Switching Devices

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Configuration Manual

Switching Devices 2014
Article No.: 3ZW1012-5TT57-0AC1

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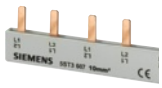
Introduction

Overview

Devices		Page	Application	Standards	Used in		
					Non-residential buildings	Residential buildings	Industry
	**5TE8 control switches**	8/5	For the switching of lighting and other electrical devices up to 20 A. For use in control cabinets for the logical linking of functions.	IEC/EN 60947-3; IEC/EN 60669-1; GB14048.3-2002 CCC	✓	✓	✓
	**5TE4 pushbuttons**	8/8	To be used as pushbuttons in control systems, e.g. to switch on seal-in circuits or as pushbuttons with maintained-contact function for manual use, as control switches or for the switching of loads up to 20 A.	IEC/EN 60947-3; IEC/EN 60669-1; GB14048.3-2002 CCC	✓	--	✓
	**5TE5 light indicators**	8/11	Light indicators for signaling switching states or faults in systems.	DIN VDE 0710-1	✓	--	✓
	**5TE On/Off switches**	8/13	For the switching of lighting, motors and other electrical devices from 20 to 125 A.	16 A ... 25 A and 40 A ... 100 A: IEC/EN 60947-3; IEC/EN 60669-1, 32 A and 125 A: IEC/EN 60947-3; GB14048.3-2002 CCC	✓	✓	✓
	**5TE DC isolators**	8/20	The DC isolator is a switch disconnector specially designed for activating solar modules in photovoltaic systems according to DIN VDE 0100-712.	IEC/EN 60947-3, IEC/EN 60669-1	✓	✓	✓
	**5ST busbars for modular installation devices**	8/22	For fast and safe connection	IEC/EN 60439-1, (VDE 0660-500)	✓	--	✓

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Devices		Page	Application	Standards	Used in		
					Non-residential buildings	Residential buildings	Industry
	**5TT4 remote control switches**	8/24	For the switching of lighting up to 16 A in rooms using several pushbuttons and central On/Off switches.	IEC 60669-1 IEC 60669-2 IEC 60669-3 EN 60669 (VDE 0632) EN 60669-2-2 and EN 60669-2-2/A1	✓	✓	✓
	**5TT4 switching relays**	8/28	For the switching of small loads up to 16 A or as coupling devices in control systems.	EN 60947-5-1 (VDE 0660-200)	✓	--	✓
5TT5 Insta contactors							
	**5TT5 Insta contactors, AC/DC technology**	8/30	Insta contactors 20 A, 25 A, 40 A and 63 A for the switching of heating, lighting, such as fluorescent lamps, incandescent lamps, ohmic or inductive loads.	IEC 60947-4-1 IEC 60947-5-1 IEC 61095 EN 60947-4-1 EN 60947-5-1 EN 61095 VDE 0660 UL 508	✓	✓	✓
	**5TT5 Insta contactors, AC technology**	8/33	Insta contactors 20 A, 25 A, 40 A and 63 A for the switching of heating, lighting, such as fluorescent lamps, incandescent lamps, ohmic or inductive loads.	IEC 60947-4-1 IEC 60947-5-1, IEC 61095, EN 60947-4-1 EN 60947-5-1 EN 61095 VDE 0660 NF C 61-480 (NF EN 61095)	✓	✓	✓
	**5TT3 soft-starting devices**	8/37	Protection of machines with transmission, belt or chain drives, conveyor belts, fans, pumps, compressors, packing machines or door operating mechanisms	EN 60947-4-2 (VDE 0660-117)	--	--	✓

Introduction

Devices		Page	Application	Standards	Used in		
					Non-residential buildings	Residential buildings	Industry
7LF, 5TT3 timers							
	**7LF4 digital time switches**	8/38	Minute-precise switching of devices and system components in day, week and year programs. Unique due to the wide variety of functions offered by the Mini and Top versions; for PC programming Astro, Profi and Expert	IEC 60730-1 and IEC 60730-2-7 EN 60730-1 and EN 60730-2-7 VDE 0631-1 and -2-7	✓	✓	✓
	**7LF5 mechanical time switches**	8/42	Accurate and 15-minute switching accuracy. With automatic time setting during commissioning and automatic switching to daylight savings.	IEC 60730-1 and IEC 60730-2-7 EN 60730-1 and EN 60730-2-7 VDE 0631-1 and -2-7 UL 60730	✓	✓	✓
	**7LF6 timers for buildings**	8/45	Lighting controls with stairwell lighting timers ensure the safe use of stairwells and save energy. Expanded applications for common rooms and garages, as well as the time switching of ventilators and fluorescent lamps.	IEC 60699 EN 60669, DIN 18015	✓	✓	--
	**5TT3 timers for industrial applications**	8/50	Multifunctional, delay, wiper, flashing and OFF-delay timers in control circuits expand the use of distribution boards in both small and large plants.	IEC 60255 EN 60255	--	--	✓

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Overview

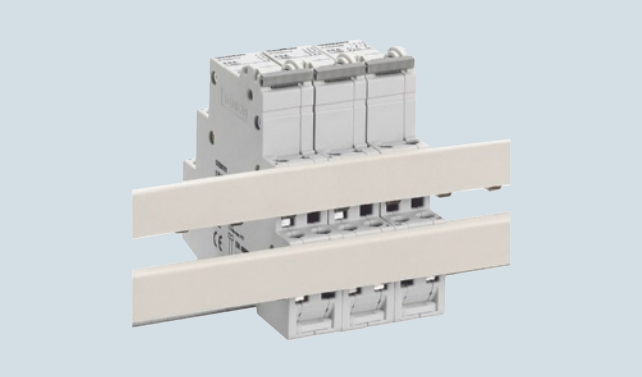
Two-way switches are used in control cabinets and distribution boards for switching small loads on/off or over.

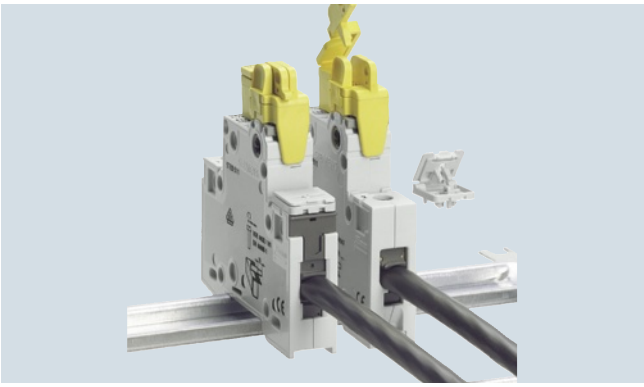
Group switches with center position permit the positions open/stop/closed, for example to control counter-clockwise rotation - Off - clockwise rotation.

Control switches in a range of contact versions have an integral control lamp for the ON setting.

The auxiliary switch (AS) signals the contact position of the switch. It has the same design as the auxiliary switch used for the miniature circuit breakers (see chapter "Miniature Circuit Breakers").

Benefits





- The control switches can be bus-mounted with each other or with 5TE48 pushbuttons, 5TE58 light indicators or 5TT41 remote control switches and 5TT42 switching relays
- For busbars, see page 8/22 ff.
- The handle locking device prevents undesired/inadvertent mechanical on/off switching
- The handle locking device is a universal accessory for all switches and miniature circuit breakers

Technical specifications

			5TE81
Standards			IEC/EN 60947-3; IEC/EN 60669-1
Approvals			EN 60669
Rated operational current I_e	Per conduct. path	A	20
Rated operational voltage U_e	1-pole Multi-pole	V AC V AC	230 400
Rated power dissipation P_v	Contact per pole	VA	0.7
Conventional thermal current I_{the}		A	20
Rated breaking capacity	At p.f. = 0.65	A	60
Rated making capacity	At p.f. = 0.65	A	60
Short-circuit strength In conjunction with fuse of the same rated operational current	EN 60269 gL/gG	kA	10
Rated impulse withstand voltage U_{imp}		kV	> 5
Clearances	Open contacts Between the poles	mm mm	2 × > 2 > 7
Creepage distances		mm	> 7
Mechanical service life	Switching cycles		25000
Electrical service life	Switching cycles		10000
Minimum contact load		V; mA	10; 300
Rated short-time currents Per conducting path at p.f. = 0.7 (The respective rated surge current can be calculated by multiplying by a factor of 1.5).	Up to 0.2 s Up to 0.5 s Up to 1 s Up to 3 s	A A A A	650 400 290 170
Terminals Max. tightening torque	±screw (Pozidriv)	 Nm	1 1.2
Conductor cross-sections	Rigid Flexible, with end sleeve	mm^2 mm^2	1.5 ... 6 1 ... 6
Permissible ambient temperature		°C	-5 ... +40
Resistance to climate At 95 % relative humidity	Acc. to DIN 50015	°C	45

5TE8 control switches

Selection and ordering data

	Version	I_e	U_e	Conductor cross-sections	Mounting width	DT	Article No.	Price per PU	PU (UNIT, SET, M)	PS*/ P. unit	PG	Weight per PU approx.
		A	V AC	up to mm^2	MW							kg
	**Two-way switches (20 A)**											
	With sealable switch position, separate handle locking device can be retrofitted											
	Retroffitable auxiliary switch											
	1 NO + 1 NC	20	400	6	1	▶	**5TE8151**		1	1 unit	029	0.075
	Auxiliary switch cannot be retrofitted											
	2 NO + 2 NC	20	400	6	1		**5TE8152**		1	1 unit	029	0.095
	3 NO + 1 NC	20	400	6	1		**5TE8153**		1	1 unit	029	0.094
	1 CO	20	230	6	1	▶	**5TE8161**		1	1 unit	029	0.072
	2 CO	20	400	6	1	▶	**5TE8162**		1	1 unit	029	0.090
	**Group switches with center position (20 A)**											
	With sealable switch position, separate handle locking device can be retrofitted											
	Auxiliary switch cannot be retrofitted											
	1 CO	20	230	6	1	▶	**5TE8141**		1	1 unit	029	0.060
	2 CO	20	400	6	1	▶	**5TE8142**		1	1 unit	029	0.091
	**Control switches (20 A)**											
	With fixed mounted glow lamp 230 V or diode 48 V, with replaceable, white transparent luminescent cap, with sealable switch position, separate handle locking device can be retrofitted											
	Auxiliary switch cannot be retrofitted											
	1 NO	20	230	6	1	▶	**5TE8101**		1	1 unit	029	0.070
		20	48	6	1		**5TE8101-3**		1	1 unit	029	0.056
	1 NO, for max. 150 m cable length											
		20	230	6	1		**5TE8105**		1	1 unit	029	0.066
	2 NO	20	400	6	1		**5TE8102**		1	1 unit	029	0.078
	3 NO	20	400	6	1		**5TE8103**		1	1 unit	029	0.091
	With mounted auxiliary switch (1 NO, 1 NC)											
	3 NO	20	400	6	1.5		**5TE8108**		1	1 unit	029	0.137

* You can order this quantity or a multiple thereof.

	Version	Mounting width	DT	Article No.	Price per PU	PU (UNIT, SET, M)	PS*/ P. unit	PG	Weight per PU approx.
		MW							kg
	**Auxiliary switches (AS)** For right-hand-side retrofitting with factory-fitted brackets, for further technical specifications, see also chapter "Miniature Circuit Breakers"								
	1 NO + 1 NC	0.5	►	**5ST3010**		1	1 unit	020	0.066
	2 NO	0.5		**5ST3011**		1	1 unit	020	0.055
	2 NC	0.5		**5ST3012**		1	1 unit	020	0.055
	**Handle locking devices** For all 5TE8 switches, can be sealed against undesired/inadvertent mechanical ON/OFF switching, for padlock with max. 3 mm shackle			**5ST3801**		1	1 unit	020	0.012
	**Spacers** Contour for modular devices with a mounting depth of 70 mm; can be snapped onto either side of the busbar, so that two spacers allow for convenient cable routing	0.5		**5TG8240**		1	2 units	026	0.010
	**Cap sets** For manual changing of the luminous plates for 5TE810 control switches Cap set comprising 1 red, green, yellow, white and blue plate each			**5TG8068**		1	1 set	029	0.006

For busbars for control switches, see page 8/22.

* You can order this quantity or a multiple thereof.

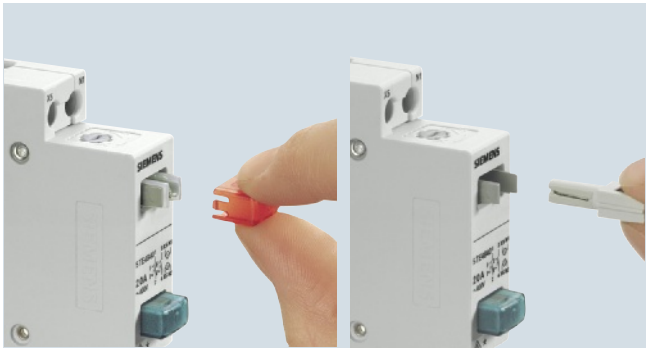
5TE4 pushbuttons

Overview

The pushbuttons are used in control systems, e.g. to switch on seal-in circuits or as pushbuttons with maintained-contact function for manual use, as control switches or for the switching of loads up to 20 A.

Benefits

- Pushbuttons with setting function for momentary-contact or maintained-contact operation can be changed over after installation and connection.
- Pushbuttons and light indicators with separate infeed in one device. This means they can also be used for voltages other than the switching voltage.
- In the case of devices with two pushbuttons and two lamps, each pushbutton must be set separately.



- Pilot lights and caps can also be safely replaced during operation without the use of tools. Functionality is quickly restored.
- A range of different-colored, transparent caps enable the signaling of plant states in compliance with IEC 60073. Three indications are possible for each device - this saves space.

Technical specifications

			5TE48
Standards			IEC/EN 60947-3; IEC/EN 60669-1
Approvals			EN 60669-1
Rated operational current I_e	Per conduct. path	A	20
Rated operational voltage U_e	1-pole Multi-pole	V AC V AC	230 400
Rated power dissipation P_v	Per pole	VA	0.6
Conventional thermal current I_{the}		A	20
Rated breaking capacity	At p.f. = 0.65	A	60
Rated making capacity	At p.f. = 0.65	A	60
Rated impulse withstand voltage U_{imp}		kV	> 5
Clearances	Open contacts Between the poles	mm mm	2 x > 2 > 7
Creepage distances		mm	> 7
Mechanical service life	Switching cycles		25000
Minimum contact load		V; mA	10; 300
Rated short-time currents Per conducting path at p.f. = 0.7 (The respective rated surge current can be calculated by multiplying by a factor of 1.5).	 Up to 0.2 s Up to 0.5 s Up to 1 s Up to 3 s	 A A A A	 650 400 290 170
Terminals Max. tightening torque	±screw (Pozidriv)	 Nm	1 1.2
Conductor cross-sections	Rigid Flexible, with end sleeve	mm^2 mm^2	1.5 ... 6 1 ... 6
Permissible ambient temperature		°C	-5 ... +40
Resistance to climate At 95 % relative humidity	 Acc. to DIN 50015	 °C	 45

Power loss of 5TG805.-. LEDs		**5TG805.-.**
Rated power dissipation P_v • LED	 VA	 0.4

	Color coding according to IEC 60073		
Color	Safety of people or environment	Process state	System state
Red	Danger	Emergency	Faulty
Yellow	Warning/Caution	Abnormal	
Green	Safety	Normal	
Blue	Stipulation		
White, Gray Black	No special significance assigned		

Selection and ordering data

	Version	I_e	U_e	Conductor cross-sections	Mounting width	DT	Article No.	Price per PU	PU (UNIT, SET, M)	PS*/ P. unit	PG	Weight per PU approx.
		A	V AC	up to mm²	MW							kg
	**Pushbuttons without maintained-contact function**											
	1 NO + 1 NC											
	1 gray pushbutton	20	400	6	1	►	**5TE4800**		1	1 unit	029	0.073
	1 red pushbutton	20	400	6	1		**5TE4805**		1	1 unit	029	0.074
	1 green pushbutton	20	400	6	1		**5TE4806**		1	1 unit	029	0.067
	1 yellow pushbutton	20	400	6	1		**5TE4807**		1	1 unit	029	0.074
	1 blue pushbutton	20	400	6	1		**5TE4808**		1	1 unit	029	0.071
	1 NO, 1 NO 1 green pushbutton, 1 blue pushbutton	20	400	6	1		**5TE4804**		1	1 unit	029	0.093
	Pushbuttons with maintained-contact function											
	1 NO + 1 NC 1 gray pushbutton	20	400	6	1		**5TE4810**		1	1 unit	029	0.074
	2 NO 1 gray pushbutton	20	400	6	1		**5TE4811**		1	1 unit	029	0.074
	3 NO + N 1 gray pushbutton	20	400	6	1		**5TE4812**		1	1 unit	029	0.093
	4 NC 1 gray pushbutton	20	400	6	1		**5TE4813**		1	1 unit	029	0.092
	2 CO 1 gray pushbutton	20	400	6	1		**5TE4814**		1	1 unit	029	0.089
	**Control pushbuttons with maintained-contact function and/or momentary-contact function and lamp, 230 V for max. 5 m cable length**											
	1 NO + 1 NC 1 red pushbutton	20	400	6	1	►	**5TE4820**		1	1 unit	029	0.083
	1 NO 1 red pushbutton	20	230	6	1	►	**5TE4821**		1	1 unit	029	0.073
	2 NO 1 red pushbutton	20	400	6	1		**5TE4823**		1	1 unit	029	0.084
	2 NC 1 red pushbutton	20	400	6	1		**5TE4824**		1	1 unit	029	0.083
	Control pushbuttons with maintained-contact function and/or momentary-contact function and lamp, 230 V for max. 150 m cable length											
	1 NO 1 red pushbutton	20	230	6	1		**5TE4822**		1	1 unit	029	0.074
	**Double pushbuttons with maintained-contact function and/or momentary-contact function**											
	1 NO and 1 NC, 1 green pushbutton, 1 red pushbutton	20	400	6	1		**5TE4830**		1	1 unit	029	0.078
	1 NO, 1 NC and 1 NO, 1 NC 1 green pushbutton, 1 red pushbutton	20	400	6	1		**5TE4831**		1	1 unit	029	0.095
	**Double pushbutton with maintained-contact function and/or momentary-contact function and two lamps, 230 V for max. 5 m cable length**											
	1 NO and 1 NO, 1 green pushbutton, 1 red pushbutton	20	400	6	1		**5TE4840**		1	1 unit	029	0.094
	1 NO and 1 NC, 1 green pushbutton, 1 red pushbutton	20	400	6	1		**5TE4841**		1	1 unit	029	0.094

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* You can order this quantity or a multiple thereof.

