

Easergy MiCOM P445

Fast Multifunction Distance Protection Relay

P445/EN TC/Ld2 – Ed. 1

Software Version	K3
Hardware Suffix	L
IEC61850 Edition	1
Issue Date	03/2021

Tissues Conformance Statement (TICS)

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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**TISSUES CONFORMANCE
STATEMENT (TICS)**

Date (month/year):	03/2021
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:	L
Software version:	K3
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

According to the UCA IUG QAP, the Technical Issues Conformance Statement is required to perform a conformance test and is referenced on the certificate. This document specifies the conformance level of MiCOM P445 with firmware version K3 to the logged Technical Issues (TISSUES) against the IEC 61850 set of standards. For more details on the logged Technical Issues, refer to the website:
<http://www.tissues.iec61850.com>

2 MANDATORY INTOP TISSUES

During the October 2006 meeting, IEC TC57 Working Group 10 decided that:

- Green Tissues with the category "IntOp" are mandatory for IEC 61850 Edition 1
- Green Tissues with the category "Ed.2" should not be implemented.

Below table gives an overview of the implemented IntOp Tissues.

Part	Tissue	Description	Category IntOp/IntOp2	Implemented Y/na	Notes
6	1	Syntax	IntOp	Y	
	5	tExtensionAttributeNameEnum is restricted	IntOp	Y	
	8	SIUnit enumeration for W	IntOp	Y	
	10	Base type for bitstring usage	IntOp	Y	
	17	DAI/SDI elements syntax	IntOp	Y	
	169	Ordering of enum differs from 7-3	IntOp	na	angRef is Optional in WYE, not included in P746 products
	658	Tracking related features	IntOp2	na	
	663	FCDA element cannot be a "functionally constrained logical node"	IntOp2	na	IED Configurator update
	668	Autotransformer modeling	IntOp2	na	
	687	SGCB ResvTms	Ed2	na	
	719	ConfDataSet - maxAttributes definition is confusing	IntOp2	na	
	721	Log element name	IntOp2	na	Log not supported.
	768	bType VisString65 is missing	IntOp2	na	SCL3.1 solved this
	779	object references	IntOp2	na	SCL3.1 solved this
	788	SICS S56 from optional to mandatory	IntOp2	na	
	789	ConfLdName as services applies to both server and client	IntOp2	na	LD name could not be configurable
	804	valKind and IED versus System configuration	IntOp2	na	SCL3.1 solved this
	806	Max length of log name inconsistent between -6 and -7-2	Ed2	na	SCL3.1 solved this
	807	Need a way to indicate if "Owner" present in RCB	Ed2	na	
	822**	Extension of IED capabilities	Ed2	na	SCL3.1 solved this
	823	ValKind for structured data attributes	IntOp2	na	IED Configurator update
	824	Short addresses on structured data attributes	IntOp2	na	SCL3.1 solved this
	825	Floating point value	IntOp2	na	
	845	SGCB ResvTms	Ed2	na	
	853	SBO and ProtNs	IntOp2	na	
	855	Recursive SubFunction	IntOp2	na	
	856	VoltageLevel frequency and phases	Ed2	na	Need new Schema
	857	Function/SubFunction for ConductingEquipment	IntOp2	na	
	886	Missing 8-1 P-types	IntOp2	na	
	901	tServices as AP or as IED element	IntOp2	na	
	936	SupSubscription parameter usage is difficult	IntOp2	na	
7-2	30	control parameter T	IntOp	Y	

