

# Easergy MiCOM P445

**Fast Multifunction Distance Protection Relay**

**P445/EN PC/G82**

Software Version	J7
Hardware Suffix	L
IEC61850 Edition	1
Issue Date	08/2017

**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):	08/2017
Products covered by this chapter:	This chapter covers the specific versions of the MiCOM products listed below. This includes <b>only</b> the following combinations of Software Version and Hardware Suffix.
Hardware suffix:	L
Software version:	J7
Connection diagrams:	This includes a list of the Connection Diagrams for the Products covered by this document. 10P445xx (xx = 01 to 04)

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# Notes:

**1 INTRODUCTION**

This specification is the Protocol Implementation Conformance Statement (PICS) and shows the Abstract Communication Service Interface (ACSI) conformance statements as defined in Annex A of Part 7-2 of the IEC 61850 standard specifications. The following ACSI conformance statements used to provide an overview and details about MiCOM P445 with firmware J7.

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

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

**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			
B23	SCSM: IEC 61850-9-2 used			
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 = Yes (supported) N or empty = No (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 or Client side (B11/12) supported				
M1	Logical device		Y	
M2	Logical node		Y	
M3	Data		Y	
M4	Data set		Y	
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	BufTim		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	BufTim		Y	
M8-7	IntgPd		Y	
M8-8	GI		Y	
M8-9	conf-revision		Y	
Logging				
M9	Log control			
M9-1	IntgPd			
M10	Log			
Control				
M11	Control		Y	
If GSE (B31/32) is supported				
M12	GOOSE	Y	Y	
M13	GSSE			
If SVC (41/42) is supported				
M14	Multicast SVC			

		Client/ Subscriber	Server/ Publisher	Value/ Comments
M15	Unicast SVC			
If Server or Client side (B11/12) supported				
M16	Time	Y	Y	Time source with required accuracy shall be available.
M17	File Transfer		Y	
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).

	Services	AA:TP/MC	Client (C)	Server (S)	Comments
<b>Server</b>					
S1	GetServerDirectory	TP		Y	
<b>Application association</b>					
S2	Associate			Y	
S3	Abort			Y	
S4	Release			Y	
<b>Logical device</b>					
S5	GetLogicalDeviceDirectory	TP		Y	
<b>Logical node</b>					
S6	GetLogicalNodeDirectory	TP		Y	
S7	GetAllDataValues	TP		Y	
<b>Data</b>					
S8	GetDataValues	TP		Y	
S9	SetDataValues	TP		Y	
S10	GetDataDirectory	TP		Y	
S11	GetDataDefinition	TP		Y	
<b>Data set</b>					
S12	GetDataSetValues	TP		Y	
S13	SetDataSetValues	TP			
S14	CreateDataSet	TP			
S15	DeleteDataSet	TP			
S16	GetDataSetDirectory	TP		Y	
<b>Substitution</b>					
S17	SetDataValues	TP			
<b>Setting group control</b>					
S18	SelectActiveSG	TP		Y	
S19	SelectEditSG	TP			
S20	SetSGValues	TP			
S21	ConfirmEditSGValues	TP			
S22	GetSGValues	TP			
S23	GetSGCBValues	TP		Y	
<b>Reporting</b>					
<b>Buffered report control block (BRCB)</b>					
S24	Report	TP		Y	
S24-1	data-change (dchg)			Y	
S24-2	quality-change (qchg)				
S24-3	data-update (dupd)				
S25	GetBRCBValues	TP		Y	
S26	SetBRCBValues	TP		Y	
<b>Unbuffered report control block (URCB)</b>					

	Services	AA:TP/MC	Client (C)	Server (S)	Comments
S27	Report	TP		Y	
S27-1	data-change (dchg)			Y	
S27-2	quality-change (qchg)				
S27-3	data-update (dupd)				
S28	GetURCBValues	TP		Y	
S29	SetURCBValues	TP		Y	
<b>Logging</b>					
<b>Log control block</b>					
S30	GetLCBValues	TP			
S31	SetLCBValues	TP			
Log					
S32	QueryLogByTime	TP			
S33	QueryLogByEntry	TP			
S34	GetLogStatusValues	TP			
<b>Generic substation event model (GSE)</b>					
<b>GOOSE-CONTROL-BLOCK</b>					
S35	SendGOOSEMessage	MC		Y	IED supports GOOSE Publisher and Subscriber.
S36	GetReference	TP			
S37	GetGOOSEElementNumber	TP			
S38	GetGoCBValues	TP		Y	
S39	SetGoCBValues	TP		Y	
<b>GSSE-CONTROL-BLOCK</b>					
S40	SendGSSEMessage	MC			
S41	GetReference	TP			
S42	GetGSSEElementNumber	TP			
S43	GetGsCBValues	TP			
S44	SetGsCBValues	TP			
<b>Transmission of sampled value model (SVC)</b>					
<b>Multicast SVC</b>					
S45	SendMSVMessage	MC			
S46	GetMSVCBValues	TP			
S47	SetMSVCBValues	TP			
Unicast SVC					
S48	SendUSVMessage	TP			
S49	GetUSVCBValues	TP			
S50	SetUSVCBValues	TP			
<b>Control</b>					
S51	Select			Y	
S52	SelectWithValue	TP		Y	
S53	Cancel	TP		Y	
S54	Operate	TP		Y	
S55	Command-Termination	TP		Y	

	Services	AA:TP/MC	Client (C)	Server (S)	Comments
S56	TimeActivated-Operate	TP			
<b>File transfer</b>					
S57	GetFile	TP		Y	
S58	SetFile	TP			
S59	DeleteFile	TP		Y	Only be performed on .cfg and .data files in /dr_unextracted /
S60	GetFileAttributeValues	TP		Y	
<b>Time</b>					
T1	Time resolution of internal clock		10	10	nearest negative power of 2 in seconds
T2	Time accuracy of internal clock				T0
			1ms	1ms	T1
					T2
					T3
					T4
					T5
T3	Supported TimeStamp resolution	-	10	10	nearest value of $2^{-n}$ in seconds

**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:*





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