5TE4 pushbuttons

	Version	I_e	U_n	DT	Article No.	Price per PU	PU (UNIT, SET, M)	PS*/ P. unit	PG	Weight per PU approx.
		mA	V							kg
	**LEDs for manual replacement**									
	White	0.4	12 ... 60 AC/DC		**5TG8056-0**		1	5 units	029	0.005
	Red				**5TG8056-1**		1	5 units	029	0.005
	Yellow				**5TG8056-2**		1	5 units	029	0.005
	Green				**5TG8056-3**		1	5 units	029	0.005
	Blue				**5TG8056-4**		1	5 units	029	0.005
	White	0.4	115 AC/DC		**5TG8057-0**		1	5 units	029	0.005
	Red				**5TG8057-1**		1	5 units	029	0.005
	Yellow				**5TG8057-2**		1	5 units	029	0.005
	Green				**5TG8057-3**		1	5 units	029	0.005
	Blue				**5TG8057-4**		1	5 units	029	0.005
	White	0.4	230 AC		**5TG8058-0**		1	5 units	029	0.005
	Red				**5TG8058-1**		1	5 units	029	0.005
	Yellow				**5TG8058-2**		1	5 units	029	0.005
	Green				**5TG8058-3**		1	5 units	029	0.005
	Blue				**5TG8058-4**		1	5 units	029	0.005
	Cap sets, manually replaceable with colored caps with or without lamps									
	Gray, non-transparent (1 set = 5 units)				**5TG8060**		1	1/10 sets	029	0.004
	Red, transparent (1 set = 5 units)				**5TG8061**		1	1/10 sets	029	0.004
	Green, transparent (1 set = 5 units)				**5TG8062**		1	1/10 sets	029	0.004
	Yellow, transparent (1 set = 5 units)				**5TG8063**		1	1/10 sets	029	0.004
	Blue, transparent (1 set = 5 units)				**5TG8064**		1	1/10 sets	029	0.004
	Black, non-transparent (1 set = 5 units)				**5TG8065**		1	1/10 sets	029	0.004
	White, transparent (1 set = 5 units)				**5TG8066**		1	1/10 sets	029	0.004
	Red and green (1 set contains 10 lamps per color), yellow, blue and white (1 set contains 5 lamps per color)				**5TG8067**		1	1 set	029	0.011
	Red, green, yellow (1 set = 3 units)				**5TG8070**		1	1 set	029	0.007

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* You can order this quantity or a multiple thereof.

Overview

Light indicators are used to signal switching states or faults in systems.

They are available as single, double or triple light indicators.

Benefits

- Pilot lights and caps can also be safely replaced during operation without the use of tools
- A range of different-colored, transparent caps enable the signaling of plant states in compliance with IEC 60073. Three indications are possible for each device
- The lamps are mounted in a slotted base, which protects against polarity reversal. This ensures the correct polarization for all DC applications
- The devices have preferred positions for the N terminals, so that it is possible to bus-mount several devices. This ensures fast and simple installation
- A light indicator with three lamps enables three-phase signaling and "traffic-light signaling" in a single modular width

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Technical specifications

			5TE58
Standards			DIN VDE 0710-1
Rated operational voltage U_e	Max.	V AC	230 (for different voltages see 5TG8 lamps)
Rated power dissipation P_v		VA	See 5TG8 lamps
Clearances	Between the terminals	mm	> 7
Terminals Max. tightening torque	±screw (Pozidriv)	 Nm	1 1.2
Conductor cross-sections	Rigid Flexible, with end sleeve	mm^2 mm^2	1.5 ... 6 1 ... 6
Permissible ambient temperature		°C	-5 ... +40
Resistance to climate At 95 % relative humidity	Acc. to DIN 50015	°C	45

		5TG805.
Rated power dissipation P_v • LED	VA	0.4

Color coding according to IEC 60073

	Meaning		
Color	Safety of people and environment	Process state	System state
Red	Danger	Emergency	Faulty
Yellow	Warning/Caution	Abnormal	
Green	Safety	Normal	
Blue	Stipulation		
White	No special significance assigned		

5TE5 light indicators

Selection and ordering data

	Version	U_e	Conductor cross-sections	Mounting width	DT	Article No.	Price per PU	PU (UNIT, SET, M)	PS*/ P. unit	PG	Weight per PU approx.
		V AC	up to mm^2	MW							kg
	**Light indicators for a max. cable length of up to 5 m**										
	With 1 red lamp	230	6	1	▶	**5TE5800**		1	1/12 units	029	0.051
	With 2 lamps, green and red				▶	**5TE5801**		1	1 unit	029	0.068
	With 3 green lamps				▶	**5TE5802**		1	1 unit	029	0.076
	With 3 lamps, red, yellow and green				▶	**5TE5803**		1	1 unit	029	0.076
	**Light indicators for a max. cable length of up to 250 m**										
	With 1 red lamp	230	6	1		**5TE5804**		1	1 unit	029	0.063

		I_e	U_e	DT	Article No.	Price per PU	PU (UNIT, SET, M)	PS*/ P. unit	PG	Weight per PU approx.
		mA	V							kg
	**LEDs for manual replacement**									
	White	0.4	12 ... 60 AC/DC		**5TG8056-0**		1	5 units	029	0.005
	Red				**5TG8056-1**		1	5 units	029	0.005
	Yellow				**5TG8056-2**		1	5 units	029	0.005
	Green				**5TG8056-3**		1	5 units	029	0.005
	Blue				**5TG8056-4**		1	5 units	029	0.005
	White	0.4	115 AC/DC		**5TG8057-0**		1	5 units	029	0.005
	Red				**5TG8057-1**		1	5 units	029	0.005
	Yellow				**5TG8057-2**		1	5 units	029	0.005
	Green				**5TG8057-3**		1	5 units	029	0.005
	Blue				**5TG8057-4**		1	5 units	029	0.005
	White	0.4	230 AC		**5TG8058-0**		1	5 units	029	0.005
	Red				**5TG8058-1**		1	5 units	029	0.005
	Yellow				**5TG8058-2**		1	5 units	029	0.005
	Green				**5TG8058-3**		1	5 units	029	0.005
	Blue				**5TG8058-4**		1	5 units	029	0.005
	Cap sets for manual changing of colored caps									
	Red, transparent (1 set = 5 units)				**5TG8061**		1	1/10 sets	029	0.004
	Green, transparent (1 set = 5 units)				**5TG8062**		1	1/10 sets	029	0.004
	Yellow, transparent (1 set = 5 units)				**5TG8063**		1	1/10 sets	029	0.004
	Blue, transparent (1 set = 5 units)				**5TG8064**		1	1/10 sets	029	0.004
	White, transparent (1 set = 5 units)				**5TG8066**		1	1/10 sets	029	0.004
	Red and green (1 set = 10 lamps per color), yellow, blue and white (1 set = 5 lamps per color)				**5TG8067**		1	1 set	029	0.011
	Red, green, yellow (1 set = 3 units)				**5TG8070**		1	1 set	029	0.007

* You can order this quantity or a multiple thereof.

Overview

The devices are used for the switching of lighting, motors and other electrical devices.

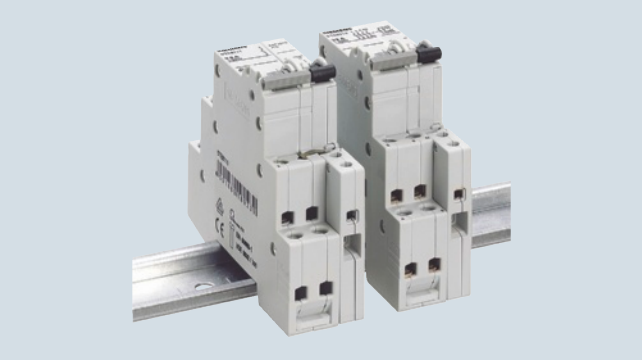
The rated currents of the range are 20 A to 125 A. There is a compact series of space-saving devices with up to 4 NO contacts in a single MW available for rated currents 20 A and 32 A.

The ON/OFF switches in the rated currents 32 A to 125 A can be used as switch disconnectors according to IEC/EN 60947-3.

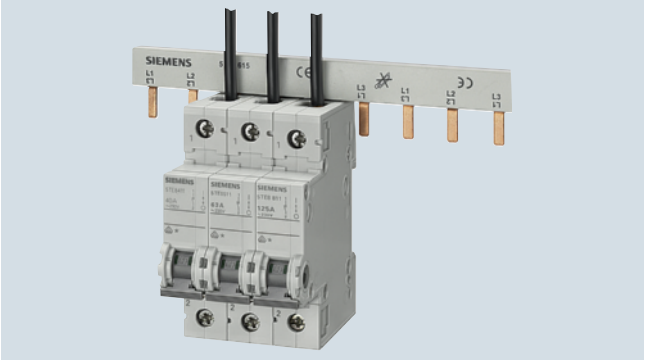
A special version of the ON/OFF switch with rated current 63 A is available for use in meter cabinets. This version can be locked in the "OFF" position using a special key. The clamping screws are mechanically covered so that they are no longer accessible.

In addition, the 5TE2 device versions can be used as switch disconnectors according to EN 60947-1 and serve as main control switches for the disconnection or isolation of plants according to EN 60204-1.

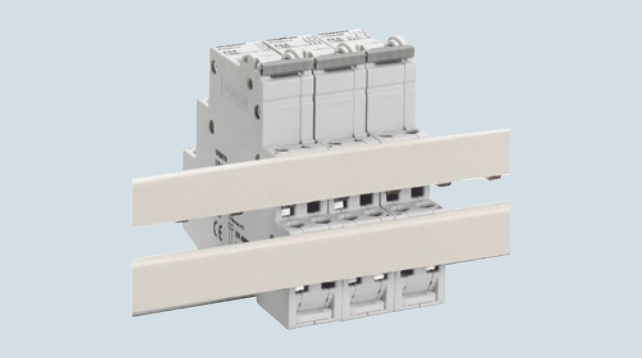
Benefits



- The switches can be retrofitted with auxiliary switches without the need for tools
- Uniform auxiliary switches for miniature circuit breakers and switches

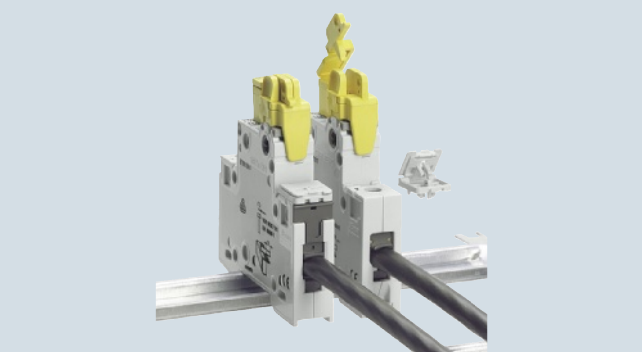


- Clear and visible conductor connection in front of the busbar for safe and easy mounting
- Optional top or bottom infeed as the terminals are identical



- The 20 A and 32 A switches can be bus-mounted with each other or with 5TE48 pushbuttons, 5TE58 light indicators or 5TT41 remote control switches and 5TT42 switching relays
- For busbars, see page 8/22

- Spacers can be used as compensating elements and have a width of 0.5 MW. They come with an integrated wiring duct for the insertion of conductors
- Two spacers installed on opposing side therefore offer space for large conductor cross-sections up to 15 mm in diameter



- The handle locking device prevents undesired/inadvertent mechanical on/off switching

5TE On/Off switches

Technical specifications

			5TE81	5TE82
Standards			IEC/EN 60947-3, (VDE 0660-107); IEC/EN 60669-1	IEC/EN 60947-3, (VDE 0660-107)
Approvals			EN 60669-1	
Rated operational current I_e	Per conduct. path	A	20	32
Rated operational voltage U_e	1-pole Multi-pole	V AC V AC	230 400	
Rated power dissipation P_v	Per pole, max.	VA	0.7	
Conventional thermal current I_{th}		A	20	32
Rated breaking capacity	At p.f. = 0.65	A	60	96
Rated making capacity	At p.f. = 0.65	A	60	96
Rated short-circuit making capacity I_{cm} In conjunction with fuse of the same rated operational current	EN 60269 gL/gG	kA	10	
Rated impulse withstand voltage U_{imp}		kV	> 5	
Clearances	Open contacts Between the poles	mm mm	2 × > 2 > 7	
Creepage distances		mm	> 7	
Mechanical service life		Switching cycles	25000	
Electrical service life		Switching cycles	10000	
Minimum contact load		V; mA	10; 300	
Rated short-time withstand current I_{cw} Per conducting path at p.f. = 0.7 (The corresponding rated surge current can be established by multiplying by factor 1.5.)	Up to 0.2 s Up to 0.5 s Up to 1 s Up to 3 s	A A A A	650 400 290 170	1000 630 450 250
Terminals Max. tightening torque	±screw (Pozidriv)	 Nm	1 1.2	
Conductor cross-sections	Rigid Flexible, with end sleeve	mm^2 mm^2	1.5 ... 6 1 ... 6	
Permissible ambient temperature		°C	-5 ... +40	
Resistance to climate At 95 % relative humidity	Acc. to DIN 50015	°C	45	

8

			5TE83	5TE84	5TE85	5TE86	5TE87	5TE88
Standards			IEC/EN 60947-3 (VDE 0660-107)					
			--	IEC/EN 60669-1 (VDE 0632-1)				--
Approvals			EN 60669-1					
Rated operational current I_e	Per conduct. path	A	32	40	63	80	100	125
Rated operational voltage U_e	1-pole Multi-pole	V AC V AC	230 400					
Rated power dissipation P_v	Per pole, max.	VA	0.7	0.9	2.2	3.5	5.5	8.6
Conventional thermal current I_{th}		A	32	40	63	80	100	125
Rated breaking capacity	At p.f. = 0.65	A	96	120	196	240	300	375
Rated making capacity	At p.f. = 0.65	A	96	120	196	240	300	375
Rated short-circuit making capacity I_{cm} In conjunction with fuse of the same rated operational current	EN 60269 gL/gG	kA	10					
Rated impulse withstand voltage U_{imp}		kV	> 5					
Clearances	Open contacts Between the poles	mm mm	> 7 > 7					
Creepage distances		mm	> 7					
Mechanical service life		Switching cycles	20000					
Electrical service life		Switching cycles	10000		5000	1000		
Minimum contact load		V; mA	24; 300					
Rated power Switching of resistive loads including moderate overload AC-21	1-pole 2-pole 3-/4-pole	kW kW kW	5 9 15	6.5 11 15	10 18 30	13 22 39	16 28 48	16 28 48
Rated short-time withstand current I_{cw} Per conducting path at p.f. = 0.7 (The corresponding rated surge current can be established by multiplying by factor 1.5.)	Up to 0.2 s Up to 0.5 s Up to 1 s Up to 3 s	A A A A	760 500 400 280	950 630 500 350	1500 1000 800 560	2700 1650 1350 800	3400 2100 1700 1000	3400 2100 1700 1000
Terminals Max. tightening torque	±screw (Pozidriv)	 Nm	2 3.5					
Conductor cross-sections	Rigid Flexible, with end sleeve	mm^2 mm^2	1 ... 35 1 ... 35			2.5 ... 50 2.5 ... 50		
Permissible ambient temperature		°C	-5 ... +40					
Resistance to climate At 95 % relative humidity	Acc. to DIN 50015	°C	45					

5TE On/Off switches

			5TE24	5TE25	5TE28
Standards			IEC/EN 60947-3, EN 60947-3 and IEC 60669-1, EN 60669-1		IEC 60947-3, EN 60947-3
Rated operational current I_e	Per conducting path	A	40	63	125
Rated operational voltage U_e	1-pole Multi-pole	V AC V AC	230 400	230 400	-- 400
Rated power dissipation P_v	Per pole, max.	W	3.4	4.4	10.9
Conventional thermal current I_{th}		A	40	63	125
Rated breaking capacity	At p.f. = 0.65	A	120	196	375
Rated making capacity	At p.f. = 0.65	A	120	196	375
Short-circuit withstand current In conjunction with fuse of the same rated operational current		kA	10		
Rated impulse withstand voltage U_{imp}		kV	> 5		
Clearances	Open contacts Between the poles	mm mm	> 7 > 7		
Creepage distances		mm	> 7		
Mechanical service life	Switching cycles		20000		
Electrical service life	Switching cycles		10000	5000	5000
Minimum contact load		V; mA	24; 300		
Rated power Switching of resistive loads including moderate overload AC-21	1-pole 2-pole 3/4-pole	kW kW kW	6.5 11 15	10 18 30	16 28 48
Rated short-time currents Per conducting path at p.f. = 0.7 (The corresponding rated current can be established by multiplying by factor 1.5.)	Up to 0.2 s Up to 0.5 s Up to 1 s Up to 3 s	A A A A	950 630 500 350	1500 1000 800 560	3400 2100 1700 1000
Terminals Max. tightening torque	± screw (Pozidriv)	Nm	2 2.5 ... 3	2 2.5 ... 3	2 3 ... 3.5
Conductor cross-sections	Rigid Flexible, with sleeve, min.	mm^2 mm^2	0.75 ... 35 0.75 ... 25	0.75 ... 35 0.75 ... 25	0.75 ... 50 0.75 ... 35
Permissible ambient temperature		°C	-25 ... +45		
Resistance to climate At 95 % relative humidity	Acc. to DIN 50015	°C	45		

Selection and ordering data

	Version	I_e	U_e	Conductor cross-sections	Mounting width	DT	Article No.	Price per PU	PU (UNIT, SET, M)	PS*/ P. unit	PG	Weight per PU approx.
		A	V AC	up to mm^2	MW							kg
	**ON/OFF switches (20 A and 32 A)**											
	With sealable switch position, separate handle locking device can be retrofitted											
	Retroffitable auxiliary switch											
	1 NO	20	230	6	1	▶	**5TE8111**		1	1/12 units	029	0.068
		32					**5TE8211**		1	1 unit	029	0.066
	2 NO	20	400	6	1	▶	**5TE8112**		1	1 unit	029	0.075
		32				▶	**5TE8212**		1	1 unit	029	0.076
	3 NO	20	400	6	1		**5TE8113**		1	1 unit	029	0.086
		32					**5TE8213**		1	1 unit	029	0.086
	Auxiliary switch cannot be retrofitted											
	3 NO + N	20	400	6	1		**5TE8114**		1	1 unit	029	0.094
		32				▶	**5TE8214**		1	1 unit	029	0.094
	With mounted auxiliary switch											
	3 NO + N	20	400	6	1.5		**5TE8118**		1	1 unit	029	0.138
		32					**5TE8218**		1	1 unit	029	0.143

* You can order this quantity or a multiple thereof.

