5TT58 Insta contactors

AC technology

	Rated operational current I_e			
	20 A	**25 A**	**40 A**	**63 A**
Main connection conductor cross-section, rigid	1.0 ... 10 mm²	1.0 ... 10 mm²	1 ... 25 mm²	1 ... 25 mm²
Main connection conductor cross-section, flexible with end sleeve	1.0 ... 6 mm²	1.0 ... 6 mm²	1 ... 16 mm²	1 ... 16 mm²
				

Contacts	U_e	U_c AC		Mounting width				
Insta contactors without manual switch								
2 NO	230 V	230 V		1 MW	5TT5800-0	–	–	–
		24 V		1 MW	5TT5800-2	–	–	–
4 NO	400 V	230 V	Standard	2 MW	–	5TT5830-0	–	–
				3 MW	–	–	5TT5840-0	5TT5850-0
			Capacitive loads up to 150 µF	2 MW	–	5TT5820-0	–	–
		115 V		2 MW	–	5TT5830-1	–	–
		24 V		2 MW	–	5TT5830-2	–	–
				3 MW	–	–	5TT5840-2	5TT5850-2
2 NC	230 V	230 V		1 MW	5TT5802-0	–	–	–
		24 V		1 MW	5TT5802-2	–	–	–
4 NC	400 V	230 V		2 MW	–	5TT5833-0	–	–
				3 MW	–	–	5TT5843-0	5TT5853-0
		24 V		2 MW	–	5TT5833-2	–	–
				3 MW	–	–	5TT5843-2	5TT5853-2
1 NO + 1 NC	230 V	230 V		1 MW	5TT5801-0	–	–	–
		24 V		1 MW	5TT5801-2	–	–	–
2 NO + 2 NC	400 V	230 V		2 MW	–	5TT5832-0	–	–
				3 MW	–	–	5TT5842-0	5TT5852-0
		24 V		2 MW	–	5TT5832-2	–	–
				3 MW	–	–	5TT5842-2	5TT5852-2
3 NO + 1 NC	400 V	230 V		2 MW	–	5TT5831-0	–	–
				3 MW	–	–	5TT5841-0	5TT5851-0
		115 V		2 MW	–	5TT5831-1	–	–
		24 V		2 MW	–	5TT5831-2	–	–
				3 MW	–	–	5TT5841-2	5TT5851-2
Insta contactors with manual switch O/I/Automatic								
2 NO	230 V	230 V		1 MW	5TT5800-6	–	–	–
		24 V		1 MW	5TT5800-8	–	–	–
4 NO	400 V	230 V		2 MW	–	5TT5830-6	–	–
				3 MW	–	–	5TT5840-6	5TT5850-6
		24 V		2 MW	–	5TT5830-8	–	–
				3 MW	–	–	5TT5840-8	–
1 NO + 1 NC	230 V	230 V		1 MW	5TT5801-6	–	–	–
		24 V		1 MW	5TT5801-8	–	–	–
3 NO + 1 NC	400 V	230 V		2 MW	–	5TT5831-6	–	–
				3 MW	–	–	5TT5841-6	–
		24 V		2 MW	–	5TT5831-8	–	–
				3 MW	–	–	5TT5841-8	–

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Further technical specifications

