

# SIEMENS

## SIPROTEC<sup>®</sup> 7SJ602 V3.5x

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Supplementary Note

Order-No.: C53000-X5676-C110-3

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### **Annunciations to the Serial System Interface according to IEC 60 870-5-103**

Associated Manual: C53000-G1176-C125

Annunciations 7SJ602 V3.5 for LSA (according to IEC 60870-5-103)Legend of abbreviations:

FNr. - Function number for IEC interface  
 Op/Ft - Operation / Fault annunciation  
 C/CG : Coming/Coming and Going annunciation  
 MW : Measurand

According to IEC 60870-5-103:

CA - Compatible annunciation  
 GI - Annunciation for General Interrogation  
 BT - Binary Trace for fault recordings  
 Type - Function type (p: according to the configured "Function Type")  
 Inf - Information number

Operation and Fault Annunciations:

FNr.	Text	Meaning	Control direction	Annunc.		IEC 60870-5-103					
				Op	Ft	CA	GI	BT	Type	Inf	
3	>Ti.syn	>Time synchronization	yes							135	48
5	>LED r.	>Reset LED indicators								135	50
11	>Annu.1	>User defined annunciation 1		CG		CA	GI	BT	p		27
12	>Annu.2	>User defined annunciation 2		CG		CA	GI	BT	p		28
13	>Annu.3	>User defined annunciation 3		CG		CA	GI	BT	p		29
14	>Annu.4	>User defined annunciation 4		CG		CA	GI	BT	p		30
16	>SysMMb	>Block. of monitoring dir. via sys.-int		CG*						135	54
52	operat.	Any protection operative		CG		CA	GI		p		18
53	Res.FCB	Reset frame count bit				CA			p		2
54	ResetKE	Reset communication unit				CA			p		3
56	Init.st	Initial start of processor system				CA			p		5
57	GI-end	End of general interrogation				CA				255	0
58	Time sy	Time synchronization				CA				255	0
60	LED res	LED Reset		C		CA				0	19
61	Meas.Bl	Logging and measuring functions blocked		CG		CA				0	20
63	PCviaSy	PC operation via system interface				CA				135	83
80	SigStör	For internal use only								135	110
81	SigBef.	For internal use only								135	111
83	SigTest	For internal use only								135	113
110	ANNlost	Annunciations lost (buffer overflow)		C						135	130
111	PCannLT	Annunciations for PC lost		C						135	129
112	LSAanLT	Annunciations for LSA lost								135	131
113	TAGlost	Fault tag lost						BT		135	136
115	ANNovfl	Fault annunciation buffer overflow		C						135	132
129	VDstINV	VDEW state invalid								135	149
159	LSAdist	LSA (system interface) disrupted								135	44
162	FailSI	Failure: Current summation supervision		CG			GI			135	182
177	BatFail	Failure: Battery		CG						135	193
203	REC del	Fault recording data deleted		C						135	203
235	RemBlk	Remote is blocked		CG						135	159
284	IL< al	IL< alarm		CG						135	244
356	>mCLOSE	>Manual close		CG						150	6
415	>ResMax	Reset min/max of measured data	yes	CG						150	84
416	iResMax	Int. reset min/max of measured data		C						150	85
417	ResMax	Min/max of measured data has been reset		C						150	86
501	FT det	General fault detection of device			CG	CA	GI	BT	p		84
511	DEV.Trp	General trip of device			C	CA		BT	p		68
521	IL1	Interrupted current: Phase L1(I/In)			C					150	171
522	IL2	Interrupted current: Phase L2(I/In)			C					150	172
523	IL3	Interrupted current: Phase L3(I/In)			C					150	173
537	IE=	Switched off current IE I/In			C					150	182
538	IEE=	Switched off current IEE I/In			C					150	183
563	CBA sup	CB alarm suppressed								150	199
1157	>CB 3pC	>CB aux. contact:3poles closed (series)		CG			GI			151	57

