

# Easergy MiCOM P445

Fast Multifunction Distance Protection Relay

P445/EN PC/G82

Software Version	J7
Hardware Suffix	L
IEC61850 Edition	2
Issue Date	08/2017

Protocol Implementation Conformance Statement (PICS)

**Note**

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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	
M18	Application association		Y	
M19	GOOSE Control Block	Y	Y	
M20	Sampled Value Control Block			
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)			Y	
S24-3	data-update (dupd)				
S25	GetBRCBValues	TP		Y	
S26	SetBRCBValues	TP		Y	
<b>Unbuffered Report Control Block (URCB)</b>					
S27	Report	TP		Y	

	Services	AA:TP/MC	Client (C)	Server (S)	Comments
S27-1	data-change (dchg)			Y	
S27-2	quality-change (qchg)			Y	
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	GetGoReference	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	
S56	TimeActivated-Operate	TP			
<b>File transfer</b>					

	Services	AA:TP/MC	Client (C)	Server (S)	Comments
S57	GetFile	TP		Y	
S58	SetFile	TP			
S59	DeleteFile	TP		Y	Only from /COMTRADE/ operation may be performed on .cfg and .dat files.
S60	GetFileAttributeValues	TP		Y	
S61	GetServerDirectory (FILE-SYSTEM)	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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