		5TT580.	5TT582. 5TT583.	5TT584.	5TT585.
Standards					
Standards		IEC 60947-4-1, IEC 60947-5-1, IEC 61095; EN 60947-4-1, EN 60947-5-1, EN 61095, VDE 0660			
Supply					
Number of poles		2	4	4	4
Rated operational current I_e		20 A	25 A	40 A	63 A
Primary operating range		0.85 ... 1.1 × U_c	0.85 ... 1.1 × U_c	0.85 ... 1.1 × U_c	0.85 ... 1.1 × U_c
Rated frequency f_c at AC		50/60 Hz	50/60 Hz	50/60 Hz	50/60 Hz
Rated power dissipation P_v	Pick-up power (without manual switch or manual switch in "I" position)	6 VA / 3.8 W	10 VA / 5 W	15.4 VA / 4.6 W	15.4 VA / 4.6 W
	Pick-up power (with manual switch in "AUTO" position)	12 VA / 10 W	33 VA / 25 W	62 VA / 50 W	62 VA / 50 W
	Holding power	2.8 VA / 1.2 W	5.5 VA / 1.6 W	7.7 VA / 3 W	7.7 VA / 3 W
	Per contact AC-1/AC-7a	1.7 VA	2.2 VA	4 VA	8 VA
Contacts					
Contact gap	Minimum	3.6 mm	3.6 mm	3.4 mm	3.4 mm
Minimum switching capacity	(= minimum contact load)	≥17 V; 50 mA	≥17 V; 50 mA	≥17 V; 50 mA	≥17 V; 50 mA
Electrical service life at I_e and load	AC-1/AC-7a switching cycles	200000	200000	100000	100000
	AC-3/AC-7b switching cycles	300000	500000	150000	150000
Mechanical service life	Switching cycles	3 million	3 million	3 million	3 million
Switching of resistive loads AC-1/AC-7a for rated operational power P_s	Single-phase (230 V) (NO contacts)	4 kW	5.4 kW	8.7 kW	13.3 kW
	Three-phase (400 V) (NO contacts)	–	16 kW	26 kW	40 kW
Switching of three-phase asynchronous motors AC-3/AC-7b for rated operational power P_s	Single-phase (230 V) (NO contacts)	1.3 kW [1]	1.3 kW	3.7 kW	5 kW
	Three-phase (400 V) (NO contacts)	–	4 kW	11 kW	15 kW
Maximum switching frequency at load		600 h^{-1}	600 h^{-1}	600 h^{-1}	600 h^{-1}
Safety					
Rated insulation voltage U_i		440 V	440 V	500 V	500 V
Rated impulse withstand voltage U_{imp}		4 kV	4 kV	4 kV	4 kV
Short-circuit protection, according to coordination type 1	Back-up fuse characteristic gL/gG	20 A	25 A	63 A	80 A
Overload withstand capability at 10 s	Per conducting path (NO contacts only)	72 A	68 A	176 A	240 A
Function					
Switching times	Closing (NO contacts)	15 ms ... 25 ms	10 ms ... 20 ms	15 ms ... 20 ms	15 ms ... 20 ms
	Opening (NO contacts)	20 ms	20 ms	10 ms	10 ms
	Closing (NC contacts)	20 ms ... 30 ms	20 ms ... 30 ms	5 ms ... 10 ms	5 ms ... 10 ms
	Opening (NC contacts)	10 ms	10 ms	10 ms ... 15 ms	10 ms ... 15 ms
Connections					
Coil connection terminals	± Screw (Pozidriv)	PZ 1	PZ 1	PZ 1	PZ 1
Main connection terminals	± Screw (Pozidriv)	PZ 1	PZ 1	PZ 2	PZ 2
Coil connection conductor cross-section	Rigid	1.0 ... 2.5 mm^2	1.0 ... 2.5 mm^2	1.0 ... 2.5 mm^2	1.0 ... 2.5 mm^2
	Flexible, with end sleeve	1.0 ... 2.5 mm^2	1.0 ... 2.5 mm^2	1.0 ... 2.5 mm^2	1.0 ... 2.5 mm^2
Main connection conductor cross-section	Rigid	1.0 ... 10 mm^2	1.0 ... 10 mm^2	1 ... 25 mm^2	1 ... 25 mm^2
	Flexible, with end sleeve	1.0 ... 6 mm^2	1.0 ... 6 mm^2	1 ... 16 mm^2	1 ... 16 mm^2
Tightening torque	Coil connection	0.6 Nm	0.6 Nm	0.6 Nm	0.6 Nm
	Main connection	1.2 Nm	1.2 Nm	3.5 Nm	3.5 Nm
Environmental conditions					
Permissible ambient temperature	For operation/for storage	–5 ... +55 °C / –30 ... +80 °C			
Degree of protection	Acc. to EN 60529	IP 20, with connected conductors			

[1] For NO contacts only.

Accessories

Auxiliary switches

- For right-hand-side retrofitting
- Max. one auxiliary switch per Insta contactor

Contacts	Mounting width	Article No.
2 NO	0.5 MW	5TT5910-0
1 NO + 1 NC	0.5 MW	5TT5910-1

Sealable terminal covers

For Insta contactor	Mounting width	Article No.
20 A	1 MW	5TT5910-5
25 A	2 MW	5TT5910-6
40 A and 63 A	3 MW	5TT5910-7

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5TT5 auxiliary switches

For 5TT5 Insta contactor

Rigid conductor cross-section	1 ... 2.5 mm²
Flexible conductor cross-section, with end sleeve	1 ... 2.5 mm²

Contacts	U_e AC	Mounting width	
2 NO	230 V / 400 V	0.5 MW	5TT5910-0
1 NO + 1 NC	230 V / 400 V	0.5 MW	5TT5910-1

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Further technical specifications

		5TT5910
Standards		
Standards		IEC 60947-5-1
Approvals		CCC
Supply		
Number of poles		2
Rated operational current I_e	230 V	6 A
	400 V	4 A
Rated frequency f_c at AC		50/60 Hz
Contacts		
Contact gap	Minimum	4 mm
Minimum switching capacity	(= minimum contact load)	≥12 V; 5 mA
Mechanical service life	Switching cycles	3 million
Maximum switching frequency at load		600 h^{-1}
Safety		
Rated insulation voltage U_i		500 V
Rated impulse withstand voltage U_{imp}		4 kV
Short-circuit protection, according to coordination type 1	Back-up fuse characteristic gL/gG	6 A
Connections		
Terminals	± Screw (Pozidriv)	PZ 1
Conductor cross-section	Rigid	1 ... 2.5 mm²
	Flexible, with end sleeve	1 ... 2.5 mm²
Tightening torque		0.8 Nm
Environmental conditions		
Permissible ambient temperature	For operation/for storage	–5 ... +55 °C / –30 ... +80 °C
Degree of protection	Acc. to EN 60529	IP 20, with connected conductors

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5TT3 soft-starting devices

For two-phase motor control

Rigid conductor cross-section	Max. 2× 2.5 mm²
Flexible conductor cross-section, with end sleeve	Min. 1× 0.5 mm²

Version	U_e AC	Mounting width	
Three-phase	400 V	6 MW	5TT3440

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Further technical specifications