Part	Tissue	Description	Category IntOp/IntOp2	Implemented Y/na	Notes
	31	Typo	IntOp	Y	Documentation only
	32	Typo in syntax	IntOp	Y	
	35	Typo Syntax Control time	IntOp	Y	
	36	Syntax parameter DSet-Ref missing	IntOp	Y	
	37	Syntax GOOSE "T" type	IntOp	Y	
	39	Add DstAddr to GoCB	IntOp	Y	
	40	GOOSE Message "AppID" to "GoID"	IntOp	Y	
	41	GsCB "AppID" to "GsID"	IntOp	na	GSSE not implemented
	42	SV timestamp: "EntryTime" to "TimeStamp"	IntOp	na	SV model not implemented
	43	Control "T" semantic	IntOp	Y	
	44	AddCause - Object not sel	IntOp	Y	
	46	Synchro check cancel	IntOp	na	Syncro check not supported in P746 products
	47	"." in LD Name?	IntOp	Y	
	50	LNName start with number?	IntOp	Y	
	51	ARRAY [0..num] missing	IntOp	Y	
	52	Ambiguity GOOSE SqNum	IntOp	Y	
	53	Add DstAddr to GsCB, SV	IntOp	na	SV model not implemented
	151	Name constraint for control blocks etc.	IntOp	Y	
	166	DataRef attribute in Log	IntOp	na	Logging not implemented
	185	Logging - Integrity period	IntOp	na	Logging not implemented
	189	SV Format	IntOp	na	SV model not implemented
	191	BRCB: Integrity and buffering reports	IntOp	na	
	234	New type CtxInt	IntOp	Y	
	275	Confusing statement on GI usage	IntOp	Y	
	278	EntryId not valid for a server	IntOp	na	
	297	BRCB: SqNum generation	IntOp	Y	
	298	BRCB: SqNum attribute data type	IntOp	Y	
	305	BufTim=0 with 2 or more data set changes	IntOp	Y	
	322	BRCB: Buffer purge when changing configuration	IntOp	na	
	329	BRCB: Conditions for setting buffer overflow	IntOp	na	
	335	BRCB: Clearance of BufOvl flag	IntOp	Y	

Part	Tissue	Description	Category IntOp/IntOp2	Implemented Y/na	Notes
	348	TimeOfEntry is independent of EntryId	IntOp	Y	
	349	TimeOfEntry has two definitions	IntOp	na	
	778	AddCause values – add value not-supported	IntOp2	na	
	780	What are 'unsupported trigger option at a control block?	IntOp2	na	data update not supported
	783	TimOper Resp-	IntOp2	na	TimOper not supported
	786	AddCause values	IntOp2	na	
7-3	28	Definition of APC	IntOp	Y	
	54	Point def xVal, not cVal	IntOp	Y	Documentation only
	55	Ineut = Ires?	IntOp	Y	
	60	Services missing in tables	IntOp	Y	
	63	mag in CDC CMV	IntOp	Y	
	65	Deadband calculation of a Vector and trigger option	IntOp	Y	
	219	operTm in ACT	IntOp	na	operTm is Optional in ACT, not included in P746 products.
	270	WYE and DEL rms values	IntOp	Y	
	697	persistent command / PulseConfig	IntOp2	na	
	698	Wrong case is BAC.dB attribute	IntOp2	na	
	722	Units for 'h' and 'min' not in UnitKind enumeration.	IntOp2	na	
7-4	674	CDC of ZRRC.LocSta is wrong	IntOp2	na	
	675	SIML LN	IntOp2	na	
	676	Same data object name used with different CDC	IntOp2	na	
	677	MotStr is used with different CDC in PMMS and SOPM LN classes	IntOp2	na	
	680	SI unit for MHYD.Cndct	IntOp2	na	
	681	Enum PIDAlg	IntOp2	na	
	682	ANCR.ParColMod	IntOp2	na	
	683	Enum QVVR.IntrDetMth	IntOp2	na	
	685	Enum ParTraMod	IntOp2	na	
	686	New annex H - enums types in XML	IntOp2	na	
	694	Data object CmdBlk	IntOp2	na	
	696	LSVS.St (Status of subscription)	IntOp2	na	
	712	interpretation of quality operatorBlocked	IntOp2	na	partly supported will not update
	713	DO Naming of time constants in FFIL	IntOp2	na	
	724	ANCR.Auto	IntOp2	na	
	725	Loc in LN A-group	IntOp2	na	
	734	LLN0.OpTmh vs. LPHD.OpTmh	IntOp2	na	
	735	ISAF.Alm and ISAF.AlmReset	IntOp2	na	
	736	PFSign	IntOp2	na	
	742	GAPC.Str, GAPC.Op and GAPC.StrVal	IntOp2	na	