	Version	I_e	U_e	Conductor cross-sections	Mounting width	DT	Article No.	Price per PU	PU (UNIT, SET, M)	PS*/ P. unit	PG	Weight per PU approx.
		A	V AC	up to mm²	MW							kg
	**ON/OFF switches (32 A to 125 A) can be used as switch disconnectors according to EN 60947-1** With sealable switch position, separate handle locking device can be retrofitted, auxiliary switches can be retrofitted											
	1 NO, red handle	63	230	35	1		**5TE8521**		1	1 unit	029	0.108
		100		50			**5TE8721**		1	1 unit	029	0.110
	1 NO, gray handle	32		35			**5TE8311**		1	1 unit	029	0.113
		40					**5TE8411**		1	1 unit	029	0.113
		63					**5TE8511**		1	1 unit	029	0.117
		80		50			**5TE8611**		1	1 unit	029	0.124
		100					**5TE8711**		1	1 unit	029	0.123
		125					**5TE8811**		1	1 unit	029	0.124
	2 NO, red handle	63	400	35	2		**5TE8522**		1	1 unit	029	0.195
		100		50			**5TE8722**		1	1 unit	029	0.216
	2 NO, gray handle	32		35		▶	**5TE8312**		1	1 unit	029	0.215
		40				▶	**5TE8412**		1	1 unit	029	0.216
		63				▶	**5TE8512**		1	1 unit	029	0.215
		80		50			**5TE8612**		1	1 unit	029	0.237
		100					**5TE8712**		1	1 unit	029	0.240
		125					**5TE8812**		1	1 unit	029	0.229
	3 NO, red handle	63	400	35	3		**5TE8523**		1	1 unit	029	0.321
		100		50			**5TE8723**		1	1 unit	029	0.355
	3 NO, gray handle	32		35		▶	**5TE8313**		1	1 unit	029	0.321
		40				▶	**5TE8413**		1	1 unit	029	0.320
		63				▶	**5TE8513**		1	1 unit	029	0.321
		80		50		▶	**5TE8613**		1	1 unit	029	0.337
		100				▶	**5TE8713**		1	1 unit	029	0.355
		125					**5TE8813**		1	1 unit	029	0.357
	3 NO+ N, red handle	63	400	35	4		**5TE8524**		1	1 unit	029	0.430
		100		50			**5TE8724**		1	1 unit	029	0.476
	3 NO+ N, gray handle	32		35		▶	**5TE8314**		1	1 unit	029	0.428
		40				▶	**5TE8414**		1	1 unit	029	0.430
		63				▶	**5TE8514**		1	1 unit	029	0.426
		80		50		▶	**5TE8614**		1	1 unit	029	0.475
		100				▶	**5TE8714**		1	1 unit	029	0.476
		125				▶	**5TE8814**		1	1 unit	029	0.477
	4 NO, gray handle	32		35	4		**5TE8315**		1	1 unit	029	0.424
		40					**5TE8415**		1	1 unit	029	0.434
		63					**5TE8515**		1	1 unit	029	0.436
		80		50			**5TE8615**		1	1 unit	029	0.479
		100					**5TE8715**		1	1 unit	029	0.481
		125					**5TE8815**		1	1 unit	029	0.482
	**ON/OFF switches 63 A can be used as switch disconnectors according to EN 60947-1** Terminal access from the bottom and off-position lockable with special key (exclusive power utility tool) lockable Reduced lower terminal entry for conductors with approx. 7 mm diameter											
	3 NO	63	400	35	3		**5TE8533**		1	1 unit	029	0.311
	**Auxiliary switches (AS)** For all 5TE8 switches, for right-hand-side retrofitting with factory-fitted brackets, for further technical specifications, see chapter "Miniature Circuit Breakers"											
	1 NO + 1 NC				0.5	▶	**5ST3010**		1	1 unit	020	0.066
	2 NO				0.5		**5ST3011**		1	1 unit	020	0.055
	2 NC				0.5		**5ST3012**		1	1 unit	020	0.055
	Auxiliary switches for low power											
	1 NO + 1 NC				0.5	▶	**5ST3013**		1	1 unit	020	0.055
	2 NO				0.5		**5ST3014**		1	1 unit	020	0.054
	2 NC				0.5		**5ST3015**		1	1 unit	020	0.060

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* You can order this quantity or a multiple thereof.

5TE On/Off switches

	Version	I_e	U_e	Conductor cross-sections	Mounting width	DT	Article No.	Price per PU	PU (UNIT, SET, M)	PS*/ P. unit	PG	Weight per PU approx.
		A	V AC	up to mm^2	MW							kg
	**Handle locking devices** For all 5TE8 switches, can be sealed against undesired/inadvertent mechanical ON/OFF switching, for padlock with max. 3 mm shackle						**5ST3801**		1	1 unit	020	0.012
	**Terminal covers** For all 5TE85 to 5TE88 switches, in 1 MW per pole version, for covering screw openings, sealable					▶	**5ST3800**		1	10 units	020	0.002
	**Spacers** Contour for modular devices with a mounting depth of 70 mm; can be snapped onto either side of the busbar, so that two spacers allow for convenient cable routing				0.5		**5TG8240**		1	2 units	026	0.010
	**Phase connectors** For easier wiring in various wiring versions and bus mountings or as a support terminal for conductors from 2.5 mm^2 to 50 mm^2											
	1P	125	230	50	1		**5TE9112**		1	1 unit	029	0.114
	**N conductor connectors** For easier wiring in various circuit versions and bus mountings or as a support terminal for N conductors from 2.5 mm^2 to 50 mm^2 with blue color marking											
	1P	125	230	50	1		**5TE9113**		1	1 unit	029	0.114

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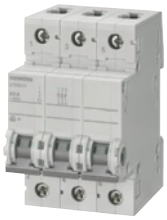
* You can order this quantity or a multiple thereof.

	Version	I_e	U_e	Conductor cross-sections	Mounting width	DT	Article No.	Price per PU	PU (UNIT, SET, M)	PS*/ P. unit	PG	Weight per PU approx.
		A	V AC	up to mm^2	MW							kg
	ON/OFF switches (40 A to 125 A)											
	Manual quick-assembly and disassembly systems, without the use of tools, separate switching position indication red/green, HS, FS, UR and ST can be retrofitted											
	1 NO	40	230		1		**5TE2411-0**		1	1 unit	029	0.123
		63					**5TE2511-0**		1	1 unit	029	0.138
	2 NO	40	400		2		**5TE2412-0**		1	1 unit	029	0.260
		63					**5TE2512-0**		1	1 unit	029	0.249
		125			3		**5TE2812-0**		1	1 unit	029	0.482
	3 NO	40	400		3		**5TE2413-0**		1	1 unit	029	0.382
		63					**5TE2513-0**		1	1 unit	029	0.373
		125			4.5		**5TE2813-0**		1	1 unit	029	0.721
	3 NO + N	40	400		4		**5TE2414-0**		1	1 unit	029	0.499
		63					**5TE2514-0**		1	1 unit	029	0.504
		125			6		**5TE2814-0**		1	1 unit	029	0.967

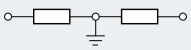
* You can order this quantity or a multiple thereof.

5TE DC isolators

Benefits

- Switch disconnectors for isolating solar modules in photovoltaic systems acc. to DIN VDE 0100-712
- Compact DIN rail device for applications up to 1000 V DC
- Separate switching position indication for unambiguous indication of the switching state
- Compatible with all miniature circuit breaker accessories - reduced stock-keeping
- The effective touch protection when grasping the device considerably exceeds the requirements of BGV A3
- Manual snap-on fixing and release systems that require no tools enable fast assembly and disassembly of switch disconnectors
- Clear and visible conductor connection that can be easily checked in front of the busbar

Technical specifications

			5TE2515-1
Standards			IEC/EN 60947-3, IEC/EN 60669-1
Rated operational current I_e		A	63
Rated operational voltage U_e	For 4 poles in series	V DC	880
Rated power dissipation P_v	Per pole, max.	W	4.4
Rated short-circuit strength I_{cw}	1000 V DC, 4-pole	A	760
Rated short-circuit making capacity I_{cm}	1000 V DC, 4-pole	A	500
Rated impulse withstand voltage U_{imp}		kV	> 4
Max. operational voltage U_{max}		V DC	1000
Overvoltage category			II at U = 880 V ... 440 V  I at U = 1000 V 
Mechanical service life		Switching cycles	10000
Electrical service life		Switching cycles	5000
Utilization category			DC-21B
Minimum contact load		V; mA	24; 300
Terminals Max. tightening torque	±screw (Pozidriv)	 Nm	PZ 2 2.5 ... 3
Conductor cross-sections	Rigid Flexible, with end sleeve	mm^2 mm^2	0.75 ... 35 0.75 ... 25
Permissible ambient temperature		°C	-25 ... +45
Resistance to climate At 95 % relative humidity	Acc. to DIN 50015	°C	45

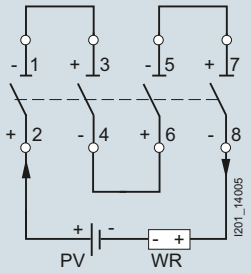
Selection and ordering data

	Version	I_e	U_e	Conductor cross-sections	Mounting width	DT	Article No.	Price per PU	PU (UNIT, SET, M)	PS*/ P. unit	PG	Weight per PU approx.
		A	V AC	up to mm^2	MW							kg
	**DC isolators** 1000 V DC, can be used as switch disconnectors according to EN 60947-3, with sealable switch position, separate handle locking device can be retrofitted, auxiliary switch can be retrofitted											
	4 NO	63	--	35	4		**5TE2515-1**		1	1 unit	029	0.672
	**Auxiliary switches (AS)** For 5TE2 DC isolators, for right-hand-side retrofitting with factory-fitted brackets, for further technical specifications, see chapter "Miniature Circuit Breakers"											
	1 NO + 1 NC				0.5	▶	**5ST3010**		1	1 unit	020	0.066
	2 NO				0.5		**5ST3011**		1	1 unit	020	0.055
	2 NC				0.5		**5ST3012**		1	1 unit	020	0.055
	Auxiliary switches for low power											
	1 NO + 1 NC				0.5	▶	**5ST3013**		1	1 unit	020	0.055
	2 NO				0.5		**5ST3014**		1	1 unit	020	0.054
	2 NC				0.5		**5ST3015**		1	1 unit	020	0.060

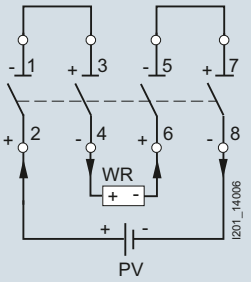
* You can order this quantity or a multiple thereof.

Configuration

For DC voltages up to 1000 V, the four poles need to be connected in series. In contrast to normal flush-mounting switches, these devices are also fitted with arcing chambers and permanent solenoids to aid the positive quenching of the electric arc in direct currents.



For this reason it is essential to comply with the polarity specifications of the switches when connecting the conductor. Suitable precautions should be taken during plant configuration to ensure there can be no polarity reversal in DC operation (e.g. photovoltaic systems).



Legend:
PV: Photovoltaic
WR: Inverter

8

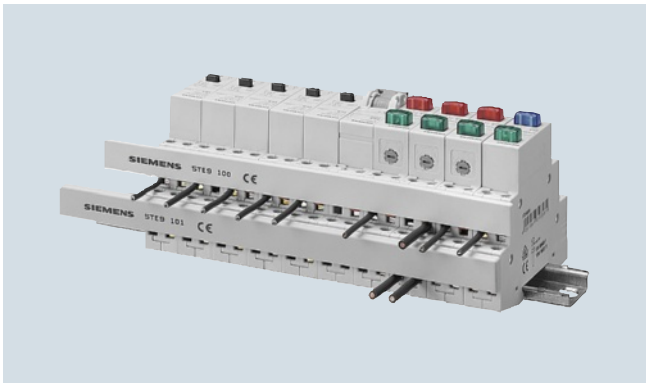
5ST busbars for modular installation devices

Overview

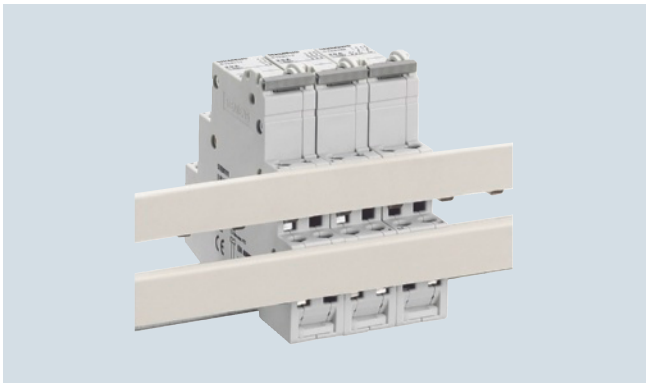
Siemens has developed a rail-mounting concept which makes the linking of switching devices just as easy as that of miniature circuit breakers.

The arrangement of the terminals on the devices is adapted to the bus mounting. With only two busbars, this saves considerable mounting time.

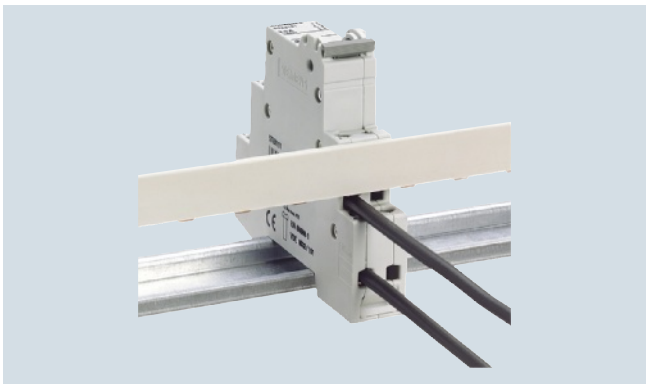
Benefits



- All 5TE8 switches (20 A and 32 A), 5TE48 pushbuttons, 5TE58 light indicators and 5TT41 remote control switches and 5TT42 switching relays can be bus-mounted

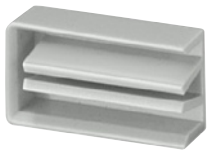
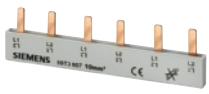


- All 5TE8 switches (20 A and 32 A) in 1 MW can be fed via the single or two-phase busbars. Thus 2 two-phase busbars support a 4-pole infeed



- Infeed: The phase busbar is fed in at the tunnel terminal for conductors up to 6 mm^2 up to 32 A. No additional feeder terminals required

Selection and ordering data

	Version	Length mm	DT	Article No.	Price per PU	PU (UNIT, SET, M)	PS*/ P. unit	PG	Weight per PU approx. kg
	**Single-phase busbars** For all 5TE8, 20 A and 32 A switches, In the 12 MW version for the cutting of unused terminal lugs to ensure insulation clearances if one device terminal is to be supplied separately despite being mounted on the bus, modular clearance = 1 MW Busbar infeed to unit terminal with conductor cross-section of 6 mm^2 up to 32 A Can be mounted top or bottom in the front or rear terminal area Note: An end cap is not required on single-phase busbars.	210		**5TE9100**		1	10 units	029	0.034
	**Two-phase busbars** For all 5TE8, 20 A and 32 A switches In 12 MW version with 1 MW division, whereby the two busbars are offset by 0.5 MW Both copper conductors of the two-phase busbar are insulated together Busbar infeed to unit terminal with conductor cross-section of 6 mm^2 up to 32 A Can be mounted from top or bottom, or in the front or rear terminal area, thus allowing realization of a 4-conductor connection using 2 two-phase busbars	220		**5TE9101**		1	10 units	029	0.076
	**End caps for two-phase busbars** End caps for 5TE9101 two-phase busbars to maintain insulation clearances when the bar is being cut. 1 set = 10 units			**5TE9102**		1	1 set	029	0.001
	**5ST36 and 5ST37 busbar systems** All busbars of the 5ST36 and 5ST37 busbar systems can also be used for all 5TE8 switches from 32 A to 125 A in 1 MW per pole versions (see chapter "Miniature Circuit Breakers").								