		5TT3440
Standards		
Standards		EN 60947-4-2 (VDE 0660-117)
Supply		
Line/motor voltage		400 V AC
Primary operating range		0.8 ... 1.1 × U_c
Rated frequency f_c at AC		50/60 Hz
Rated power		3.5 VA
Rated power dissipation P_v at rated operational current	Coil/drive	3.5 VA
	Per contact	4.6 VA
Rated output of motor at 400 V	Max.	5500 VA
	Min.	300 VA
Startup voltage		30 ... 70%
Starting ramp		0.1 ... 10 s
Safety		
Quick-acting semiconductor fuse		35 A
Function		
Switching frequency 3× I_N, T_{AN} = 10 s, v_u = 20%	Switching cycles (up to 3 kW)	36 h^{-1}
	Switching cycles (from 3 ... 5.5 kW)	20 h^{-1}
Recovery time		100 ms
Connections		
Conductor cross-section	Rigid	Max. 2× 2.5 mm²
	Flexible, with end sleeve	Min. 1× 0.5 mm²
Environmental conditions		
Permissible ambient temperature		–20 ... +60 °C
Resistance to climate	Acc. to EN 60068-1	20/60/4

System overview, page 5/4

7LF4 digital time switches

Mini

- Weekly program
- 28 programs
- Automatic daylight-saving adjustment

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Contacts	U_c	Channels	Mounting width	
1 NO	230 V AC	1	1 MW	7LF4501-5

Further technical specifications

		Mini
Standards		
Standards		EN 60730-1, -2-7; VDE 0631-1, -2-7
Supply		
Primary operating range		0.85 ... 1.1 × U_c
Frequency range		50/60 Hz
Rated power dissipation P_v		0.9 VA
Channels		
Rated operational voltage U_e		250 V AC
Rated operational current I_e	At p.f. = 1	16 A
	At p.f. = 0.6	10 A
Contacts		
Minimum contact load		12 V / 100 mA
Electrical switching cycles	At p.f. = 1	6000 (20 A)
Mechanical switching cycles		>5 million
Incandescent lamp load		5 A
Energy-saving lamp load		300 W
Fluorescent lamp load	Parallel p.f. correction 70 µF	60 VA
	Uncorrected	2500 VA
Safety		
Different phases between operating mechanism and contact		Permissible
Rated impulse withstand voltage U_{imp}		4 kV
Electrostatic discharge	Acc. to IEC 61000-4-2	>8.0 kV
EMC: Burst	Acc. to IEC 61000-4-4	>4.4 kV
EMC: Surge	Acc. to IEC 61000-4-5	>2.0 kV
Overvoltage category	Acc. to EN 61010-1	III
Function		
Clock errors per day	Typical	±1 s/day
Power reserve storage	Battery	3 years
Make and break cycles		1 min
Minimum switching sequences		1 min
Control input	Terminal S	–
Programs [1]		28
Battery type		Li primary cell
Connections		
Terminals	± Screw (Pozidriv)	PZ 1
Conductor cross-sections of main current path	Rigid	1.5 ... 4 mm²
	Flexible, with end sleeve	Max. 2.5 mm²
Environmental conditions		
Permissible ambient temperature	For operation/ for storage	–10 ... +55 °C / –20 ... +60 °C
Resistance to climate	Acc. to EN 60068-1	10/055/21
Degree of protection	Acc. to EN 60529	IP20, with connected conductors
Safety class	Acc. to EN 61140	II

[1] A program consists of an ON time, an OFF time and assigned ON and OFF days or day blocks.

System overview, page 5/4

Top

- Weekly program
- 28 programs
- Text-assisted programming concept
  - Language: English
- Manual daylight-saving adjustment

Contacts	U_c	Channels	Mounting width	
1 CO	230 V AC	1	2 MW	7LF4511-0
2 CO	230 V AC	2	2 MW	7LF4512-0

Further technical specifications

		Top
Standards		
Standards		EN 60730-1, -2-7; VDE 0631-1, -2-7
Supply		
Primary operating range		0.85 ... 1.1 × U_c
Frequency range		50/60 Hz
Rated power dissipation P_v		2 VA
Channels		
Rated operational voltage U_e		250 V AC
Rated operational current I_e	At p.f. = 1	16 A
	At p.f. = 0.6	10 A
Contacts		
Minimum contact load		12 V / 100 mA
Electrical switching cycles	At p.f. = 1	100000
Mechanical switching cycles		10 million
Incandescent lamp load		8 A
Energy-saving lamp load		60 VA
Fluorescent lamp load	Parallel p.f. correction 70 µF	60 VA
	Uncorrected	2300 VA
Safety		
Different phases between operating mechanism and contact		Permissible [2]
Rated impulse withstand voltage U_{imp}		4 kV
Electrostatic discharge	Acc. to IEC 61000-4-2	>8.0 kV
EMC: Burst	Acc. to IEC 61000-4-4	>4.4 kV
EMC: Surge	Acc. to IEC 61000-4-5	>2.0 kV
Overvoltage category	Acc. to EN 61010-1	III
Function		
Clock errors per day	Typical	±1.5 s/day
Power reserve storage	Battery	3 years
Make and break cycles		1 min
Minimum switching sequences		1 min
Control input	Terminal S	No
Programs [1]		28 (14 per channel)
Program memory	Captive	No
Battery type		Li primary cell
Connections		
Terminals	± Screw (Pozidriv)	PZ 1
Conductor cross-sections of main current path	Rigid	1.5 ... 4 mm²
	Flexible, with end sleeve	Max. 2.5 mm²
Environmental conditions		
Permissible ambient temperature	For operation/ for storage	−20 ... +55 °C / −20 ... +60 °C
Resistance to climate	Acc. to EN 60068-1	20/055/21
Degree of protection	Acc. to EN 60529	IP20, with connected conductors
Safety class	Acc. to EN 61140	II

[1] A program consists of an ON time, an OFF time and assigned ON and OFF days or day blocks.
[2] The combination of line voltage (230 V) and SELV is not permissible in conjunction with a 2-channel time switch. This requirement is, however, admissible in the case of 1-channel time switch.