Part	Tissue	Description	Category IntOp/IntOp2	Implemented Y/na	Notes
	743	CCGR.PmpCtl and CCGR.FanCtl	IntOp2	na	
	744	LN STMP, EEHealth and EENAME	IntOp2	na	
	772	LPHD.PwrUp/PwrDn shall be transient	IntOp2	na	
	773	Loc, LocKey and LocSta YPSH and YLTC	IntOp2	na	
	774	ITCI.LockKey	IntOp2	na	
	775	KVLV.ClsLim and OpnLim	IntOp2	na	
	776	LPHD.OutOv/InOv and LCCH.OutOv/InOv	IntOp2	na	
	800	Misspelling in CSYN	IntOp2	na	
	802	CCGR and Harmonized control authority	IntOp2	na	
	808	Presence condition of ZMOT.DExt and new DOs	IntOp2	na	
	838	Testing in Beh=Blocked	IntOp2	na	
8-1	116	GetNameList with empty response?	IntOp	Y	
	165	Improper Error Response for GetDataSetValues	IntOp	Y	
	183	GetNameList error handling	IntOp	Y	
	817	Fixed-length GOOSE float encoding	IntOp2	na	
	951	Encoding of Owner attribute	IntOp2	Na	

Note

*Tissue** = Tissue is not clarified in enough detail for testing

*Tissue*** = Tissue status is not green, but is clarified in enough detail for testing

3 OPTIONAL INTOP TISSUES

After the approval of the server conformance test procedures version 74100432-MOC/INC 2013-v1.0 the following IntOp or IntOp2 Tissues were added or changed. It is optional to implement these Tissues.

Part	Tissue	Description	Category IntOp/IntOp2	Implemented Y/na	Notes
6	245	Attribute RptId in SCL	IntOp	Y	
	529	Replace sev - Unknown by unknown	IntOp	Y	
7-2	333	Enabling of an incomplete GoCB	IntOp	Y	
	453	Combination of all reporting and logging tissues	IntOp	na	
	49	BRCB TimeOfEntry?	IntOp	Y	
	190	BRCB: EntryId and TimeOfEntry	IntOp	Y	GetBRCBValues when BRCB is disabled returns EntryId value of last set of events sent
	278	EntryId not valid for a server	IntOp	na	
7-4	671	mistake in definition of Mod & Beh	IntOp2	na	partly supported
8-1	246	Control negative response (SBOs)	IntOp	Y	
	545	File directories with no files	IntOp	na	

4 OTHER TISSUES

Complete below table of other implemented tissues, these tissues with the category "Ed2" should have no impact on interoperability.

Part	Tissue	Description	Implemented Y/na	Notes
6	7	Duplication of attributes	Y	
	9	Data Set reference in CBs Y	Y	
	272	Private section type	Y	
	285	Inconsistent uniqueness constraints	Y	
	307	Flag buffered/unbuffered reporting in element service	Y	
	315	Number of client associations	Y	
	425	SCL does not support VisString65	Y	
7-1	250	Trigger option used, if not defined	Y	
7-2	37	Syntax GOOSE "T" type	Y	
	40	GOOSE Message <i>AppID</i> to <i>GoID</i>	Y	
	52	Ambiguity GOOSE <i>SqNum</i>	Y	
	236	Name length	Y	
	300	Attribute Resv in BRCB	Y	
	325	TimeStamp definition	Y	
7-3	28	Definition of APC	Y	
	205	Device name plate – missing description "d" and "dU"	Y	
7-4	79	AutoRecSt and Lockout	Y	
	147	Mod	Y	
	263	Setting Local time or summer/winter time	Y	
	830	Mode/Behaviour & Quality	Y	Partly supported
8-1	118	File directory	Y	
	177	Ignoring OptFlds bits for URCB	Y	
	231	ConfRev definition	Y	
	777	AddCause values	Y	
	827	Mandatory ACSI services	Y	



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