8

* You can order this quantity or a multiple thereof.

5TT4 remote control switches

Overview

Remote control switches are used in residential and non-residential buildings, as well as the switchgear engineering sector. They trip in the event of "current inrushes", i.e. pulses, and then electromechanically save the switching position, even in the event of a power failure.

All the devices have the VDE mark and can also be equipped with an additional auxiliary switch. All devices have a switching position indication and are operated manually. The switching noise is particularly quiet and meets the requirements of residential buildings.

Benefits

- Remote control switches with central/group switching support convenient and high feature applications
- High functional reliability due to electromechanical design without fault-prone electronics
- The devices have no standby losses
- All devices have a switching position indication and are operated manually
- The remote control switches can be bus-mounted on 5TE9100 and 5TE9101 busbars; e.g.: bus mounting of the N conductor and/or infeed.
- All the remote control switches can be fitted with an additional auxiliary switch

Central switching functions

Versions with central ON/OFF function allow the central switching of all connected remote control switches. This type of central switching can also be actuated using a time switch. All remote control switches can be switched to the ON or OFF switching state, regardless of their current switching state.

Contact sequences

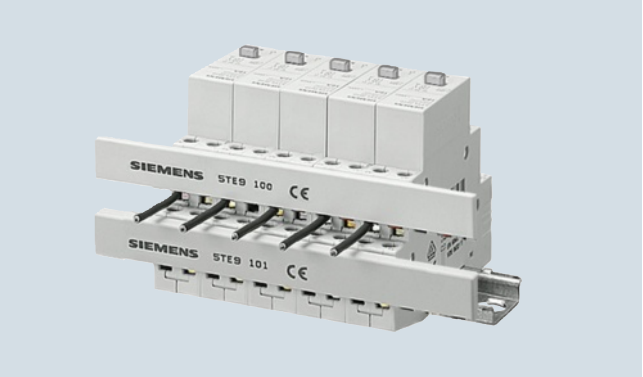
1 – 2 – 1+2 – 0 or **1 - 0 - 2 - 0** means:

0: No contact closed
1: Only contact 1 closed
2: Only contact 2 closed
1+2: Contact 1 and Contact 2 are closed

The contact positions are constantly changing with each pushbutton impulse.

Note:
Synchronous switching of the contacts cannot be guaranteed with parallel switching. Products with central/group switching must be used for the mutual control of several remote control switches.

Bus mounting



All 5TT41 remote control switches can be bus-mounted with each other.

Note:

Busbars to match the 5TT41 remote control switch can be found on page 8/22.

Technical specifications

			Remote control switches				Auxiliary switches	
			5TT4101 5TT4102 5TT4105 5TT4111 5TT4112 5TT4115	5TT4103 5TT4104	5TT4412 5TT415	5TT4413 5TT414	5TT4900	5TT4901
Standards			IEC 60669-1, IEC 60669-2, IEC 60669-3, EN 60669 (VDE 0632), EN 60669-2-2, EN 60669-2-2/A1					
Approvals			VDE 0632					
Contact type			1 NO 2 NO 1 NO 1 NC	3 NO 4 NO	1 NO 2 NO 3 NO 1 NO 1 NC	Series Shutter/ blind	1 CO	1 CO
Manual operation			Yes				--	
Switching position indication			Yes			--		
Rated control voltage U_c		V AC V DC	8 ... 230 12 ... 110				-- --	
Primary operating range		× U_c	0.8 ... 1.1				--	
Rated frequency f_c (AC types)		Hz	50				--	
Rated impulse withstand voltage U_{imp}		kV	4				1	
Rated power dissipation P_v								
• Magnet coil, only pulse		W/VA	4.5/7	9/13	4.5/7		--	
• Per contact at 16 A		W	1.2				--	
Minimum contact load		V AC; mA	10; 100					5 AC/DC; 1
Rated operational current I_e at p.f. = 0.6 ... 1		A	16				5	0.1
Rated operational voltage U_e								
• 1 NO		V AC	250	--	250	--	250	30 AC/DC
• 2 NO		V AC	400	--	400	250	--	
• 3 NO		V AC	--	400	400	--	--	
• 4 NO		V AC	--	400	--	--	--	
• 1 NO + 1 NC		V AC	250	--	250	--	--	
Glow lamp load at 230 V		mA	5				--	
• With 1 5TT4920 compensator		mA	25				--	
• With 2 5TT4920 compensators		mA	45				--	
Incandescent lamp load[2]		W	1200				--	
Different phases between magnet coil/contact			Permissible				--	
Contact gap		mm	> 1.2				< 1.2	
Safe separation Creepage distances and clearances between magnet coil/contact		mm	> 6					
Pushbutton malfunction Protected against continuous voltage, safe due to design			Yes	PTC	Yes[1]	Yes	--	
Minimum pulse duration		ms	50					
Electrical service life At I_e/U_e, p.f. = 0.6; incandescent lamp load 600 W		In switching cycles	50000					
Terminals ±screw (Pozidriv)			1					
Conductor cross-sections								
• Rigid		mm^2	1.5 ... 6				0.5 ... 4	
• Flexible, with end sleeve		mm^2	1 ... 6				0.75 ... 4	
Resistance to climate At 95 % relative humidity	Acc. to DIN 50015	°C	35					
Permissible ambient temperature		°C	-10 ... +40					
Degree of protection	Acc. to EN 60529		IP20, with connected conductors					
Mounting position			Any					

1) For 2.5 MW 5TT4123-0 devices with PTC.

2) For 15 000 switching cycles.

5TT4 remote control switches

Selection and ordering data

	Contacts	U_e	I_e	U_c	U_c	Mounting width	DT	Article No.	Price per PU	PU (UNIT, SET, M)	PS*/ P. unit	PG	Weight per PU approx.
		V AC	A AC	V AC	V DC	MW							kg
	**Remote control switches, auxiliary switches can be retrofitted**												
	1 NO	250	16	230		1	▶	**5TT4101-0**		1	1/12 units	028	0.135
				115				**5TT4101-1**		1	1 unit	028	0.138
				24			▶	**5TT4101-2**		1	1 unit	028	0.134
				12				**5TT4101-3**		1	1 unit	028	0.133
				8				**5TT4101-4**		1	1 unit	028	0.128
	2 NO	400	16	230		1	▶	**5TT4102-0**		1	1 unit	028	0.144
				115				**5TT4102-1**		1	1 unit	028	0.150
				24			▶	**5TT4102-2**		1	1 unit	028	0.144
				12				**5TT4102-3**		1	1 unit	028	0.145
				8				**5TT4102-4**		1	1 unit	028	0.141
	3 NO		16	230		2	▶	**5TT4103-0**		1	1 unit	028	0.199
				24			▶	**5TT4103-2**		1	1 unit	028	0.198
	4 NO		16	230		2	▶	**5TT4104-0**		1	1 unit	028	0.211
				24			▶	**5TT4104-2**		1	1 unit	028	0.210
	1 NO + 1 NC	250	16	230		1	▶	**5TT4105-0**		1	1 unit	028	0.144
				115				**5TT4105-1**		1	1 unit	028	0.151
				24			▶	**5TT4105-2**		1	1 unit	028	0.144
				12				**5TT4105-3**		1	1 unit	028	0.145
				8				**5TT4105-4**		1	1 unit	028	0.140
	**Remote control switches DC applications**												
	1 NO		16		110	1	▶	**5TT4111-1**		1	1 unit	028	0.126
					24		▶	**5TT4111-2**		1	1 unit	028	0.126
					12		▶	**5TT4111-3**		1	1 unit	028	0.126
	2 NO		16		110	1	▶	**5TT4112-1**		1	1 unit	028	0.130
					24		▶	**5TT4112-2**		1	1 unit	028	0.130
					12		▶	**5TT4112-3**		1	1 unit	028	0.130
	1 NO + 1 NC	250	16		110	1	▶	**5TT4115-1**		1	1 unit	028	0.144
					24		▶	**5TT4115-2**		1	1 unit	028	0.147
					12		▶	**5TT4115-3**		1	1 unit	028	0.144
	**Remote control switches with central ON/OFF switching, auxiliary switch cannot be retrofitted**												
	1 NO	250	16	230		1.5	▶	**5TT4121-0**		1	1 unit	028	0.155
				24			▶	**5TT4121-2**		1	1 unit	028	0.165
	2 NO	400	16	230		1.5	▶	**5TT4122-0**		1	1 unit	028	0.163
				24			▶	**5TT4122-2**		1	1 unit	028	0.175
	3 NO	400	16	230		2.5	▶	**5TT4123-0**		1	1 unit	028	0.227
	1 NO + 1 NC	250	16	230		1.5	▶	**5TT4125-0**		1	1 unit	028	0.163
	**Remote control switches, with central and group ON/OFF switching, auxiliary switch cannot be retrofitted**												
	1 NO	250	16	230		1.5	▶	**5TT4151-0**		1	1 unit	028	0.145
				24		1.5	▶	**5TT4151-2**		1	1 unit	028	0.144
	2 NO	400	16	230		1.5	▶	**5TT4152-0**		1	1 unit	028	0.156
				24		1.5	▶	**5TT4152-2**		1	1 unit	028	0.155
	**Series remote control switches Contact sequence 1 - 2 - 1+2 - 0 auxiliary switch cannot be retrofitted**												
	2 NO	250	16	230		1	▶	**5TT4132-0**		1	1 unit	028	0.143
				12			▶	**5TT4132-3**		1	1 unit	028	0.130
	**Blinds remote control switches Contact sequence 1 - 0 - 2 - 0 auxiliary switch cannot be retrofitted**												
	2 NO	250	16	230		1	▶	**5TT4142-0**		1	1 unit	028	0.144
				24				**5TT4142-2**		1	1 unit	028	0.145
				12				**5TT4142-3**		1	1 unit	028	0.143

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* You can order this quantity or a multiple thereof.

	Contacts	U_e	I_e	Mounting width	DT	Article No.	Price per PU	PU (UNIT, SET, M)	PS*/ P. unit	PG	Weight per PU approx.
		V AC	A AC	MW							kg
	**Auxiliary switches** **One device can be retrofitted per remote control switch**										
	1 CO	250	5	0.5	►	**5TT4900**		1	1 unit	028	0.049
	1 CO For small powers	30 AC/DC	0.1	0.5	►	**5TT4901**		1	1 unit	028	0.050
	**Compensators** **for increasing the glow lamp load by 20 mA**										
		250	--	1	►	**5TT4920**		1	1 unit	028	0.073

8

* You can order this quantity or a multiple thereof.

5TT4 switching relays

Overview

Switching relays are used in residential, non-residential and industrial buildings for the purpose of contact multiplication. They can be used with safe isolation between coil voltage and contact.

With the 5TE9100 and 5TE9101 busbars, the switching relays can be mounted quickly and safely, e.g. by bus mounting the N conductor and/or infeed.

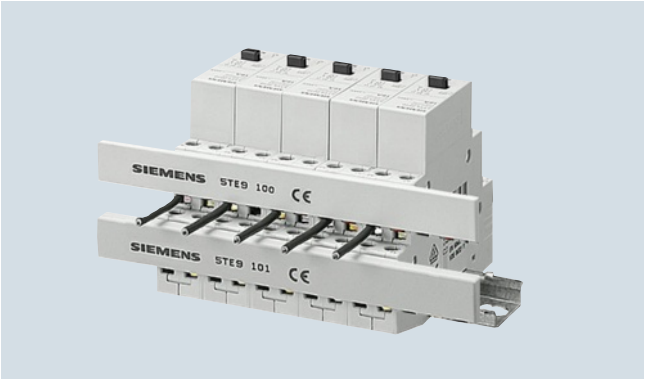
Note:

Busbars to match the 5TT42 switching relays can be found on page 8/22.

Benefits

- Easy installation due to busbar mounting
- Switching position indication when checking the plant for enhanced safety
- Manual intervention through manual operation

Bus mounting



All 5TT42 switching relays can be bus-mounted with each other.

Technical specifications

			5TT4201-.	5TT4202-.	5TT4204-.	5TT4205-.	5TT4206-.	5TT4207-.	5TT4217-.
Standards			EN 60947-5-1, EN 60669-2-2						
Contact type			1 NO	2 NO	4 NO	1 NO + 1 NC	1 CO	2 CO	2 CO
Manual operation			Yes						
Rated control voltage U_c		V AC V DC	8 ... 230 --						-- 12 ... 110
Primary operating range		× U_c	0.8 ... 1.1						
Rated frequency f_c		Hz	50						
Rated impulse withstand voltage U_{imp}		kV	4						
Rated power dissipation P_v • Magnet coil • Per contact at 16 A		W/VA W	2.4/3.0 1.0	2.4/3.0	4.8/6.0	2.4/3.0	2.4/3.0	2.4/3.0	1.7
Minimum contact load		V AC; mA	10; 100						
Rated operational current I_e At p.f. = 0.6 ... 1		A	16						
Rated operational voltage U_e			250	400	400	400	250	400	400
Different phases Between magnet coil/contact			Permissible						
Contact gap		mm	> 1.2				< 1.2		
Safe separation		mm	> 6						
Electrical service life At I_e/U_e, p.f. = 0.6; incandescent lamp load 600 W		Switching cycles	50000						
Terminals	±screw (Pozidriv)		1						
Conductor cross-sections • Rigid • Flexible, with end sleeve		mm^2 mm^2	1.5 ... 6 1 ... 6						
Resistance to climate At 95 % relative humidity	Acc. to DIN 50015	°C	35						
Permissible ambient temperature		°C	-10 ... +40						
Degree of protection	Acc. to EN 60529		IP20, with connected conductors						
Mounting position			Any						

Selection and ordering data

	Contacts	U_e	I_e	U_c	U_c	Mounting width	DT	Article No.	Price per PU	PU (UNIT, SET, M)	PS*/ P. unit	PG	Weight per PU approx.
		V AC	A AC	V AC	V DC	MW							kg
	**Switching relays for AC voltage**												
	1 NO	250	16	230		1	▶	**5TT4201-0**		1	1/12 units	028	0.130
				115				**5TT4201-1**		1	1 unit	028	0.138
				24			▶	**5TT4201-2**		1	1 unit	028	0.132
				12			▶	**5TT4201-3**		1	1 unit	028	0.131
				8			▶	**5TT4201-4**		1	1 unit	028	0.129
	2 NO	400	16	230		1	▶	**5TT4202-0**		1	1 unit	028	0.143
				115				**5TT4202-1**		1	1 unit	028	0.147
				24			▶	**5TT4202-2**		1	1 unit	028	0.142
				12				**5TT4202-3**		1	1 unit	028	0.142
				8				**5TT4202-4**		1	1 unit	028	0.139
	4 NO	400	16	230		2	▶	**5TT4204-0**		1	1 unit	028	0.266
				115				**5TT4204-1**		1	1 unit	028	0.276
				24			▶	**5TT4204-2**		1	1 unit	028	0.278
				12				**5TT4204-3**		1	1 unit	028	0.262
				8				**5TT4204-4**		1	1 unit	028	0.261
	1 NO + 1 NC	400	16	230		1	▶	**5TT4205-0**		1	1 unit	028	0.142
				115				**5TT4205-1**		1	1 unit	028	0.147
				24			▶	**5TT4205-2**		1	1 unit	028	0.144
				12				**5TT4205-3**		1	1 unit	028	0.142
				8				**5TT4205-4**		1	1 unit	028	0.139
	1 CO	250	16	230		1	▶	**5TT4206-0**		1	1 unit	028	0.135
				115				**5TT4206-1**		1	1 unit	028	0.140
				24			▶	**5TT4206-2**		1	1 unit	028	0.137
				12				**5TT4206-3**		1	1 unit	028	0.136
				8				**5TT4206-4**		1	1 unit	028	0.137
	2 CO	400	16	230		1	▶	**5TT4207-0**		1	1 unit	028	0.149
				115				**5TT4207-1**		1	1 unit	028	0.153
				24			▶	**5TT4207-2**		1	1 unit	028	0.150
				12				**5TT4207-3**		1	1 unit	028	0.145
				8				**5TT4207-4**		1	1 unit	028	0.147
	**Switching relays for direct voltage**												
	2 CO	400	16		110	1	▶	**5TT4217-1**		1	1 unit	028	0.150
					30		▶	**5TT4217-6**		1	1 unit	028	0.135
					24		▶	**5TT4217-2**		1	1 unit	028	0.152
					12		▶	**5TT4217-3**		1	1 unit	028	0.145
	**Spacers**												
	In the case of higher ambient temperatures, we recommend placing a spacer after every second switching relay for better heat dissipation.					0.5		**5TG8240**		1	2 units	026	0.010

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* You can order this quantity or a multiple thereof.