System overview, page 5/4

7LF4 digital time switches

Profi

- Weekly program
- Vacation program
- Random program
- Expert mode
- Cycle function
- Text-assisted programming concept
  – 15 languages
- Simple program creation on a PC
  using the supplied software, with 7LF4941-0 USB adapter
- Automatic daylight-saving adjustment
- Operating hours counter, counting range: 65535 h
- Accurate to the second hh:mm:ss
- Synchronization 50/60 Hz

Contacts	U_c	Channels	Mounting width	
1 CO	230 V AC	1	2 MW	7LF4521-0
	24 V AC/DC	1	2 MW	7LF4521-2
2 CO	230 V AC	2	2 MW	7LF4522-0
	24 V AC/DC	2	2 MW	7LF4522-2

Further technical specifications

		Profi
Standards		
Standards		EN 60730-1, -2-7; VDE 0631-1, -2-7
Approvals		UL File No. E301698
Supply		
Primary operating range	U_c 230 V	0.85 ... 1.1 × U_c
	U_c 24 V	0.9 ... 1.1 × U_c
Frequency range	U_c 230 V	50/60 Hz
	U_c 24 V	50/60 Hz
Rated power dissipation P_v	U_c 230 V	2 VA
	U_c 24 V	2 VA
Channels		
Rated operational voltage U_e		250 V AC
Rated operational current I_e	At p.f. = 1	16 A
	At p.f. = 0.6	10 A
Contacts		
Minimum contact load		12 V / 100 mA
Electrical switching cycles	At p.f. = 1	100000
Mechanical switching cycles		10 million
Incandescent lamp load		8 A
Energy-saving lamp load		1000 W
Fluorescent lamp load	Parallel p.f. correction 70 µF	600 VA
	Uncorrected	2000 VA
Safety		
Different phases between operating mechanism and contact		Permissible [2]
Rated impulse withstand voltage U_{imp}		4 kV
Electrostatic discharge	Acc. to IEC 61000-4-2	>8.0 kV
EMC: Burst	Acc. to IEC 61000-4-4	>4.4 kV
EMC: Surge	Acc. to IEC 61000-4-5	>2.0 kV
Overvoltage category	Acc. to EN 61010-1	III
Function		
Clock errors per day	Typical	±0.1 s/day
Power reserve storage	Battery	5 years
Make and break cycles		1 s
Minimum switching sequences		1 s
Control input	Terminal S	No
Programs [1]		28
Program memory	Captive	Yes
Battery type		Li primary cell
Connections		
Terminals	± Screw (Pozidriv)	PZ 1
Conductor cross-sections of main current path	Rigid	1.5 ... 4 mm²
	Flexible, with end sleeve	Max. 2.5 mm²
Environmental conditions		
Permissible ambient temperature	For operation/for storage	–20 ... +55 °C / –20 ... +60 °C
Resistance to climate	Acc. to EN 60068-1	20/055/21
Degree of protection	Acc. to EN 60529	IP20, with connected conductors
Safety class	Acc. to EN 61140	II

[1] A program consists of an ON time, an OFF time and assigned ON and OFF days or day blocks.
[2] The combination of line voltage (230 V) and SELV is not permissible in conjunction with a 2-channel time switch. This requirement is, however, admissible in the case of 1-channel time switch.

System overview, page 5/4

Astro

- Weekly program
- Vacation program
- Random program
- Expert mode
- Astro function
- Text-assisted programming concept
  – 15 languages
- Simple program creation on a PC using the supplied software, with 7LF4941-0 USB adapter
- Automatic daylight-saving adjustment
- Operating hours counter, counting range: 65535 h
- Accurate to the second hh:mm:ss
- Synchronization 50/60 Hz
- Input disable via PIN code
- Daylight-saving correction
- 1 h test

Contacts	U_c	Channels	Mounting width	
1 CO	230 V AC	1	2 MW	7LF4531-0
2 CO	230 V AC	2	2 MW	7LF4531-2

Further technical specifications

		Astro
Standards		
Standards		EN 60730-1, -2-7; VDE 0631-1, -2-7
Approvals		UL File No. E301698
Supply		
Primary operating range		0.85 ... 1.1 × U_c
Frequency range		50/60 Hz
Rated power dissipation P_v		2 VA
Channels		
Rated operational voltage U_e		250 V AC
Rated operational current I_e	At p.f. = 1	16 A
	At p.f. = 0.6	10 A
Contacts		
Minimum contact load		12 V / 100 mA
Electrical switching cycles	At p.f. = 1	100000
Mechanical switching cycles		10 million
Incandescent lamp load		8 A
Energy-saving lamp load		1000 W
Fluorescent lamp load	Parallel p.f. correction 70 µF	600 VA
	Uncorrected	2000 VA
Safety		
Different phases between operating mechanism and contact		Permissible [2]
Rated impulse withstand voltage U_{imp}		4 kV
Electrostatic discharge	Acc. to IEC 61000-4-2	>8.0 kV
EMC: Burst	Acc. to IEC 61000-4-4	>4.4 kV
EMC: Surge	Acc. to IEC 61000-4-5	>2.0 kV
Overvoltage category	Acc. to EN 61010-1	III
Function		
Clock errors per day	Typical	±0.1 s/day
Power reserve storage	Battery	5 years
Make and break cycles		1 s
Minimum switching sequences		1 s
Control input	Terminal S	Yes (with 1K clock)
Programs [1]		56 (2 × 28)
Program memory	Captive	Yes
Battery type		Li primary cell
Connections		
Terminals	± Screw (Pozidriv)	PZ 1
Conductor cross-sections of main current path	Rigid	1.5 ... 4 mm²
	Flexible, with end sleeve	Max. 2.5 mm²
Environmental conditions		
Permissible ambient temperature	For operation/ for storage	–20 ... +55 °C / –20 ... +60 °C
Resistance to climate	Acc. to EN 60068-1	20/055/21
Degree of protection	Acc. to EN 60529	IP20, with connected conductors
Safety class	Acc. to EN 61140	II