FNr.	Text	Meaning	Control direction	Annunc.		IEC 60870-5-103					
				Op	Ft	CA	GI	BT	Type	Inf	
1174	CBtest	Circuit breaker test in progress		CG			GI			151	74
1185	CBtpTST	Circuit breaker test: Trip 3pole		CG			GI			151	85
1188	CBtwAR	Circuit breaker test: Trip w. reclosure		CG			GI			151	89
1201	>UE bl	>Block UE stage of sensitive E/F prot.	yes	CG						151	101
1215	FD UE	Earth flt. det. by displacement voltage		CG	CG		GI			151	115
1217	Trip UE	Trip by displacement voltage stage		C	C					151	117
1276	EFfor	Earth fault (isol./comp.) forward dir.		CG	C	CA				p	51
1277	EFrev	Earth fault (isol./comp.) reverse dir.		CG	C	CA				p	52
1278	EFundef	Earth fault (isol./comp.) undef. dir.		CG	C					151	178
1403	>BF blo	>Block breaker fail protection	yes	CG						166	103
1431	>BF St	>ext. start breaker failure protection	yes		CG					166	104
1451	BF off	Breaker fail protection is switched off		CG						166	151
1452	BF bloc	Breaker failure protection is blocked			CG					166	152
1453	BF act	Breaker failure protection is active		CG						166	153
1456	BF fttl	Breaker fail(int): fault detection			CG					166	156
1457	BF fltE	Breaker(ext): fault detection			CG					166	157
1471	BF off	Breaker fail protection is switched off			C	CA				p	85
1501	>O/L on	>Switch on thermal overload protection	yes				GI			167	1
1502	>O/Loff	>Switch off thermal overload protection	yes				GI			167	2
1503	>O/Lblk	>Block thermal overload protection	yes				GI			167	3
1511	O/L off	Thermal overload prot. is switched off		CG			GI			167	11
1512	O/L blk	Thermal overload protection is blocked		CG			GI			167	12
1513	O/L act	Thermal overload protection is active		CG			GI			167	13
1516	O/L wrn	Thermal overload prot.: Thermal warning		CG	CG		GI			167	16
1518	O/L p/u	Thermal overload prot.: Pick-up		CG	CG		GI			167	18
1521	O/L Trp	Thermal overload protection trip			C			BT		167	21
1530	THETA =	Operating temperature =		MW						167	30
1531	t Trp =	O/L: estimated time to trip		MW						167	31
1532	t Trp =	O/L: estimated time to trip		MW						167	32
1533	t rel =	O/L: estimated time to release closing		MW						167	33
1534	t rel =	O/L: estimated time to release closing		MW						167	34
1701	>O/Cpon	>Switch on O/C protection phase	yes							60	12
1702	>O/Cpof	>Switch off O/C protection phase	yes							60	13
1704	>O/Cpbk	>Block overcurrent protection phases	yes							60	14
1711	>O/Ceon	>Switch on overcurrent protection earth	yes							60	15
1712	>O/Ceof	>Switch off overcurrent protec. earth	yes							60	19
1714	>O/Cebk	>Block overcurrent protection earth	yes							60	20
1721	>l>>blk	>Overcurrent protection:block stage l>>	yes	CG						60	1
1722	>l> blk	>Overcurrent protection:block stage l>	yes	CG						60	2
1723	>lp blk	>Overcurrent protection:block stage lp	yes	CG						60	3
1724	>IE>>bk	>Overcurrent protec.: block stage IE>>	yes	CG						60	4
1725	>IE> bk	>Overcurrent protection:block stage IE>	yes	CG						60	5
1726	>IEp bk	>Overcurrent protection:block stage IEp	yes	CG						60	6
1727	>C/O	>C/O of overcurrent fault detec. level	yes							60	73
1751	O/Cpoff	Overcurrent prot. phase is switched off		CG			GI			60	21
1752	O/Cpbk	Overcurrent prot. phase is blocked		CG			GI			60	22
1753	O/Cpact	Overcurrent prot. phase is active		CG			GI			60	23
1756	O/Ceoff	O/C protection earth is switched off		CG			GI			60	26
1757	O/Cebk	O/C protection earth is blocked		CG			GI			60	27
1758	O/Ceact	O/C protection earth is active		CG			GI			60	28
1762	O/C L1	O/C fault detection phase L1				CA	GI	BT	p	64	
1763	O/C L2	O/C fault detection phase L2				CA	GI	BT	p	65	
1764	O/C L3	O/C fault detection phase L3				CA	GI	BT	p	66	
1765	O/C E	O/C fault detection earth				CA	GI	BT	p	67	
1771	FD L1	O/C fault detection L1 only			C					60	31
1772	FD L1E	O/C fault detection L1-E			C					60	32
1773	FD L2	O/C fault detection L2 only			C					60	33
1774	FD L2E	O/C fault detection L2-E			C					60	34
1775	FD L12	O/C fault detection L1-L2			C					60	35
1776	FD L12E	O/C fault detection L1-L2-E			C					60	36
1777	FD L3	O/C fault detection L3 only			C					60	37
1778	FD L3E	O/C fault detection L3-E			C					60	38
1779	FD L13	O/C fault detection L1-L3			C					60	39
1780	FD L13E	O/C fault detection L1-L3-E			C					60	40
1781	FD L23	O/C fault detection L2-L3			C					60	41
1782	FD L23E	O/C fault detection L2-L3-E			C					60	42
1783	FD L123	O/C fault detection L1-L2-L3			C					60	43
1784	FDL123E	O/C fault detection L1-L2-L3-E			C					60	44
1785	FD E	O/C fault detection E only			C		GI			60	45