5TT Insta contactors, AC/DC technology

Overview

The Insta contactors are the ideal switching device for controlling AC/DC control voltage in industrial applications and infrastructure.

In addition to their basic function, they can also be used for the ON/OFF switching of single-phase and three-phase electrical motors. The 5TT50 Insta contactors meet the requirements of EN 60947 and are approved to UL 508.

The simultaneous switching of lamp loads at varying phases can be achieved with a single contactor, whereby it is essential to strive for/ensure a symmetrical load of the phases. Upstream short-circuit detection devices must disconnect at all poles or must be equipped with phase failure detection. Violations of the specified capacitor load limits may cause excessive inrush peak currents. The level of inrush peak currents is also affected by the following factors:

- Length and cross-section of the installed supply lines
- Type of electronic ballasts
- Brand/make of lamp

Benefits

- Insta contactors with O/I automatic function enable the testing of a plant via manual switch without the need to apply a control voltage

- Switching position indication for fast recognition of operating states offers greater safety when checking the plant

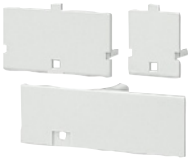
Technical specifications

			5TT500 2-pole	5TT503 4-pole	5TT504 4-pole	5TT505 4-pole
Standards			EN 60947-4-1; EN 60947-5-1; EN 61095			
Approvals			UL 508; UL File No. E303328;			
Rated frequency at AC f_n		Hz	50/60			
Rated control voltage U_c		V AC	24, 230	24, 115, 230	24, 230	
		V DC	24, 220	24, 110, 220	24, 230	
Primary operating range		× U_c	0.85 ... 1.1			
Rated operational voltage U_e		V	230	400		
Rated operational current I_e		At V AC	Acc. to UL 480; acc. to IEC 440			
• AC-1/AC-7a, NO contacts		A	20	25	40	63
• AC-1/AC-7a, NC contacts		A	20	25	40	63
• AC-3/AC-7b, NO contacts		A	9	8.5	22	30
• AC-3/AC-7b, NC contacts		A	6	8.5	22	30
Rated power dissipation P_v						
• Pick-up power (without manual switch or manual switch in "I" position)		VA/W	2.1/2.1	2.6/2.6	5/5	5/5
• Pick-up power (with manual switch in "AUTO" position)		VA/W	2.1/4.1	2.6/2.6	5/5	5/5
• Holding power		VA/W	2.1/2.1	2.6/2.6	5/5	5/5
• Per contact AC-1/AC-7a		VA	1.7	2.2	4	8
Switching times						
• Closing (NO contacts)		ms	15 - 45	15 - 45	15 - 20	
• Opening (NO contacts)		ms	20 - 50	20 - 70	35 - 45	
Rated impulse withstand voltage U_{imp}		kV	≤ 4			
Contact gap (S contacts) min.		mm	3.6			
Electrical service life						
At I_e and load	AC-1/AC-7a	For switching cycles	200000		100000	
	AC-3/AC-7b	For switching cycles	300000	500000		150000
Mechanical service life		For switching cycles	3 million			
Maximum switching frequency						
At load	AC-1/AC-7a	Switching cycles/h	600			
	AC-3/AC-7b	Switching cycles/h	600			
Switching of resistive loads AC-1		V AC	230	400		
For rated operational power P_s (NO contacts)						
• Single-phase		kW	4	5.4	8.7	13.3
• Three-phase		kW	--	16	26	40
Switching of three-phase asynchronous motors AC-3		V AC	230	400		
For rated operational power P_s (NO contacts)						
• Single-phase		kW	1.3/0.75	1.3/1.3	3.7/3.7	5/5
• Three-phase		kW	--	4	11	15
Minimum switching capacity		V; mA	≥ 17; 50			
Overload withstand capability						
Per conducting path (NO contacts only)	at 10 s	A	72	68	176	240
Short-circuit protection, according to coordination type 1						
Back-up fuse characteristic gL/gG		A	20	25	63	80
Terminals	±screw (Pozidriv)					
• Coil connection			1	1		
• Main connection			1	2		
Tightening torques						
• Coil connection		Nm	0.6	0.6		
• Main connection		Nm	1.2	3.5		
Conductor cross-sections						
• Coil connection						
- Solid		mm^2	1.0 ... 2.5			
- Stranded, with end sleeve		mm^2	1.0 ... 2.5			
- AWG cables		AWG	16 ... 10			
Tightening torque		lb.in	8			
• Main connection						
- Solid		mm^2	1.0 ... 10	1.5 ... 25		
- Stranded, with end sleeve		mm^2	1.0 ... 6	1.5 ... 16		
- AWG cables		AWG	16 ... 8	16 ... 4		
Tightening torque		lb.in	9	20		
Permissible ambient temperature						
• For operation		°C	-15 ... +55[1)]			
• For storage		°C	-50 ... +80			
Degree of protection	Acc. to EN 60529		IP 20, with connected conductors			
Acc. to UL 508	I_n	A	20	25	40	63
UL 508 General Use 240 V/480 V	FLA	A	20	25	40	63
UL 508 AC discharge lamps		A	20	25	30	40
UL 508 motor load 240 V	Power	hp	1	3	7.5	10
UL 508 motor load 480 V	Power	hp	--	5	15	20
UL 508 short-circuit at 480 V	K5 fuses	A	20	25	60	70
		kA	5			

[1)] Contactors can be operated at ambient temperatures of between -25 °C and +70 °C, but only under special conditions. For more information, please contact Siemens Support.

5TT Insta contactors, AC/DC technology

Selection and ordering data

	Contacts	U_e	I_e	U_c		Mounting width	DT	Article No.	Price per PU	PU (UNIT, SET, M)	PS*/ P. unit	PG	Weight per PU approx.
		V AC	A AC	V AC	V DC	MW							kg
 5TT5000-0	**Insta contactors** For AC or DC continuous operation, with switching position indication, with DC magnetic system												
	2 NO	230	20	230	220	1		**5TT5000-0**		1	1 unit	028	0.141
				24	24			**5TT5000-2**		1	1 unit	028	0.141
	1 NO + 1 NC	230	20	230	220	1		**5TT5001-0**		1	1 unit	028	0.150
				24	24			**5TT5001-2**		1	1 unit	028	0.150
	2 NC	230	20	230	220	1		**5TT5002-0**		1	1 unit	028	0.150
				24	24			**5TT5002-2**		1	1 unit	028	0.150
	4 NO	400	25	230	220	2		**5TT5030-0**		1	1 unit	028	0.150
				115	110			**5TT5030-1**		1	1 unit	028	0.150
				24	24			**5TT5030-2**		1	1 unit	028	0.150
	3 NO + 1 NC	400	25	230	220	2		**5TT5031-0**		1	1 unit	028	0.150
				24	24			**5TT5031-2**		1	1 unit	028	0.150
	2 NO + 2 NC	400	25	230	220	2		**5TT5032-0**		1	1 unit	028	0.150
				24	24			**5TT5032-2**		1	1 unit	028	0.150
	4 NC	400	25	230	220	2		**5TT5033-0**		1	1 unit	028	0.150
				24	24			**5TT5033-2**		1	1 unit	028	0.150
	4 NO	400	40	230	220	3		**5TT5040-0**		1	1 unit	028	0.150
				24	24			**5TT5040-2**		1	1 unit	028	0.150
	3 NO + 1 NC	400	40	230	220	3		**5TT5041-0**		1	1 unit	028	0.150
				24	24			**5TT5041-2**		1	1 unit	028	0.150
	2 NO + 2 NC	400	40	230	220	3		**5TT5042-0**		1	1 unit	028	0.150
				24	24			**5TT5042-2**		1	1 unit	028	0.150
	4 NC	400	40	230	220	3		**5TT5043-0**		1	1 unit	028	0.150
				24	24			**5TT5043-2**		1	1 unit	028	0.150
	4 NO	400	63	230	220	3		**5TT5050-0**		1	1 unit	028	0.150
				24	24			**5TT5050-2**		1	1 unit	028	0.150
	3 NO + 1 NC	400	63	230	220	3		**5TT5051-0**		1	1 unit	028	0.150
				24	24			**5TT5051-2**		1	1 unit	028	0.150
	2 NO + 2 NC	400	63	230	220	3		**5TT5052-0**		1	1 unit	028	0.150
				24	24			**5TT5052-2**		1	1 unit	028	0.150
 5TT5000-6	**Automatic Insta contactor** For AC or DC continuous operation, with switching position indication, with DC magnetic system												
	2 NO	230	20	230	220	1		**5TT5000-6**		1	1 unit	028	0.150
				24	24			**5TT5000-8**		1	1 unit	028	0.150
	1 NO + 1 NC	230	20	230	220	1		**5TT5001-6**		1	1 unit	028	0.150
				24	24			**5TT5001-8**		1	1 unit	028	0.150
	4 NO	400	25	230	220	2		**5TT5030-6**		1	1 unit	028	0.150
				24	24			**5TT5030-8**		1	1 unit	028	0.150
	3 NO + 1 NC	400	25	230	220	2		**5TT5031-6**		1	1 unit	028	0.150
				24	24			**5TT5031-8**		1	1 unit	028	0.150
 5TT5910-0	**Auxiliary switches** For mounting on right-hand side Max. one auxiliary switch per Insta contactor												
	2 NO	230, AC-15	6	--	--	0.5	▶	**5TT5910-0**		1	1 unit	028	0.045
	1 NO + 1 NC	230, AC-15	6	--	--		▶	**5TT5910-1**		1	1 unit	028	0.046
	**Sealable terminal covers**												
	For Insta contactor 20 A					1		**5TT5910-5**		1	2 units	028	0.002
	For Insta contactor 25 A					2		**5TT5910-6**		1	2 units	028	0.003
	For Insta contactors 40 A and 63 A					3		**5TT5910-7**		1	2 units	028	0.003

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* You can order this quantity or a multiple thereof.

Overview

The 5TT58 Insta contactors are equipped with an AC magnetic system and are ideal for use under harsh conditions. The auxiliary switches can be mounted without tools. When equipped with terminal covers, the devices can also be sealed.

Insta contactors without manual switch

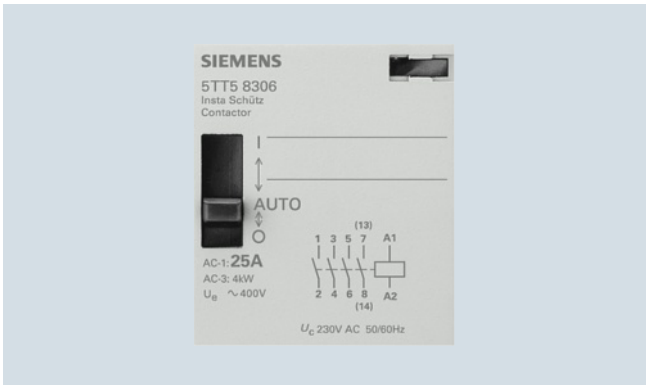
Insta contactors are ideal for a wide range of uses in industry, such as for motors where distribution technology plays a major role, e.g. in installations for heat pumps and air conditioning technology. In addition to their basic function, they can also be used for the ON/OFF switching of single-phase and three-phase electrical motors.

Insta contactors with manual switch

Insta contactors with manual operation can be switched on and off by hand.

Benefits

- Extremely long service life of 3 million switching cycles
- Safe cable routing through the cable entry funnel
- Insulated right through to the cable entry funnel
- Auxiliary switches can be retrofitted on all versions - even on the 20 A type



- Insta contactors with O/I/Automatic function enable the testing of a plant by manual switch without the need to apply a control voltage
- Switching position indication for fast recognition of operating states offers greater safety when checking the plant

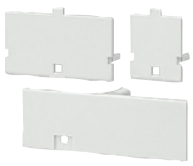
5TT5 Insta contactors, AC technology

Technical specifications

			Insta contactors				Auxiliary switches
			5TT580.	5TT582., 5TT583.	5TT584.	5TT585.	5TT5910
Standards			IEC 60947-4-1, IEC 60947-5-1, IEC 61095; EN 60947-4-1, EN 60947-5-1, EN 61095				
Approvals			VDE 0637				
Number of poles			2	4	4	4	2
Rated frequency at AC		Hz	50/60				
Rated control voltage U_c		V AC	24, 230	24, 115, 230	24, 230	24, 230	--
Primary operating range		$\times U_c$	0.85 ... 1.1				--
Rated operational voltage U_e		V AC	230	400			230/400
Rated operational current I_e		A	20	25	40	63	6/4 (230/400 V)
Rated power dissipation P_v							
• Pick-up power (without manual switch or manual switch in "I" position)		VA/W	6/3.8	10/5	15.4/6		--
• Pick-up power (with manual switch in "AUTO" position)		VA/W	12/10	33/25	62/50		--
• Holding power		VA/W	2.8/1.2	5.5/1.6	7.7/3		--
• Per contact		VA	1.7	2.2	4	8	--
Switching times							
• Closing (NO contacts)		ms	15 ... 25	10 ... 20	15 ... 20		--
• Opening (NO contacts)		ms	20	20	10		--
• Closing (NC contacts)		ms	20 ... 30	20 ... 30	5 ... 10		--
• Opening (NC contacts)		ms	10	10	10 ... 15		--
Rated impulse withstand voltage U_{imp}		kV	4				
Rated insulation voltage U_i		V	440		500		
Contact gap, minimum		mm	3.6		3.4		4
Electrical service life							
At I_e and load							
• AC-1/AC-7a		For switching cycles	200000		100000		--
• AC-3/AC-7b			300000	500000	150000		--
Mechanical service life		For switching cycles	3 million				
Maximum switching frequency							
At load		In switching cycles/h	600				
Switching of resistive loads AC-1/AC-7a							
For rated operational power P_s							
• Single-phase 230 V		kW	4	5.4	8.7	13.3	--
• Three-phase 400 V		kW	--	16	26	40	--
Switching of three-phase asynchronous motors AC-3/AC-7b							
For rated operational power P_s							
• Single-phase 230 V		kW	1.3[1)]	1.3	3.7	5	--
• Three-phase 400 V		kW	--	4	11	15	--
Minimum switching capacity		V; mA	17; 50				12; 5
Overload withstand capability							
Per conducting path (NO contacts only)	at 10 s	A	72	68	176	240	--
Short-circuit protection, according to coordination type 1							
Back-up fuse characteristic gL/gG		A	20	25	63	80	6
Terminals	±screw (Pozidriv)						
• Coil connection			1		1.2		--
• Main connection			1		3.5		1
Tightening torques							
• Coil connection		Nm	0.6				--
• Main connection		Nm	1.2		2		0.8
Conductor cross-sections							
• Coil connection	Rigid	mm^2	1.0 ... 2.5				--
	Flexible, with end sleeve	mm^2	1.0 ... 2.5				--
• Main connection	Rigid	mm^2	1.0 ... 10		1 ... 25		1 ... 2.5
	Flexible, with end sleeve	mm^2	1.0 ... 6		1 ... 16		1 ... 2.5
Permissible ambient temperature							
• For operation		°C	-5 ... +55				
• For storage		°C	-30 ... +80				
Degree of protection	Acc. to EN 60529		IP20, with connected conductors				

[1)] For NO contacts only.

Selection and ordering data

	Version	U_e	I_e	U_c	Mounting width	DT	Article No.	Price per PU	PU (UNIT, SET, M)	PS*/ P. unit	PG	Weight per PU approx.
		V AC	A AC	V AC	MW							kg
	Insta contactors without manual switch											
	For alternating current continuous operation, with switching position indication, with AC magnetic system											
 5TT5800-0	2 NO	230	20	230	1	▶	**5TT5800-0**		1	1 unit	028	0.137
				24		▶	**5TT5800-2**		1	1 unit	028	0.141
	1 NO + 1 NC	230	20	230		▶	**5TT5801-0**		1	1 unit	028	0.141
				24		▶	**5TT5801-2**		1	1 unit	028	0.142
	2 NC	230	20	230		▶	**5TT5802-0**		1	1 unit	028	0.143
				24		▶	**5TT5802-2**		1	1 unit	028	0.141
 5TT5830-0	4 NO	400	25	230	2	▶	**5TT5830-0**		1	1 unit	028	0.254
				115			**5TT5830-1**		1	1 unit	028	0.274
				24		▶	**5TT5830-2**		1	1 unit	028	0.272
	3 NO + 1 NC	400	25	230		▶	**5TT5831-0**		1	1 unit	028	0.260
				115			**5TT5831-1**		1	1 unit	028	0.274
				24			**5TT5831-2**		1	1 unit	028	0.272
	4 NO For high capacitive loads up to 150 µF	400	25	230	2		**5TT5820-0**		1	1 unit	028	0.230
	2 NO + 2 NC	400	25	230		▶	**5TT5832-0**		1	1 unit	028	0.260
				24		▶	**5TT5832-2**		1	1 unit	028	0.273
	4 NC	400	25	230		▶	**5TT5833-0**		1	1 unit	028	0.258
				24			**5TT5833-2**		1	1 unit	028	0.271
 5TT5840-0	4 NO	400	40	230	3	▶	**5TT5840-0**		1	1 unit	028	0.393
				24		▶	**5TT5840-2**		1	1 unit	028	0.389
	3 NO + 1 NC	400	40	230			**5TT5841-0**		1	1 unit	028	0.387
				24			**5TT5841-2**		1	1 unit	028	0.398
	2 NO + 2 NC	400	40	230			**5TT5842-0**		1	1 unit	028	0.398
				24			**5TT5842-2**		1	1 unit	028	0.388
	4 NC	400	40	230		▶	**5TT5843-0**		1	1 unit	028	0.396
				24			**5TT5843-2**		1	1 unit	028	0.396
	4 NO	400	63	230	3	▶	**5TT5850-0**		1	1 unit	028	0.390
				24		▶	**5TT5850-2**		1	1 unit	028	0.397
	3 NO + 1 NC	400	63	230		▶	**5TT5851-0**		1	1 unit	028	0.391
				24			**5TT5851-2**		1	1 unit	028	0.391
	2 NO + 2 NC	400	63	230			**5TT5852-0**		1	1 unit	028	0.400
				24			**5TT5852-2**		1	1 unit	028	0.388
	4 NC	400	63	230		▶	**5TT5853-0**		1	1 unit	028	0.403
				24			**5TT5853-2**		1	1 unit	028	0.396
	Auxiliary switches											
	For mounting on right-hand side Max. one auxiliary switch per Insta contactor											
 5TT5910-0	2 NO	230, AC-15	6	--	0.5	▶	**5TT5910-0**		1	1 unit	028	0.045
	1 NO + 1 NC	230, AC-15	6	--		▶	**5TT5910-1**		1	1 unit	028	0.046
	Sealable terminal covers											
	For Insta contactor 20 A				1		**5TT5910-5**		1	2 units	028	0.002
	For Insta contactor 25 A				2		**5TT5910-6**		1	2 units	028	0.003
	For Insta contactors 40 A and 63 A				3		**5TT5910-7**		1	2 units	028	0.003

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* You can order this quantity or a multiple thereof.