[1] A program consists of an ON time, an OFF time and assigned ON and OFF days or day blocks.
[2] The combination of line voltage (230 V) and SELV is not permissible in conjunction with a 2-channel time switch. This requirement is, however, admissible in the case of 1-channel time switch.

System overview, page 5/4

7LF4 digital time switches

Accessories

		Mini	Top	Profi	Astro
Data keys					
 • For Profi and Astro digital time switches • Programming at the PC (7LF4941-0 USB adapter and software required) • Read-in of programs to the time switch • Writing of programs from the time switch • Transfer of programs – From PC to time switch and vice versa – From time switch to time switch					
	Article No.				
	7LF4941-1	–	–	■	■
USB adapter and software					
 • For Profi and Astro digital time switches • For the reading and writing of data keys at the PC • Including programming software • Including 7LF4941-1 data key for Profi and Astro • Compatible with 7LF4940-1 data key (predecessor model) and 7LF4940-2 data key • Can be connected via USB interface • System requirements: – Windows 7, Windows Vista, Windows 2000, Windows ME, Windows XP or Windows 98 Second Edition – USB connection – 40 MB free disk space					
	Article No.				
	7LF4941-0	–	–	■	■
Holders for front panel installation					
 • Universal application for devices from 1 MW ... 6 MW • Cutout dimensions: – Height $45^{+0.5}$ mm – Width 23 mm, 41 mm, 59 mm, 77 mm, 95 mm or 113 mm					
	Article No.				
	7LF9006	■	■	■	■

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7LF5 mechanical time switches

Time switches without power reserve

		For standard mounting rail		For wall mounting (surface mounting)
				
Contacts	**Mounting width**			
With day disk				
1 NO	1 MW	7LF5300-1	–	–
1 CO	3 MW	–	7LF5300-5	–
	–	–	–	7LF5301-0
With week disk				
1 CO	3 MW	–	7LF5300-6	–

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Further technical specifications

		7LF5300-1	7LF5300-5	7LF5300-6	7LF5301-0
Standards					
Standards		EN 60730-1, -2-7, UL 917, UL 917, CSA C22.2 No. 14 and 177			
Approvals		VDE, UL file: E301698			
Supply					
Rated control supply voltage U_c		230 V AC			
Primary operating range	U_c 230 V AC	0.85 ... 1.1 × U_c			
Rated frequency		50 Hz			
Frequency range		50 Hz			
Rated power dissipation P_v		1 VA			
Channels					
Rated operational voltage U_e		250 V AC			
Rated operational current I_e	At p.f. = 1	16 A			
	At p.f. = 0.6	4 A			
Contacts					
Minimum contact load		4 V / 1 mA			
Electrical switching cycles	At p.f. = 1	100000			
Mechanical switching cycles		20 million			
Incandescent lamp load		5 A			
Fluorescent lamp load	Parallel p.f. correction 70 µF	60 VA			
	Uncorrected	1400 VA			
Safety					
Different phases between operating mechanism and contact		Permissible			
Electrical isolation, creepage distances and clearances	Operating mechanism	8 mm			
	Contact	6 mm			
Rated impulse withstand voltage U_{imp}		4 kV			
Electrostatic discharge	Acc. to IEC 61000-4-2	>8.0 kV			
EMC: Burst	Acc. to IEC 61000-4-4	>4.4 kV			
EMC: Surge	Acc. to IEC 61000-4-5	>2.0 kV			
Overvoltage category	Acc. to EN 61010-1	III			
Function					
Switching accuracy		±5 min	±5 min	±30 min	±5 min
Clock errors		System-synchronized	System-synchronized	System-synchronized	System-synchronized
Make and break cycles		15 min	15 min	120 min	10 min
Minimum switching sequences		30 min	30 min	240 min	30 min
Connections					
Terminals	± Screw (Pozidriv)	PZ 1			
Conductor cross-sections of main current path	Rigid	1.5 ... 4 mm²			
	Flexible, with end sleeve	Max. 2.5 mm²			
	Flexible, without end sleeve	Max. 4 mm²			
Environmental conditions					
Permissible ambient temperature	For operation/for storage	–10 ... +55 °C / –10 ... +60 °C			
Resistance to climate	Acc. to EN 60068-1	10/055/21			
Degree of protection	Acc. to EN 60529	IP20, with connected conductors			
Safety class	Acc. to EN 61140	II			

Accessories

Holders for front panel installation

- Universal application for devices from 1 MW ... 6 MW
- Cutout dimensions:
  - Height $45^{+0.5}$ mm
  - Width 23 mm, 41 mm, 59 mm, 77 mm, 95 mm or 113 mm

Article No.
7LF9006

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7LF5 mechanical time switches

Time switches with power reserve

	For standard mounting rail			For wall mounting (surface mounting)
Time buffering in the event of a power failure	–	–	■	–
Automatic daylight-saving adjustment	–	–	■	–
Automatic time setting for Central European time zone during commissioning	–	–	■	–
				