FNr.	Text	Meaning	Control direction	Annunc.		IEC 60870-5-103					
				Op	Ft	CA	GI	BT	Type	Inf	
1800	FD I>>	O/C fault detection stage I>>			CG		GI			60	75
1805	Trp I>>	O/C protection I>> phase trip			C	CA		BT		p	91
1810	FD I>	O/C fault detection stage I>			CG		GI			60	76
1815	Trip I>	O/C protection I> phase trip			C	CA		BT		p	90
1820	FD Ip	O/C fault detection Ip			CG		GI			60	77
1825	Trip Ip	O/C protection Ip phase trip			C			BT		60	58
1831	FD IE>>	O/C fault detection IE>> earth			CG		GI			60	59
1833	TrpIE>>	O/C protection IE>> earth trip			C	CA		BT		p	93
1834	FD IE>>	O/C fault detection IE>> earth			CG		GI			60	62
1836	TrpIE>>	O/C protection IE>> earth trip			C	CA		BT		p	92
1837	FD IEp	O/C fault detection IEp earth			CG		GI			60	64
1839	Trp IEp	O/C protection IEp earth trip			C			BT		60	66
1850	FD dyn	O/C prot. : dynamic parameters active			CG					60	74
2701	>AR on	>AR: Switch on auto-reclose function	yes							40	1
2702	>AR off	>AR: Switch off auto-reclose function	yes							40	2
2732	>AR St.	>AR: Start external	yes		CG	CG				40	23
2733	>ARblSt	>AR: External Blocking of Start	yes		CG	CG				40	24
2734	>ARblCl	>AR: External Blocking of reclosure	yes		CG	CG				40	25
2736	AR act.	AR: Auto reclosure is active			CG			GI		40	26
2781	AR off	AR: Auto-reclose is switched off			CG			GI		40	81
2801	AR i pg	AR: Auto-reclose in progress				CG		GI		40	101
2851	AR ClCm	AR: Close command from auto-reclose				CG	CA	GI		p	128
2863	AR dTrp	AR: Definitive trip				CG		GI		40	163
2872	AR Strt	AR: Start				CG		GI		40	50
2873	AR blSt	AR: blocked				CG		GI		40	51
2874	AR blCl	AR: Reclosure blocked				CG		GI		40	52
2875	AR blMC	AR: Blocked by manual close			CG			GI		40	53
2876	AR DT	AR: Dead time			C	C				40	182
4632	>SWblo.	>Switching authorization: blocked						GI		101	32
4640	Q0 Clo.	Control-Close-Command CB-Q0				C				101	33
4641	Q0 Trp.	Control-Trip-Command CB-Q0				C				101	34
4642	Q0 Ctr.	Control-Command CB-Q0	yes			C				101	35
4822	>MSP bl	>Block motor start protection	yes			CG				168	56
4823	>MSP em	>Motor start protection emergency start	yes			CG				168	51
4824	MSP off	Motor start protection is switched off				CG				168	52
4825	MSP blk	Motor start protection is blocked				CG	CG			168	53
4826	MSP act	Motor start protection is active				CG				168	54