5TT5 Insta contactors, AC technology

	Version	U_e	I_e	U_c	Mounting width	DT	Article No.	Price per PU	PU (UNIT, SET, M)	PS*/ P. unit	PG	Weight per PU approx.
		V AC	A AC	V AC	MW							kg
	Insta contactors with manual switch 0/I/Automatic											
	For alternating current continuous operation, with switching position indication, with AC magnetic system											
5TT5800-6	2 NO	230	20	230	1	▶	**5TT5800-6**		1	1 unit	028	0.141
				24		▶	**5TT5800-8**		1	1 unit	028	0.143
	1 NO + 1 NC	230	20	230			**5TT5801-6**		1	1 unit	028	0.143
				24			**5TT5801-8**		1	1 unit	028	0.148
5TT5830-6	4 NO	400	25	230	2	▶	**5TT5830-6**		1	1 unit	028	0.261
				24		▶	**5TT5830-8**		1	1 unit	028	0.261
	3 NO + 1 NC	400	25	230		▶	**5TT5831-6**		1	1 unit	028	0.261
				24			**5TT5831-8**		1	1 unit	028	0.263
5TT5840-6	4 NO	400	40	230	3	▶	**5TT5840-6**		1	1 unit	028	0.399
				24		▶	**5TT5840-8**		1	1 unit	028	0.402
	3 NO + 1 NC	400	40	230			**5TT5841-6**		1	1 unit	028	0.399
				24			**5TT5841-8**		1	1 unit	028	0.406
	4 NO	400	63	230		▶	**5TT5850-6**		1	1 unit	028	0.394
	Auxiliary switches											
	For mounting on right-hand side Max. one auxiliary switch per Insta contactor											
	2 NO	230, AC-15	6	--	0.5	▶	**5TT5910-0**		1	1 unit	028	0.045
	1 NO + 1 NC	230, AC-15	6	--		▶	**5TT5910-1**		1	1 unit	028	0.046
	Sealable terminal covers											
	For Insta contactor 20 A				1		**5TT5910-5**		1	2 units	028	0.002
	For Insta contactor 25 A				2		**5TT5910-6**		1	2 units	028	0.003
	For Insta contactors 40 A and 63 A				3		**5TT5910-7**		1	2 units	028	0.003

* You can order this quantity or a multiple thereof.

Overview

The soft-starting device is an electronic control unit for the soft startup of single-phase asynchronous machines. A phase control causes the current to rise steadily. This also increases the motor torque and the drive starts up smoothly. The starting current is minimized. There is no speed adjustment. There is no marked soft start behavior without a mechanically connected load.
If the power semiconductor is to be protected against short-circuits or ground faults during startup, a quick-acting fuse must be installed. In the case of high switching frequencies, we recommend installing a thermistor motor protection for monitoring the permissible motor temperature.

The soft-starting device must not be operated with capacitive load. It can be retrofitted in existing plants at any time.

Benefits

- On completion of startup, the power semiconductors are bridged, which prevents overheating in the case of frequent starting and inhibits premature wear and tear
- Separate setting of ramp-up time and starting torque enables optimum adaptation to the mechanical system
- The LEDs for startup and continuous operation provide constant information on the operating state

Technical specifications

			5TT3440	5TT3441
Standards			EN 60947-4-2 (VDE 0660-117)	
Supply/motor voltage		V AC	400	230
Primary operating range		$\times U_c$	0.8 ... 1.1	
Rated power		VA	3.5	1.4
Rated frequency		Hz	50/60	
Rated power dissipation P_v	Coil/drive Contact[1] per pole		3.5 4.6	1.7 0.7
Rated output of motor - Max. - Min.	 At 400 V At 400 V	 VA VA	 5500 300	 1500 100
Startup voltage		%	30 ... 70	20 ... 70
Starting ramp		s	0.1 ... 10	
Recovery time		ms	100	200
Switching frequency $3 \times I_N$, T_{AN} = 10 s, ν_u = 20 % $3 \times I_N$, T_{AN} = 10 s, ν_u = 20 %		 Switching cycles/h Switching cycles/h	 36 (up to 3 kW) 20 (from 3...5.5 kW)	 10 10
Semiconductor fuse	Quick-acting	A	35	20
Conductor cross-sections	Rigid Flexible, with end sleeve	Max. mm^2 Min. mm^2	2 × 2.5 1 × 0.5	
Permissible ambient temperature		°C	-20 ... +60	-20 ... +55
Resistance to climate	Acc. to EN 60068-1		20/60/4	20/55/4

[1] For rated operational current.

Selection and ordering data

	Version	U_e	P_c	Mounting width	DT	Article No.	Price per PU	PU (UNIT, SET, M)	PS*/ P. unit	PG	Weight per PU approx.
		V AC	W	MW							kg
	**Soft-starting devices**										
	Single-phase	230	100 ... 1500	2		**5TT3441**		1	1 unit	027	0.160
	**Soft-starting devices, mounting depth 55 mm**										
	Three-phase, two-phase motor control	400	300 ... 5500	6		**5TT3440**		1	1 unit	027	0.450

* You can order this quantity or a multiple thereof.

7LF4 digital time switches

Overview

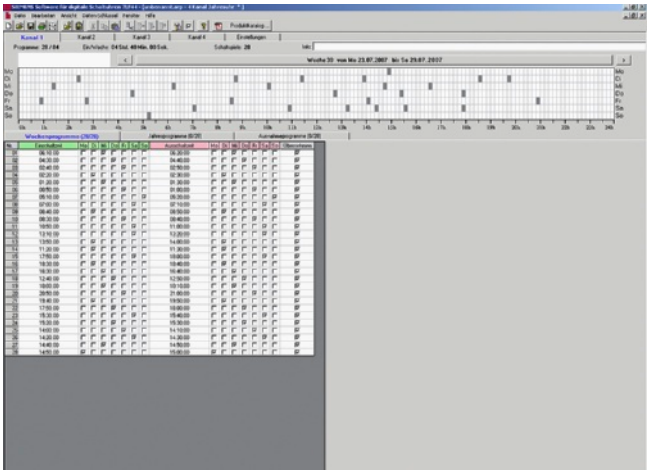
Top, Profi, Astro and Expert digital time switches

Text-assisted programming directly on the device.

The Profi, Astro and Expert digital time switches support plug-in data keys.

USB adapters

The Profi, Astro and Expert time switches are easy to program at the PC using the data key with the USB adapter and software.



- Clear data on the annual ON time of the load enables a precise statement on the annual power consumption.
- You can create switching programs conveniently at the PC, store it on the data key and transfer it locally to the time switch.
- Time saving during program creation, commissioning and maintenance

Technical specifications

			Mini 7LF4401-5	Top 7LF4511 7LF4512	Profi 7LF4521 7LF4522	Astro 7LF4531 7LF4532	Expert 7LF4444
Standards			EN 60730-1, -2-7; VDE 0631-1, -2-7				EN 60730-1, -2-7; VDE 0631-1, -2-7
Approvals			VDE, UL 60730-1,-2-7/ UL 917 CSA C22.2 No. 14 and 177	VDE			
Supply							
• Rated control supply voltage U_c		V AC	110 ... 240	230	230	230	120/230
		V AC/DC	--	--	24	--	24
- Primary operating range		× U_c	0.85 ... 1.1	0.85 ... 1.1	0.85 ... 1.1[1]	0.85 ... 1.1	80 .. 253 V[1]
- Frequency ranges		Hz	50 ... 60	50 ... 60	50 ... 60[2]	50 ... 60	50 ... 60[2]
• Rated power dissipation P_v		VA	0.035	2	2	2	2.5/4[3]
Channels/contacts							
• Switching channels			1	1 or 2			4
- Rated operational voltage U_e		V AC	250				
- Rated operational current I_e	At p.f. = 1	A	16				
	At p.f. = 0.6	A	10				
• Contacts			1 CO	1 or 2 CO			4 CO
- Mechanical switching cycles (in millions)			> 5	10			
- Electrical switching cycles	At p.f. = 1		6000 (20 A)	100000			
• Minimum contact load		V; mA	12; 100				
- Incandescent lamp load		A	5	8			
- Fluorescent lamp load		VA	58	60	600		58
	Uncorrected	VA	1400	2300	2000		1400
- Energy-saving lamp load		W	100	60 VA	1000		100
Safety							
• Different phases permissible between actuator/contact			Yes				
• Rated impulse withstand voltage U_{imp}		kV	4.0				
- EMC: burst	Acc. to IEC 61000-4-4	kV	> 4.4				
- EMC: surge	Acc. to IEC 61000-4-5	kV	> 2.0				
- Electrostatic discharge	Acc. to IEC 61000-4-2	kV	> 8.0				
• Power reserve storage	Mains/battery	a	6/2	3	5		
- Battery type			Li primary cell				
• Program memory	Captive		--	No	Yes		
• Overvoltage category	Acc. to EN 61010-1		III				
Function							
• Minimum switching sequences			1 min		1 s		
• Make and break cycles			1 min		1 s		
• Clock errors per day	Typical	s/day	+0.3 ± 1	± 1.5	0.1	± 0.1	± 0.2
• Control input	Terminal S		--	No		Yes	
• Memory spaces							
- Programs[4]			28	28 (2 × 14)	56 (2 × 28)	56 (2 × 28)	4 × 3 × 28
- Pulse (alternatively)			--				84
- Pulse cycle			--				1 s ... < 60 min
Connections							
• Terminals ±screw (Pozidriv)			PZ 1				
• Conductor cross-sections of main current paths							
- Rigid, max.		mm^2	4				
- Rigid, min.		mm^2	1.5				
- Flexible with end sleeve	Max.	mm^2	2.5				
Environmental conditions							
• Permissible ambient temperature		°C	-10 ... +55	-20 ... +55			
• Storage temperature		°C	-20 ... +60				
• Resistance to climate	Acc. to EN 60068-1		10/055/21	20/055/21			
• Degree of protection	Acc. to EN 60529		IP20, with connected conductors				
• Safety class	Acc. to EN 60730-1		II				

1) For 24 V devices (7LF4521-2, 7LF4522-2 and 7LF4444-2): Tolerance -10/+10 %; operating range 0.9 ... 1.1 × U_c.

2) For 24 V devices (7LF4521-2, 7LF4522-2 and 7LF4444-2): Frequency range 0 ... 60 Hz.

3) For 24 V device (7LF4444-2): P_v = 4 VA.

4) A program consists of an ON time, an OFF time and assigned ON and OFF days or day blocks.

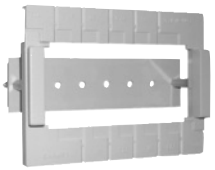
7LF4 digital time switches

Selection and ordering data

	Contacts	U_e	I_e	U_c	Mounting width	DT	Article No.	Price per PU	PU (UNIT, SET, M)	PS*/ P. unit	PG	Weight per PU approx.
		V AC	A AC	V AC	MW							kg
	Mini digital time switches											
	• Weekly program • 1 channel											
	1 CO	250	16	110 ... 240	1	▶	**7LF4401-5**		1	1 unit	025	0.156
	Top digital time switches NEW											
	• Weekly program • With text-assisted programming concept – language: English • Manual daylight-saving adjustment • 1 channel • 28 programs											
	1 CO	250	16	230	2		**7LF4511-0**		1	1 unit	025	0.137
	• 2 channels • 28 programs (14 per channel)											
	2 CO	250	16	230	2		**7LF4512-0**		1	1 unit	025	0.157
	Profi digital time switches NEW											
	• Weekly program • With text-assisted programming concept – languages: 15 languages • Simple program creation by means of PC using the software included with the 7LF4941-0 USB adapter • Vacation program • Random program • Operating hours counter, counting range: 65535 h • Synchronization 50/60 Hz (new) • Cycle function (new) • Expert mode (new) • Accurate to the second hh:mm:ss (new) • Automatic daylight-saving adjustment											
	• 1 channel • 56 programs											
	1 CO	250	16	230	2		**7LF4521-0**		1	1 unit	025	0.185
	1 CO	250	16	24 AC/DC	2		**7LF4521-2**		1	1 unit	025	0.189
	• 2 channels • 56 programs (28 per channel) • Channel changeover function (new)											
	2 CO	250	16	230	2		**7LF4522-0**		1	1 unit	025	0.207
	2 CO	250	16	24 AC/DC	2		**7LF4522-2**		1	1 unit	025	0.211
	Astro digital time switches NEW											
	• Weekly program • Astro function • With text-assisted programming concept – languages: 15 languages • Simple program creation by means of PC using the software included with the 7LF4941-0 USB adapter • Vacation program • 1 h test • Input disable via PC code • Operating hours counter, counting range: 65535 h • Random program • Automatic daylight-saving adjustment • Daylight-saving adjustment half-year correction (new) • Expert mode (new) • Synchronization 50/60 Hz (new) • Accurate to the second hh:mm:ss (new)											
	• 1 channel • 56 programs • With control input, delay time 0 min ... 23 h 59 min											
	1 CO	250	16	230	2		**7LF4531-0**		1	1 unit	025	0.185
	• 2 channels • 56 programs (28 per channel) • Channel changeover function (new)											
	2 CO	250	16	230	2		**7LF4532-0**		1	1 unit	025	0.207

8

* You can order this quantity or a multiple thereof.

	Contacts	U_e	I_e	U_c	Mounting width	DT	Article No.	Price per PU	PU (UNIT, SET, M)	PS*/ P. unit	PG	Weight per PU approx.
		V AC	A AC	V AC	MW							kg
	Expert digital time switches											
	• Weekly program • Year program • Exception program (priority program) • Astro function • With text-assisted programming concept – languages: German, English, French, Italian, Dutch, Spanish • Simple program creation by means of PC using the software included with the 7LF4941-0 USB adapter • Cycle function for channel 1 • Vacation function • 1 h test • Input disable via PIN code • Operating hours counter, counting range: 65535 h • 84 programs per channel • With control input (only 1 channel), delay time 0 min ... 23 h 59 min • With Expert data key, Article No. 7LF4940-2											
	• 4 channels											
	4 CO	250	16	120/230	6	▶	**7LF4444-0**		1	1 unit	025	0.460
	4 CO	250	16	24 AC/DC	6	▶	**7LF4444-2**		1	1 unit	025	0.450
	**Data keys for Profi and Astro digital time switches** NEW • 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						**7LF4941-1**		1	1 unit	025	0.017
	**Data keys for Expert digital time switch** • Programming at the PC (7LF4940-0 or 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					▶	**7LF4940-2**		1	1 unit	025	0.022
	**USB adapter and software for Profi, Astro and Expert digital time switches** NEW • For the reading and writing of data keys at the PC • With programming software • With one data key for Profi / Astro 7LF4941-1 • Compatible with predecessor model data key Profi / Astro 7LF4940-1 and data key Expert 7LF4940-2 • Can be connected over 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						**7LF4941-0**		1	1 unit	025	0.110
	**Starter kits** NEW • For upgrading with already available USB adapter (7LF4940-0) – thus establishing compatibility with new data keys Profi / Astro 7LF4941-1 • Compatible with data key Expert 7LF4940-2 and with predecessor model data key Profi / Astro 7LF4940-1 • Including data key Profi / Astro 7LF4941-1 + software						**7LF4941-3**		1	1 unit	025	0.041
	**Holders for front panel installation** Universal application for devices from 1 MW to 6 MW Cutout dimensions: Height $45^{+0.5}$ mm Width 23 mm, 41 mm, 59 mm, 77 mm, 95 mm or 113 mm						**7LF9006**		1	1 unit	025	0.070

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* You can order this quantity or a multiple thereof.

7LF5 mechanical time switches

Overview

Mechanical time switches with day disk

Mechanical time switches with week disk

Synchronous time switches without power reserve

The control gear is driven by a synchronous motor so it is dependent on the power supply frequency. If this frequency is unstable, the devices cannot be used. In the event of a power failure, the time switch will stop.

Quartz-clock time switches with power reserve

A quartz electronic circuit supplies the drive with a stabilized frequency so that the time switch is not dependent on the power supply frequency. In the event of a power failure, the time switch continues to operate on its power reserve.