Contacts	Mounting width				
With day disk					
1 NO	1 MW	7LF5301-1	–	–	–
1 CO	3 MW	–	7LF5301-6	7LF5301-4	–
	–	–	–	–	7LF5305-0
With week disk					
1 CO	3 MW	–	7LF5301-7	7LF5301-5	–

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Further technical specifications

		7LF5301-1	7LF5301-4	7LF5301-5	7LF5301-6	7LF5301-7	7LF5305-0
Standards							
Standards		EN 60730-1, -2-7, UL 917, UL 917, CSA C22.2 No. 14 and 177					
Approvals		VDE, UL file: E301698					
Supply							
Rated control supply voltage U_c		230 V AC	230 V AC	230 V AC	230 V AC	230 V AC	230 V AC
Primary operating range		0.85 ... 1.1 × U_c	0.85 ... 1.1 × U_c	0.85 ... 1.1 × U_c	0.85 ... 1.1 × U_c	0.85 ... 1.1 × U_c	0.85 ... 1.1 × U_c
Rated frequency		50 Hz	50 Hz	50 Hz	50 Hz	50 Hz	50 Hz
Frequency range		50/60 Hz	50/60 Hz	50/60 Hz	50/60 Hz	50/60 Hz	50/60 Hz
Rated power dissipation P_v		1 VA	0.2 VA	0.2 VA	1 VA	1 VA	1 VA
Channels							
Rated operational voltage U_e		250 V AC					
Rated operational current I_e	At p.f. = 1	16 A					
	At p.f. = 0.6	4 A					
Contacts							
Minimum contact load		4 V / 1 mA					
Electrical switching cycles	At p.f. = 1	100000					
Mechanical switching cycles		20 million					
Incandescent lamp load		5 A					
Fluorescent lamp load	Parallel p.f. correction 70 µF	60 VA					
	Uncorrected	1400 VA					
Safety							
Different phases between operating mechanism and contact		Permissible					
Electrical isolation, creepage distances and clearances	Operating mechanism	8 mm					
	Contact	6 mm					
Rated impulse withstand voltage U_{imp}		4 kV					
Electrostatic discharge	Acc. to IEC 61000-4-2	>8.0 kV					
EMC: Burst	Acc. to IEC 61000-4-4	>4.4 kV					
EMC: Surge	Acc. to IEC 61000-4-5	>2.0 kV					
Overvoltage category	Acc. to EN 61010-1	III					
Function							
Switching accuracy		±5 min	±5 min	±30 min	±5 min	±30 min	±5 min
Clock errors		±2.5 s/day	±0.2 s/day	±60 s/day	±2.5 s/day	±2.5 s/day	±2.5 s/day
Power reserve storage		100 h	6 years	6 years	100 h	100 h	100 h
Make and break cycles		15 min	15 min	120 min	15 min	120 min	15 min
Minimum switching sequences		30 min	30 min	240 min	30 min	240 min	30 min
Battery type		NiMH cell	Li primary cell	Li primary cell	NiMH cell	NiMH cell	NiMH cell
Minimum loading time		48 h	–	–	48 h	48 h	48 h
Service life of battery	At 20 °C	6 years	10 years	10 years	6 years	6 years	6 years
	At 40 °C	5 years	5 years	5 years	5 years	5 years	5 years
Connections							
Terminals	± Screw (Pozidriv)	PZ 1					
Conductor cross-sections of main current path	Rigid	1.5 ... 4 mm²					
	Flexible, with end sleeve	Max. 2.5 mm²					
	Flexible, without end sleeve	Max. 4 mm²					
Environmental conditions							
Permissible ambient temperature	Storage/operation	–10 ... +60 °C / –10 ... +55 °C					
Resistance to climate	Acc. to EN 60068-1	10/055/21					
Degree of protection	Acc. to EN 60529	IP20, with connected conductors					
Safety class	Acc. to EN 61140	II					

Accessories

Holders for front panel installation

- Universal application for devices from 1 MW ... 6 MW
- Cutout dimensions:
  - Height $45^{+0.5}$ mm
  - Width 23 mm, 41 mm, 59 mm, 77 mm, 95 mm or 113 mm

Article No.
7LF9006

System overview, page 5/4

7LF6 timers for buildings **new**

	Standard stairwell lighting timers	Multi stairwell lighting timers
3-wire circuit	■	■
4-wire circuit	■	■
Zero crossing circuit	■	■
Operation	Resettable	Resettable

Contacts	Warning of impending switch-off	Mounting width		
1 NO	–	1 MW	7LF6310	–
	Flickering	1 MW	–	7LF6311

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Further technical specifications

		7LF6310	7LF6311
Supply			
Rated operational current I_e	At p.f. = 1	16 A	
Rated operational voltage U_e		250 V AC	
Rated control supply voltage U_c		230 V AC	
Frequency range		50/60 Hz	
Rated power dissipation P_v		1 W	
Rated impulse withstand voltage		4 kV	
Contacts			
Channels		1	1
Max. glow lamp load		25 mA	50 mA
Separate multi-voltage input		–	8 ... 230 V AC/DC
Switching capacity	Inductive p.f. = 0.6	2000 VA	2000 VA
Incandescent lamp load	Max.	3680 W	3680 W
Fluorescent lamp load	Series p.f. correction	2000 VA	2000 VA
	Parallel p.f. correction at 70 µF	1000 W	1000 W
Compact fluorescent lamp load		1000 W	1000 W
LED		1000 W	1000 W
Electronic transformers		2000 VA	2000 VA
Conventional transformers		2000 VA	2000 VA
Function			
Setting range		0.5 ... 10 min	0.5 ... 12 min
Manual switches		Yes	Yes
Programs		–	7 [1]
Environmental conditions			
Permissible ambient temperature	For operation	–20 ... +55 °C	
	For storage	–20 ... +60 °C	
Degree of protection	Installed	IP30	
Pollution degree		2	

