy shall be available. Only Time Master are SNTP (Mode 4 response) time server. All other Client / Server devices require SNTP (Mode 3 request) clients
Y = service is supported N or empty = service is not supported				

Table 2 - ACSI Models Conformance Statement

4 ACSI Service Conformance Statement

The ACSI service conformance statement is defined in Table 3 (depending on the statements in Table 1).

	Ed.	Services	AA: TP/MC	Client (C)	Server (S)	Comments
Server: if B11=Y or B12=Y						
S1	1,2	GetServerDirectory (LOGICAL-DEVICE)	TP		Y	S must be Y if B11=Yes
Application association: if B11=Y or B12=Y						
S2	1,2	Associate			Y	S must be Y if B11=Yes
S3	1,2	Abort			Y	C must support S3 if S4=N
S4	1,2	Release			Y	C must support S4 if S3=N
Logical device: if M1=Y						
S5	1,2	GetLogicalDeviceDirectory	TP		Y	S must be Y if B11=Yes
Logical node: if M2=Y						
S6	1,2	GetLogicalNodeDirectory	TP		Y	S must be Y if B11=Yes
S7	1,2	GetAllDataValues	TP		Y	
Data: if M3=Y						
S8	1,2	GetDataValues	TP		Y	
S9	1,2	SetDataValues	TP		Y	
S10	1,2	GetDataDirectory	TP		Y	
S11	1,2	GetDataDefinition	TP		Y	
Data set: if M4=Y						
S12	1,2	GetDataSetValues	TP		Y	
S13	1,2	SetDataSetValues	TP			Deprecated in Ed2
S14	1,2	CreateDataSet	TP			
S15	1,2	DeleteDataSet	TP			
S16	1,2	GetDataSetDirectory	TP		Y	
Substitution: if M5=Y						
S17	1,2	SetDataValues	TP			
Setting group control: if M6=Y						
S18	1,2	SelectActiveSG	TP		Y	
S19	1,2	SelectEditSG	TP			
S20	1,2	SetEditSGValues	TP			
S21	1,2	ConfirmEditSGValues	TP			
S22	1,2	GetEditSGValues	TP			
S23	1,2	GetSGCBValues	TP		Y	
Reporting: If M7=Y or M8=Y						
Buffered report control block (BRCB); If M7=Y						

	Ed.	Services	AA: TP/MC	Client (C)	Server (S)	Comments
S24	1,2	Report	TP		Y	
S24-1	1,2	data-change (dchg)			Y	
S24-2	1,2	quality-change (qchg)			Y	
S24-3	1,2	data-update (dupd)				
S25	1,2	GetBRCBValues	TP		Y	
S26	1,2	SetBRCBValues	TP		Y	
Unbuffered report control block (URCB) If M8=Y						
S27	1,2	Report	TP		Y	
S27-1	1,2	data-change (dchg)			Y	
S27-2	1,2	quality-change (qchg)			Y	
S27-3	1,2	data-update (dupd)				
S28	1,2	GetURCBValues	TP		Y	
S29	1,2	SetURCBValues	TP		Y	
Logging: If M9=Y or M10=Y						
Log control block; If M9=Y						
S30	1,2	GetLCBValues	TP			
S31	1,2	SetLCBValues	TP			
Log; If M10=Y						
S32	1,2	QueryLogByTime	TP			
S33	1,2	QueryLogAfter	TP			
S34	1,2	GetLogStatusValues	TP			
Generic substation event model (GSE): If M19=Y						
GOOSE						
S35	1,2	SendGOOSEMessage	MC		Y	
GOOSE-CONTROL-BLOCK						
S36	1,2	GetGoReference	TP			
S37	1,2	GetGOOSEElementNumber	TP			
S38	1,2	GetGoCBValues	TP		Y	
S39	1,2	SetGoCBValues	TP		Y	
GSSE						
S40	1	SendGSSEMessage	MC			Deprecated in Edition 2
GSSE-CONTROL-BLOCK						
S41	1	GetReference	TP			Deprecated in Edition 2
S42	1	GetGSSEElementNumber	TP			Deprecated in Edition 2
S43	1	GetGsCBValues	TP			Deprecated in Edition 2
S44	1	SetGsCBValues	TP			Deprecated in Edition 2
Transmission of sampled value model (SVC): If M20=Y						
Multicast SV						
S45	1,2	SendMSVMessage	MC			
Multicast Sampled Value Control Block						
S46	1,2	GetMSVCBValues	TP			
S47	1,2	SetMSVCBValues	TP			
Unicast SV						

	Ed.	Services	AA: TP/MC	Client (C)	Server (S)	Comments
S48	1,2	SendUSVMessage	TP			
Unicast Sampled Value Control Block						
S49	1,2	GetUSVCBValues	TP			
S50	1,2	SetUSVCBValues	TP			
Control: If M11=Y						
S51	1,2	Select			Y	
S52	1,2	SelectWithValue	TP		Y	
S53	1,2	Cancel	TP		Y	
S54	1,2	Operate	TP		Y	
S55	1,2	CommandTermination	TP		Y	
S56	1,2	TimeActivatedOperate	TP			
File transfer: If M17=Y						
S57	1,2	GetFile	TP		Y	
S58	1,2	SetFile	TP			
S59	1,2	DeleteFile	TP		Y	
S60	1,2	GetFileAttributeValues	TP		Y	
S61	1,2	GetServerDirectory (FILE-SYSTEM)	TP		Y	
Time						
T1	1,2	Time resolution of internal clock		10	10	Nearest negative power of 2^{-n} in seconds (number 0 .. 24)
T2	1,2	Time accuracy of internal clock		T1	T1	TL (ms) (low accuracy), T3 < 7) (c1) T0 (ms) (<= 10 ms), 7 <= T3 < 10 (c1) T1 (µs) (<= 1 ms), 10 <= T3 < 13 T2 (µs) (<= 100 µS), 13 <= T3 < 15 T3 (µs) (<= 25 µS), 15 <= T3 < 18 T4 (µs) (<= 4 µS), 18 <= T3 < 20 T5 (µs) (<= 1 µS), 20 <= T3 < 25
T3	1,2	Supported TimeStamp resolution	-	10	10	Nearest value of 2^{-n} in seconds (number 0 .. 24)
c1 TL may only be specified for Ed2. If Ed1 has accuracy which is better than 1 second but is not T1 then declare T0.						

Table 3 - ACSI Service Conformance Statement

AA: Application Association type
MC: Multicast (for GOOSE and SMV)
MMS: Manufacturing Message Specification
TP: Two part (for MMS)

Notes:

Customer Care Centre

http://www.schneider-electric.com/ccc

Schneider Electric
35 rue Joseph Monier
92506 Rueil-Malmaison
FRANCE

Phone: +33 (0) 1 41 29 70 00
Fax: +33 (0) 1 41 29 71 00

www.schneider-electric.com

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