Technical specifications

		Synchronous time switches without power reserve				Quartz-clock time switches with power reserve					
		7LF5 300-1	7LF5 300-5	7LF5 300-6	7LF5 301-0	7LF5 301-1	7LF5 301-4	7LF5 301-5	7LF5 301-6	7LF5 301-7	7LF5 305-0
Standards		EN 60730-1, -2-7, UL 917									
Approvals		UL 60730-1,-2-7/UL 917 CSA C22.2 No. 14 and 177									
Operating mode		Synchronous				Quartz					
• Time program		Day	Day	Week	Day	Day	Day	Week	Day	Week	Day
Supply											
• Rated control supply voltage U_c	V AC	230				230					
- Primary operating range	$\times U_c$	0.85 ... 1.1				0.85 ... 1.1					
• Rated frequency	Hz	50				50					
- Frequency ranges	Hz	50				50/60					
• Rated power dissipation P_v	VA	1				1	0.2	0.2	1	1	1
Channels/contacts											
• Switching channels		1				1					
- Rated operational voltage U_e	V AC	250				250					
- Rated operational current I_e											
At p.f. = 1	A	16				16					
At p.f. = 0.6	A	4				4					
• Contacts		1 NO	1 CO	1 CO	1 CO	1 NO	1 CO	1 CO	1 CO	1 CO	1 CO
- Mechanical switching cycles	in millions	20				20					
- Electrical switching cycles at p.f. = 1		100000				100000					
• Minimum contact load	V; mA	4; 1				4; 1					
- Incandescent lamp load	A	5				5					
- Fluorescent lamps											
At 7 µA	VA	60				60					
Uncorrected	VA	1400				1400					
Safety											
• Different phases permissible between actuator/contact		Yes				Yes					
• Electrical isolation, creepage distances and clearances, actuator/contact	mm	8/6				8/6					
• Rated impulse withstand voltage U_{imp} drive/contact	kV	4				4					
- EMC: burst acc. to IEC 61000-4-4	kV	> 4.4				> 4.4					
- EMC: surge acc. to IEC 61000-4-5	kV	> 2.0				> 2.0					
- Electrostatic discharge according to IEC 61000-4-2	kV	> 8.0				> 8.0					
• Power reserve storage	a	--				100 h	6		100 h		
- Minimum loading time	h	--				48	--		48		
- Battery type		--				NiMH cell	Li primary cell		NiMH cell		
- Service life of battery											
At 20 °C	a	--				6	10		6		
At 40 °C	a	--				5					
• Overvoltage category acc. to EN 61010-1		III				III					
Function											
• Minimum switching sequences	min	30		240	30	30		240	30	240	30
• Make and break cycles	min	15		120	10	15		120	15	120	10
• Switching accuracy	min	± 5		± 30	± 5	± 5		± 30	± 5	± 30	± 5
• Clock errors per day		System-synchronized				± 2.5 s	± 60/year		± 2.5 s		
Connections											
• Terminals ±screw (Pozidriv)		PZ 1				PZ 1					
• Conductor cross-sections of main current paths											
- Rigid, max.	mm^2	4				4					
- Rigid, min.	mm^2	1.5				1.5					
- Flexible, with end sleeve	mm^2	2.5				2.5					
- Flexible, without end sleeve	mm^2	4				4					
Environmental conditions											
• Permissible ambient temperature	°C	-10 ... +55				-10 ... +55					
• Storage temperature	°C	-10 ... +60				-10 ... +60					
• Resistance to climate	Acc. to EN 60068-1	10/055/21				10/055/21					
• Degree of protection	Acc. to EN 60529	IP20, with connected conductors				IP20, with connected conductors					
• Safety class	Acc. to EN 61140	II				II					

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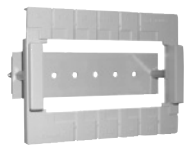
7LF5 mechanical time switches

Selection and ordering data

	Contacts	U_e	I_e	U_c	Mounting width	DT	Article No.	Price per PU	PU (UNIT, SET, M)	PS*/ P. unit	PG	Weight per PU approx.
		V AC	A AC	V AC	MW							kg
	**Synchronous time switches without power reserve, 1 MW**											
	• Day disk											
	1 NO	250	16	230	1	▶	**7LF5300-1**		1	1 unit	025	0.083
	**Synchronous time switches without power reserve, 3 MW**											
	• Day disk											
	1 CO	250	16	230	3	▶	**7LF5300-5**		1	1 unit	025	0.151
	• Week disk											
	1 CO	250	16	230	3	▶	**7LF5300-6**		1	1 unit	025	0.153
	**Synchronous time switches without power reserve, for wall mounting**											
	• Day disk											
	1 CO	250	16	230	--	▶	**7LF5301-0**		1	1 unit	025	0.196
	**Quartz-clock time switches with power reserve**											
	• Day disk											
	1 NO	250	16	230	1	▶	**7LF5301-1**		1	1 unit	025	0.088
	**Quartz-clock time switches with power reserve and automatic time setting for Central European time zone**											
	• Time set automatically during commissioning • Automatic daylight savings • With quartz clock mechanism • Clock accuracy ± 0.2 s/day • 5-year power reserve (time buffer in the event of a power failure)											
	• Day disk											
	1 CO	250	16	230	3	▶	**7LF5301-4**		1	1 unit	025	0.182
	• Week disk											
	1 CO	250	16	230	3	▶	**7LF5301-5**		1	1 unit	025	0.179
	Quartz-clock time switches with power reserve											
	Clock accuracy ± 2.5 s/day											
	• Day disk											
	1 CO	250	16	230	3	▶	**7LF5301-6**		1	1 unit	025	0.157
	• Week disk											
	1 CO	250	16	230	3	▶	**7LF5301-7**		1	1 unit	025	0.158
	**Quartz-clock time switches with power reserve, for wall mounting (surface mounting)**											
	• Day disk											
	1 CO	250	16	230	--	▶	**7LF5305-0**		1	1 unit	025	0.205
	**Holders for front panel installation**											
	Universal use for devices from 1 to 6 MW											
	Cutout dimensions: Height $45^{+0.5}$ mm Width 23 mm, 41 mm, 59 mm, 77 mm, 95 mm or 113 mm						**7LF9006**		1	1 unit	025	0.070

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* You can order this quantity or a multiple thereof.

Overview

Siemens stairwell lighting timers enable the required time to be set precisely without tools using the push-to-lock knurling wheel. The stairwell lighting timers in four-wire installations can be switched back on again at any time by simply pressing the switch. A maintained light switch prevents the need for repeated pressing, for example when moving house. The various types are also available with warning of impending switch-off.

Benefits

- Durable switching of different illuminants thanks to patented contact design
- Suitable for energy-saving lamps
- Quiet switching of stairwell lighting timers
- Warning of impending switch-off in accordance with DIN 18015-2 for stairwell lighting in apartment blocks

Technical specifications

			7LF6110	7LF6111	7LF6113	5TT1303	7LF6114	7LF6115	7LF6116	7LF6112
Standards			IEC 60669, EN 60669							
Supply										
• Rated control supply voltage U_c		V AC	230							
- Primary operating range	At 50/60 Hz	× U_c	0.9 ... 1.1							
• Rated power dissipation P_v		VA	Approx. 5							
Setting range		min	0.5 ... 10			1 ... 10	0.5 ... 10	3 ... 60		0.5 ... 10
• Accuracy		s	± 30							
Manual switches	Automatic/permanent		Yes							
Minimum push duration		ms	30							
Voltage endurance	At pushbutton input (pushbutton malfunction)		Yes							
Short-circuit strength		A	700			--	700			
Channels/contacts										
• Switching channels										
- Rated operational voltage U_e		V AC	250							
- Rated operational current I_e	At p.f. = 1	A	16		--	10	16			
• Contact gap		mm	> 3			0.3	> 3			
• Minimum contact load		V; mA	10; 300							
Max. incandescent lamp load		W	2000			--	2000			--
Max. energy-saving lamp load 14 W		Unit(s)	20			--	20			--
Fluorescent lamp load 58 W										
- Uncorrected		Unit(s)	20			--	20			
- DUO circuit		Unit(s)	2 × 20			--	2 × 20			
- Siemens ECG	1 lamp	Unit(s)	10			6	10			
	2 lamps	Unit(s)	2 × 5			3	2 × 5			
Glow lamp load		mA	50			10	50			--
Max. fan load		VA	--							200
Connections										
• Terminals ±screw (Pozidriv)			PZ 1							
• Conductor cross-sections of main current paths										
- Rigid		mm^2	1.5 ... 6							
- Flexible, with end sleeve	Min.	mm^2	1							
Environmental conditions										
• Resistance to climate	Acc. to EN 60068-1	°C	-20 ... +50							
• Degree of protection	Acc. to EN 60529		IP20, with connected conductors							

7LF6 timers for buildings

Selection and ordering data

	U_e	I_e	U_c	Mounting width	DT	Article No.	Price per PU	PU (UNIT, SET, M)	PS*/ P. unit	PG	Weight per PU approx.
	V AC	A AC	V AC	MW							kg
	Stairwell lighting timers										
	With switch for continuous light and push-to-lock knurling wheel setting, setting range 0.5 ... 10 minutes For 3-wire circuit, L-momentary contact, not resettable	250	16	230	1	▶	**7LF6110**		1	1 unit	025	0.080
	For 4-wire circuit, L-momentary contact, resettable, or 3-wire circuit, N-momentary contact, resettable	250	16	230	1	▶	**7LF6111**		1	1 unit	025	0.088
	With warning by flashing prior to switching off, for 4-wire circuit, L-momentary contact, resettable, or 3-wire circuit, N-momentary contact, resettable	250	16	230	1	▶	**7LF6113**		1	1 unit	025	0.088
	Lighting timers										
	With switch for continuous light and push-to-lock knurling wheel setting, with warning by flashing prior to switch-off, setting range 0.5 ... 10 minutes, 4-fold extension of runtime by pressing the pushbutton for 1 second, for 4-wire circuit, L-momentary contact, or 3-wire circuit, N-momentary contact	250	16	230	1	▶	**7LF6114**		1	1 unit	025	0.088
	Energy-saving timers										
	With switches for continuous light and push-to-lock knurling wheel setting, setting range 3 ... 60 minutes, switch off by pressing pushbutton a second time briefly (< 1 s) as with remote control switch, reset by pressing pushbutton a second time for longer (> 1 s), for 4-wire circuit, L-momentary contact, resettable, or 3-wire circuit, N-momentary contact, resettable	250	16	230	1	▶	**7LF6116**		1	1 unit	025	0.071
	With switches for continuous light and push-to-lock knurling wheel setting, with warning by flashing prior to switch-off, setting range 3 ... 60 minutes, switch off by pressing pushbutton second time as with remote control switch, for 4-wire circuit, L-momentary contact, resettable, or 3-wire circuit, N-momentary contact, resettable	250	16	230	1	▶	**7LF6115**		1	1 unit	025	0.088
	Timers for fans up to 200 VA										
	With switch for continuous operation and push-to-lock knurling wheel setting, setting range 0.5 ... 10 minutes, for delayed switch-on of fan	250	16	230	1	▶	**7LF6112**		1	1 unit	025	0.082
	ECG control switches for ECG 1 ... 10 V										
	With transparent cap, with switch for continuous light and position indication, setting range 1 ... 10 minutes, with warning of switching off through dimming, direct voltage output 1 ... 10 V for controlling 20 ECG	250	10	230	2		**5TT1303**		1	1 unit	025	0.143

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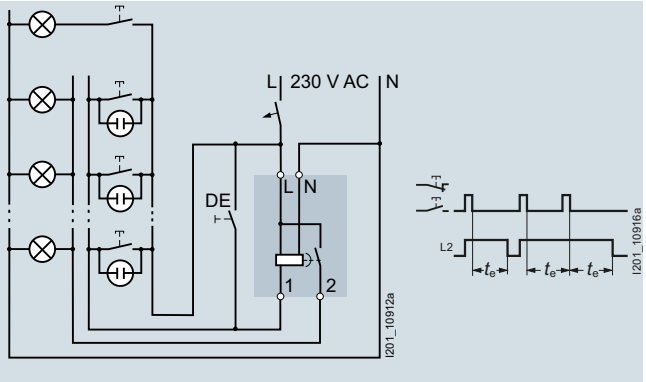
* You can order this quantity or a multiple thereof.

Circuit diagrams

Circuit example for 7LF6111 timer in 4-wire circuit, L-momentary, resettable

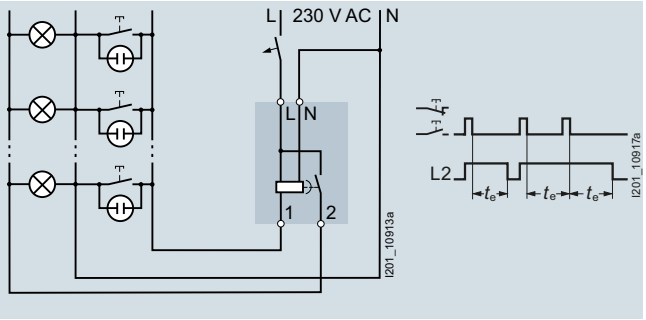
Usual circuit for new installation with separate cable routing for pushbuttons and lights. The additional DI switch allows external switching to continuous light or a time switch can also be used for this purpose. An additional attic circuit is also available, which operates independently of the timer, but on the same electrical circuit. The timer can be restarted before the set time expires.



t_e = runtime

Circuit example for 7LF6111 timer in 3-wire circuit, N-momentary, resettable

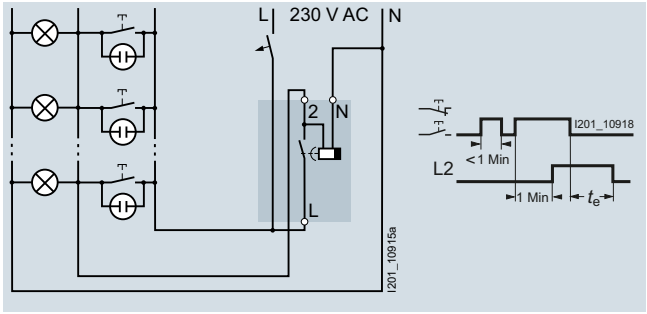
Can only be used with a limited number of wires. The timer can be restarted before the set time expires. While this 3-wire circuit with N-momentary contact is technically possible, it does not comply with DIN VDE 0100-460. However, it is used in old systems for replacement purposes.



t_e = runtime

Circuit example for 7LF6112 timer for fans up to 200 VA

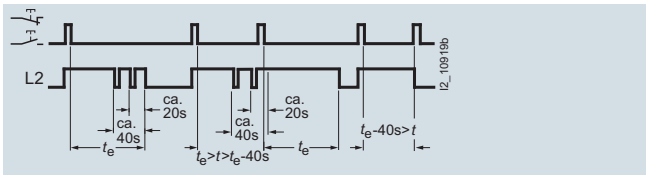
The switch switches the light on immediately, e.g. in a toilet. After a delay of approx. 1 minute, the fan is switched on. When the light is switched off, the fan continues to run for the time set at the timer.



t_e = runtime

Circuit example for 7LF6115 energy-saving timer with prewarning

The timer is connected in the same way as the 7LF6111 timer in a 4-wire or 3-wire circuit. The energy-saving timer is activated at the first press of the button and deactivated at the second press. If it is not switched off manually, it is automatically switched off after the set time, max. 60 minutes. 20 and 40 seconds before expiry, the light flashes briefly twice (50 ms) to warn of the impending tripping. This allows time to reset the switch while the light is still on. Prior to the warning time, a push of the button ends the timing interval.



t_e = runtime

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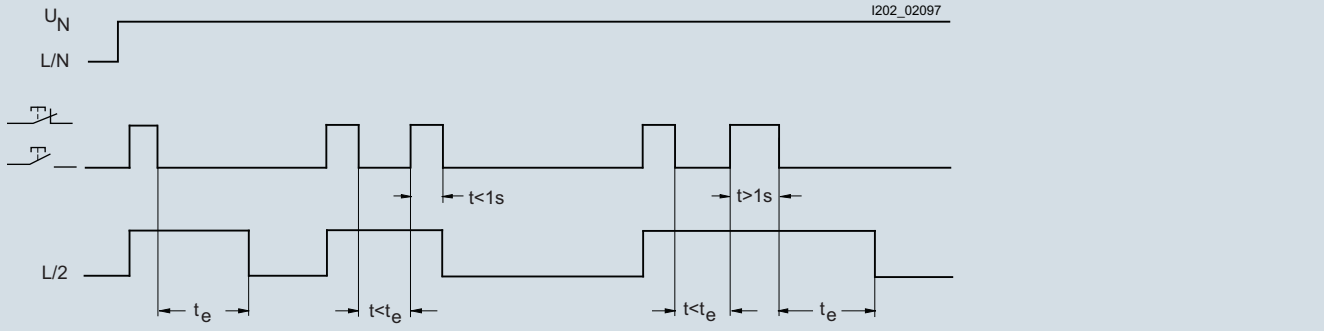
7LF6 timers for buildings

Circuit example for 7LF6116 energy-saving timer

The timer is connected in the same way as the 7LF6115 timer in a 4-wire or 3-wire circuit. The energy-saving timer switches on if pressed once and switches off when it is pressed again briefly (less than 1 second).