[1] 7 functions, can be selected using selector switch on the device

System overview, page 5/4

5TT3 timers for industrial applications

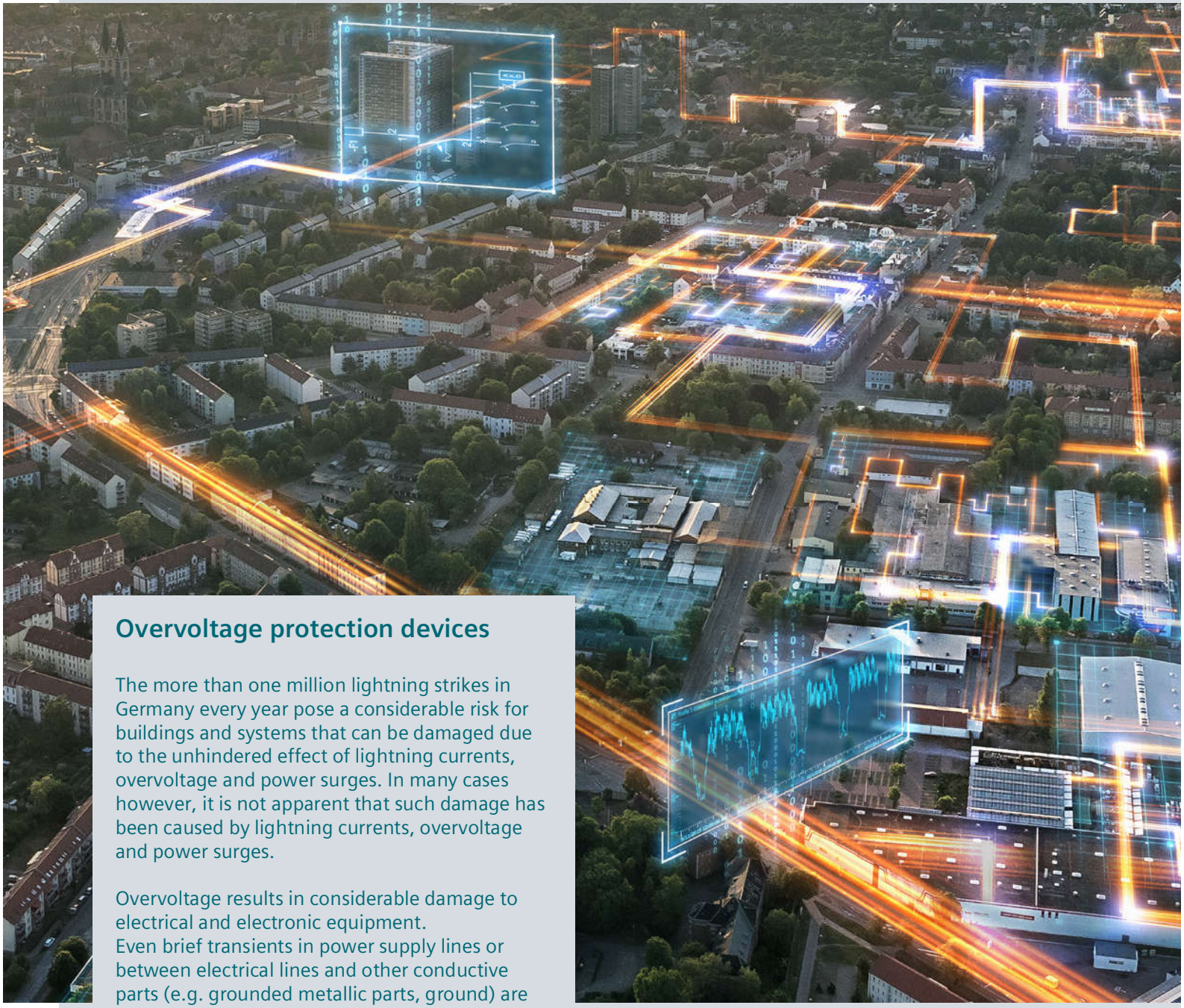
	Multifunction timers	Delay timers
Programmable for:	• Response delay • Passing make contact function • Pulse generator, delayed • Clock generator, starting with impulse • OFF-delay • Pulse converter • Passing break contact function • Response delay/OFF-delay	–
		