4827	MSP tri	Trip by motor start protection				C				168	55
4828	>MSPRTI	Reset Thermal Image	yes			CG				168	57
4829	MSP RTI	Thermal Image resetted				CG				168	50
5143	>I2 blk	>Block unbalanced load protection	yes							70	126
5144	>revPhR	>Reversed phase rotation	yes			CG		GI		70	125
5151	I2 off	Unbalanced load prot. is switched off				CG		GI		70	131
5152	I2 blk	Unbalanced load protection is blocked				CG		GI		70	132
5153	I2 act	Unbalanced load protection is active				CG		GI		70	133
5159	FD I2>>	Unbalanced load: Fault detec. I2>>					CG	GI		70	138
5165	FD I2>	Fault detection neg. seq. I (I2>)					CG	GI		70	150
5170	Trp I2	neg. seq. I. (I2) prot.: Trip					C		BT	70	149
6757	Trpl>>>	O/C protection I>>> phase trip				CG		GI	BT	231	69
6758	>I>>>bk	>inst. high set prot.: block stage I>>>	yes			CG		GI		231	70
6801	>SRT bk	>Block starting time supervision	yes							169	57
6811	SRT off	Starting time supervision off				CG		GI		169	51
6812	SRT blk	Starting time supervision blocked				CG		GI		169	52
6813	SRT act	Starting time supervision active				CG		GI		169	53
6821	SRT Trp	Trip by supervision of starting time				CG	C		BT	169	54
6851	>SUP bk	>Blocking trip circuit supervision	yes							170	57
6852	>TrpRel	>Trip circuit supervision: Trip relay	yes			CG		GI		170	51
6853	>CBaux	>Trip circuit supervision: CB aux.	yes			CG		GI		170	52
6861	SUP off	Trip circuit supervision off				CG		GI		170	53
6862	SUP blk	Trip circuit supervision blocked				CG		GI		153	16
6863	SUP act	Trip circuit supervision active				CG		GI		153	17
6864	SUPnoBI	TC superv. blocked: BI not marshalled				CG		GI		170	54
6865	CIR int	Trip circuit interrupted				CG		GI		170	55

\* = Function number 16 is announced only "Coming" to LSA.

Measured Values:

## Compatible Mode:

Type	Inf	FNo.	Meaning	Position in Telegram
p	144	602	Current in phase IL2 [%] =	1

## Extended Mode:

Type	Inf	FNo.	Meaning	Position in Telegram
134	125	601	Current in phase IL1 [%] =	1
		602	Current in phase IL2 [%] =	2
		603	Current in phase IL3 [%] =	3
		604	IE[%]=	4
		621	UL1E [%]=	5
		627	UE[%]=	6
		641	Active power Pa [%] =	7
		642	Reactive power Pr [%] =	8
		645	Apparent power S[%]=	9
		713	lea=	10
		714	ler=	11
		830	Sensitive earth current	12
		901	Maximum power factor cos phi	13

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