Resetting is possible by pressing a second time for longer (more than 1 second). If it is not switched off manually, it is automatically switched off after the set time, max. 60 minutes.



t_e = runtime

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Lighting in ancillary rooms and corridors

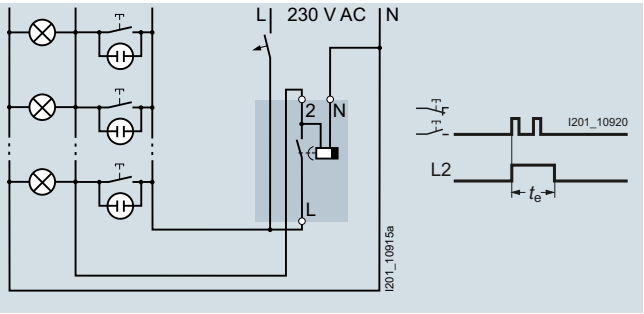
In rooms subject to less frequent use (basements, ironing rooms, attics, heating oil storerooms) there is a risk of the lighting remaining on unnecessarily for lengthy periods. In such cases, the 7LF6115 and 7LF6116 energy-saving timers can considerably reduce energy costs while increasing user-friendliness.

Occupants leaving a room can switch off the light by pushbutton, just like an installation with remote control switch. In the event that occupants are unable to switch the light off, or simply forget, it will go out automatically after a pre-set time.

The 7LF6115 and 7LF6116 energy-saving timers can also be used in corridors, e.g. as replacements for remote control switches. In this case they combine the familiar functionality of a remote control switch with the energy-saving features of a stairwell lighting timer.

Circuit example for 7LF6110 timer in 3-wire circuit, L-momentary contact, not resettable

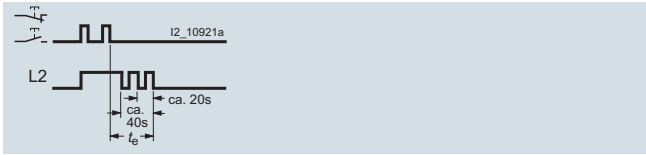
Circuit for new installation with shared cable routing for pushbuttons and lights. The timer can only be restarted after the set time expires.



t_e = runtime

Circuit example for 7LF6113 energy-saving timer with advance warning

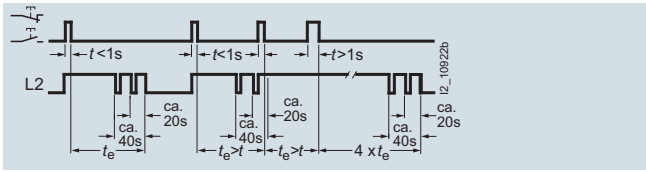
The timer is connected in the same way as the 7LF6111 timer in a 4-wire or 3-wire circuit. 20 and 40 seconds before expiry, the light flashes briefly twice (50 ms) to warn of the impending tripping. This allows time to reset the switch while the light is still on.



t_e = runtime

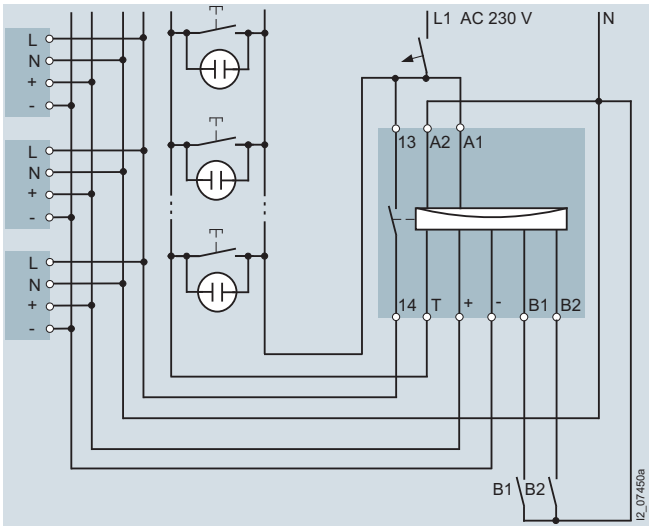
Circuit example for 7LF6114 energy-saving timer with advance warning

The timer is connected in the same way as the 7LF6111 timer in a 4-wire or 3-wire circuit. When pressed, the lighting timer switches on for the set runtime, up to 10 minutes. If the switch is pressed for more than one second, the light is switched on for four times the set time, i.e. up to 40 minutes. The last press of the pushbutton is definitive. 20 and 40 seconds before expiry, the light flashes briefly twice (50 ms) to warn of the impending tripping. This allows time to reset the switch while the light is still on. The timing interval restarts each time the button is pressed.



t_e = runtime

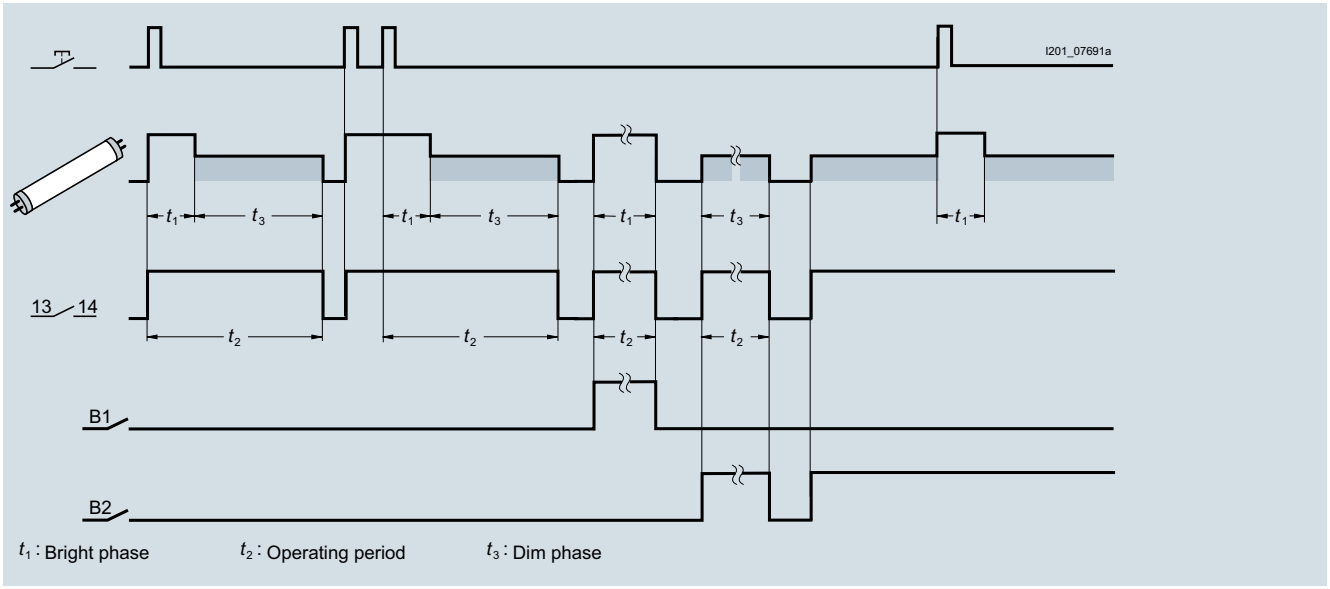
Circuit example for 5TT1303 ECG control switch



The device is fitted with a direct voltage input for the control of an ECG. When the pushbutton is actuated, the power supply is released and the ECG is brightened for up to 10 minutes, depending on the setting of the timer.

On expiry of this time, the ECG is dimmed according to the set dimmer level, if pressed again it brightens again. If no requests are made for 30 minutes (no buttons pressed), the lighting is fully deactivated. In addition to these functions, the dimming time and brightness period can also be controlled using a separate pushbutton or time switch over the control inputs B1 and B2.

Switching the ECG and the fluorescent lamp as little as possible extends the service life.



Hall lighting in nursing home

At meal times, from 5 to 7 p.m., the light in the corridors can be permanently switched on using a time switch (contact B1). Between 7 p.m. and 10 p.m., the lighting is dimmed using switch B2. Simply press the corridor pushbutton again to return the lighting to the bright setting at any time. After 10 p.m., the light is switched off. It can be switched back on at any time by pressing the corridor pushbutton.

Corridor lighting in hospitals

During the day – i.e. during peak periods, lunch times, visiting times, shift changes, doctor's rounds – the light is switched on. During quiet periods, i.e. afternoons and nights, the light is switched to a dimmed state. A patient can switch the light back to the bright setting at any time by pressing the corridor pushbutton. In emergencies, the nurse can use a B1 switch to switch to "emergency operation", i.e. permanently bright (no time limit of brightness period).

5TT3 timers for industrial applications

Overview

Time relays are primarily used in series applications where the use of PLC controls is too labor and cost-intensive. Multifunction relays with a range of functionalities and clear and intuitive operation are now market standard.

Benefits

- Suitable for universal use because the devices can be operated with 12 - 240 V AC/DC and work across a broad range from seconds to hours
- An off-delay without auxiliary power supports expanded application

Technical specifications

			5TT3185	5TT3181 5TT3182 5TT3183	5TT3184
Standards			EN 60255; DIN VDE 0435-110		
Supply					
• Rated control supply voltage U_c		V AC V DC	12 ... 240 12 ... 240	220 ... 240 --	110 ... 240 110 ... 240
- Primary operating range		× U_c	0.8 ... 1.1		
• Rated frequency f_n		Hz	45 ... 400	50/60	
• Rated power dissipation P_v		VA	Approx. 1.5	Approx. 5	Approx. 1
Setting ranges			See setting ranges, timing intervals		
Recovery time		ms	15 ... 80	Approx. 40	Approx. 100
Contacts					
• Switching channels					
- Rated operational voltage U_e		V AC	250		
- Rated operational current I_e		A	4	8	5
• Contact gap		mm	µ contact		
- Minimum contact load		V; mA	10; 300		
Rated impulse withstand voltage U_{imp}	Input/output	kV	> 4		
Electrical service life	In switching cycles At AC-15	1 A	1.5×10^5 --	-- 1.5×10^5	1.5×10^5 --
Connections					
• Terminals ±screw (Pozidriv)			2		
• Conductor cross-sections of main current paths					
- Rigid, max.		mm^2	2 × 2.5		
- Flexible, with end sleeve, min.		mm^2	2 × 1.5		
Environmental conditions					
• Permissible ambient temperature		°C	-40 ... +60		
• Resistance to climate	Acc. to EN 60068-1		40/60/4		

Selection and ordering data

	Contacts	U_e	I_e	U_c	Mounting width MW	DT	Article No.	Price per PU	PU (UNIT, SET, M)	PS*/ P. unit	PG	Weight per PU approx. kg
		V AC	A AC	V								
	**Multifunction timers** Programmable for: response delay; passing make contact function; delayed pulse generator; clock generator starting with impulse; off-delay; pulse converter; passing break contact function; response/off-delay											
	1 CO	250	4	12 ... 240 DC 12 ... 240 AC	1	►	**5TT3185**		1	1 unit	025	0.085
	Delay timers											
	1 CO	250	8	220 ... 240 AC	1	►	**5TT3181**		1	1 unit	025	0.090
	Wiper timers											
	1 CO	250	8	220 ... 240 AC	1		**5TT3182**		1	1 unit	025	0.079
	Flashing timers Pulse time is equal to idle time											
	1 CO	250	8	220 ... 240 AC	1		**5TT3183**		1	1 unit	025	0.084
	Off-delay timers											
	1 CO	250	5	110 ... 240 AC 110 ... 240 DC	1		**5TT3184**		1	1 unit	025	0.077

* You can order this quantity or a multiple thereof.

More information

5TT3185 multifunction timers

Setting aids

The period of the flashing of the green LED 1 when set for a timing interval is 1 s ± 4%, which can therefore be used as a setting aid. This is particularly useful in the lower time setting range and for long delay times because of the accuracy of the multiplication factors between the individual time ranges.

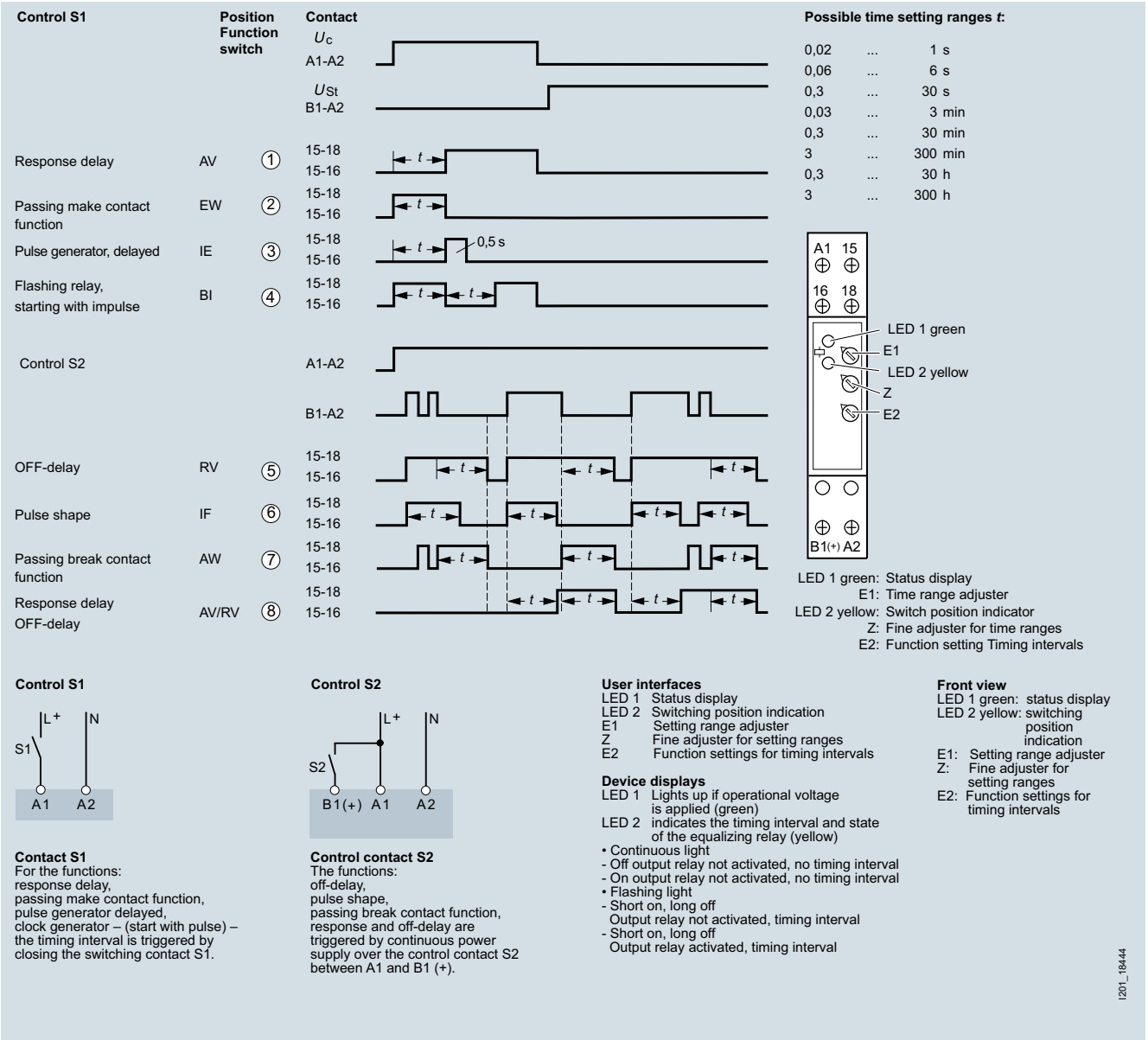
Example:
Delay time to be set: 40 min.
Using the fine setting, this delay time can be set within the setting range 3 ... 300 min. However, in this case it takes a long time to check the time and requires several operational sequences in realtime. To speed up the setting process, the setting range is switched to 0.03 ... 3 min. In this case, the required value corresponds to a delay time 0.4 min (= 24 s). The timing interval is triggered and the potentiometer is set to 24 flashing periods of the yellow LED 2. The device is then set back to the setting range 3 ... 300 min and the setting process is completed.

Time operation interruption/time addition

For the functions AV, EW, IE, BI, the timing interval can be interrupted at any time by activating B1 (+) and continued again by removing the control voltage (time addition).

Control input B1

The functions RV, IF, AW, AV/RV can be controlled using the control input B1 (+) with potential against terminal A2. The auxiliary voltage of terminal A1 - or any other voltage within the range 12 ... 240 V AC/DC - can be used for this purpose. The operation of parallel loads (e.g. contactors) from B1 (+) to A2 is also permissible.
If voltage is simultaneously applied to the control input B1 (+) and A1 for the IF function, an output pulse is triggered with the set time interval t_1.



Control S1

Contact S1
For the functions:
response delay,
passing make contact function,
pulse generator delayed,
clock generator – (start with pulse) –
the timing interval is triggered by
closing the switching contact S1.

Control S2

Control contact S2
The functions:
off-delay,
pulse shape,
passing break contact function,
response and off-delay are
triggered by continuous power
supply over the control contact S2
between A1 and B1 (+).

User interfaces
LED 1 Status display
LED 2 Switching position indication
E1 Setting range adjuster
Z Fine adjuster for setting ranges
E2 Function settings for timing intervals

Device displays
LED 1 Lights up if operational voltage is applied (green)
LED 2 indicates the timing interval and state of the equalizing relay (yellow)
• Continuous light
- Off output relay not activated, no timing interval
- On output relay not activated, no timing interval
• Flashing light
- Short on, long off
Output relay not activated, timing interval
- Short on, long off
Output relay activated, timing interval

Front view
LED 1 green: status display
LED 2 yellow: switching position indication
E1: Setting range adjuster
Z: Fine adjuster for setting ranges
E2: Function settings for timing intervals

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Notes