Contacts	Mounting width		
1 CO	1 MW	5TT3185	5TT3181

Further technical specifications

		5TT3185	5TT3181
Standards			
Standards		EN 60255; DIN VDE 0435-110	
Supply			
Rated operational current I_e		4 A	8 A
Rated operational voltage U_e		250 V AC	250 V AC
Rated control supply voltage U_c		12 ... 240 V AC	220 ... 240 V AC
		12 ... 240 V DC	–
Primary operating range	U_c 230 V AC, 50/60 Hz	0.8 ... 1.1 × U_c	0.8 ... 1.1 × U_c
Rated frequency f_n		45 ... 400 Hz	50/60 Hz
Rated power dissipation P_v		Approx. 1.5 VA	Approx. 5 VA
Contacts			
Contact gap		µm contact	µm contact
Minimum contact load		10 V / 300 mA	10 V / 300 mA
Electrical service life	Switching cycles	1.5×10^5	–
	At AC-15	–	1.5×10^5
Safety			
Rated impulse withstand voltage U_{imp}	Input / output	>4 kV	
Function			
Setting range		1 s ... 300 h	1 s ... 300 h
Recovery time		15 ... 80 ms	Approx. 40 ms
Connections			
Terminals	± Screw (Pozidriv)	PZ 2	
Conductor cross-sections of main current path	Rigid	Max. 2× 2.5 mm²	
	Flexible, with end sleeve	Min. 2× 1.5 mm²	
Environmental conditions			
Permissible ambient temperature		–40 ... +60 °C	
Resistance to climate	Acc. to EN 60068-1	40/60/4	

System overview, page 5/4



Overvoltage protection devices

The more than one million lightning strikes in Germany every year pose a considerable risk for buildings and systems that can be damaged due to the unhindered effect of lightning currents, overvoltage and power surges. In many cases however, it is not apparent that such damage has been caused by lightning currents, overvoltage and power surges.

Overvoltage results in considerable damage to electrical and electronic equipment.
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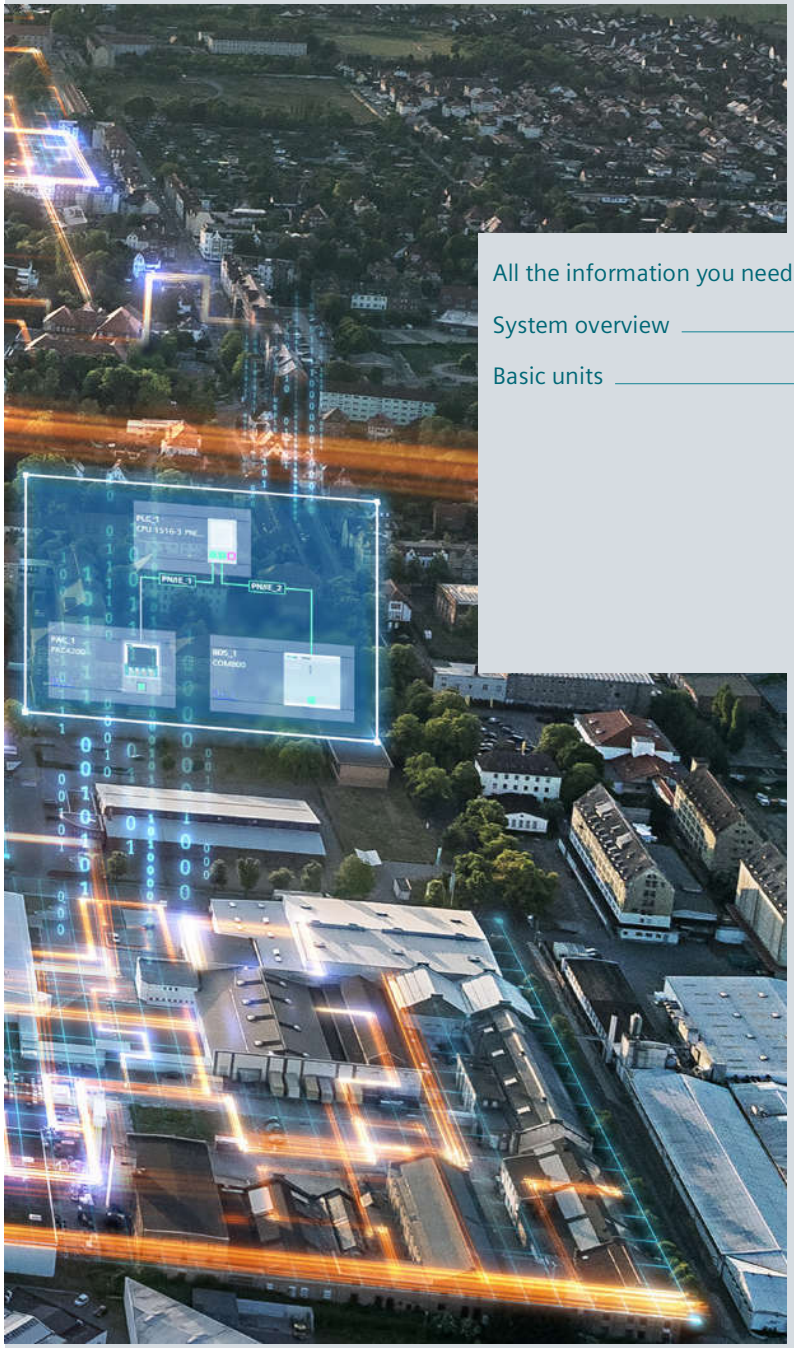
Overvoltage Protection Devices



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- Technology primer – Overvoltage protection devices (109756965)

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- Configuration manual Overvoltage protection devices (45315289)

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Technical overview of overvoltage protection devices

The fast way to get you to our online services

This page provides you with comprehensive information and links on overvoltage protection devices
www.siemens.com/lowvoltage/product-support (109769084)

System overview

Basic units

Lightning arresters, type 1

Combination surge arresters, type 1 + type 2

Combination surge arresters, type 1 / type 2

Surge arresters, type 2 (standard design)

Surge arresters, type 3

Replacement plugs

N-PE

L-N, L-PEN (type 1)

L-PEN