8 Timers

Introduction

Overvierw

Units		Application	Standards	Usage		
				Non-res. bldgs.	Res. bldgs.	Industry
	**Timers for buildings**					
	• 7LF6 110, 7LF6 111 stairwell lighting timers	Energy saving in stairwell lighting	EN 60669, IEC 60699	•	•	
	• 7LF6 113 stairwell lighting timers with advance warning	With warning through flashing prior to the stairwell lighting switching off in apartment houses	EN 60669, IEC 60699, DIN 18015	•	•	
	• 5TT1 303 stairwell lighting timers ECG	For controlling electronic primary switching devices for fluorescent lamps and warning by dimming prior to switching off the stairwell lighting in stairwells with multiple apartments	EN 60669, IEC 60699, DIN 18015	•	•	
	• 7LF6 114 lighting timers with advance warning	For saving energy in little or variously used rooms, with warning by flashing prior to switching off the stairwell lighting in stairwells with multiple apartments	EN 60669, IEC 60699, DIN 18015	•	•	
	• 7LF6 115 energy-saving timers with advancewarning			•	•	
	• 7LF6 112 time switch for fan	Energy saving in bathrooms	EN 60699, IEC 60699	•	•	
	**Timers for industrial applications**					
	• 5TT3 185 multifunction timers	For influencing time sequences in control systems	EN 60255, IEC 60255			•
	• 5TT3 181 delay timers					•
	• 5TT3 182 wiper timers					•
	• 5TT3 183 flashing timers					•
	• 5TT3 184 Off-delay timers					•
	**7LF5 1, 7LF5 2 mechanical time switches**					
	• 7LF5 1.0, 7LF5 2 time switches	Switching of day and week program, accurate to 30 minutes	EN 60730, IEC 60730	•		•

Definitions

I_e = Rated operational current
U_e = Rated operational voltage
I_c = Rated control supply current
U_c = Rated control supply voltage
P_s = Rated operational capacity
1 MW = 18 mm modular width

Overview

	Stairwell lighting timers				Lighting timer	Energy-saving timer	Time switch for fans
	7LF6 110	7LF6 111	7LF6 113	5TT1 303	7LF6 114	7LF6 115	7LF6 112
Setting range in minutes	0.5 ... 10	0.5 ... 10	0.5 ... 10	1 ... 10	0.5 ... 10	3 ... 60	0.5 ... 10
Manual switch, steady light	•	•	•	•	•	•	continuous operation
Resettable	–	•	•	•	•	•	•
Switch off warning	–	–	flashing	dimming	flashing	flashing	–
ECG control	–	–	–	•	–	–	–
Quadruple runtime extension by extended pressing of pushbutton	–	–	–	–	•	–	–
Switch off by pressing pushbutton twice	–	–	–	–	–	•	–
4-wire circuit, L-momentary contact	–	•	•	–	•	•	–
3-wire circuit, L-momentary contact	•	–	–	–	–	–	–
3-wire circuit, N-momentary contact	–	•	•	–	•	•	–

Design

Stairwell lighting

This is required in DIN 18015-2 "Electrical systems in residential buildings; minimum type and scope of the equipment". What is less known is that 100 lux is required acc. to EN 12464-1 "Lighting of workplaces" for traffic areas and corridors, section 5.3. This means that approx. 60 W incandescent lamps, 25 W energy-saving lamps or 25 W fluorescent lamps need to be used. It is hard to see why lesser requirements should apply to stairwells in residential buildings than stipulated in EN 12464-1.

4-wire circuit, L-momentary contact

4 wires are installed within the building. The timing interval is started by pressing phase L. During the runtime, the timer can be reset at all times.

3-wire circuit, L-momentary contact

3 wires are installed within the building. The timing interval is started by pressing phase L. No resetting is possible during the runtime as the pushbutton's input and output are exposed to the same potential during this period. The glow lamps are switched off during the runtime.

3-wire circuit, N-momentary contact

3 wires are installed within the building. The timing interval is started by pressing the N-conductor. During the runtime, the timer can be reset at all times. However, this circuit no longer conforms to DIN VDE 0100. It is only still in use in old installations.

Function

Safety through warning prior to switching off

DIN 18015-2 "Electrical systems in residential buildings; type and scope of minimum equipment" stipulates that the automatic lighting-off control in stairwells of multifunctional dwellings must be equipped with a warning function to prevent sudden darkness in the building. This contribution towards safety is offered by 4 device models. The 7LF6 113 lighting timer, the 7LF6 114 lighting timer and the 7LF6 115 energy-saving timer warn of an impending off by flashing, the ECG 5TT1 303 stairwell lighting timer warns of an impending off by dimming, allowing sufficient time for the light switch to be pressed again.

Manual switch

All time switches have a manual switch for the function Automatic/ON. This allows the operator to switch to permanent light in the event of moving house or emergencies.

Useful continuous contact

Pushbuttons should never jam. For this reason, all our time switches have a safeguard to prevent this type of malfunction. Even better, this feature can be used (e.g. by caretakers of properties) to switch to a permanent steady light in the event of moving house or emergencies.

Setting accuracy

The electronic remote switches offer a high degree of accuracy. The runtime can be set precisely to +30 seconds using the push-to-lock knurling wheel setting. The factory settings ensure that the limit values of 1 and 10 or 60 minutes can be reliably set.

Short-circuit strength

Stairwell lighting timers are primarily used for the switching of incandescent lamps, which may occasionally be subject to short-circuits. A key feature of all devices is their high short-circuit strength without the contacts welding.

Switching of fluorescent lamps

In order to extend their service life as far as possible, fluorescent lamps should only be switched using a stairwell lighting timer if the switching frequency is not excessive. Using electronic ballast (ECG) to operate them is more gentle on the device and saves energy. The 5TT1 303 stairwell lighting timer ECG switches the electronic ballast and warns of an impending off by dimming.

Switching of energy-saving lamps

The switching of energy-saving lamps has provoked heated discussions. Energy-saving lamps require a certain time before they produce their full light output. The characteristic of the electronics is not ideal for flashing operation. They do not dim. It is difficult to find suppliers of energy-saving lamps that are suitable for stairwell lighting timers and comply with the required specifications.

7LF6 1, 5TT1 3 timers

Technical specifications

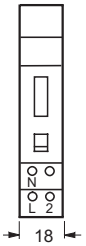
			7LF6 110	7LF6 111	7LF6 113	5TT1 303	7LF6 114	7LF6 115	7LF6 112
Rated control supply voltage U_c		V AC	230						
Operating range	at 50/60 Hz	× U_c	0.9 ... 1.1						
Rated power dissipation P_s		approx. VA	5						
Setting range		min	0.5 ... 10			1 ... 10	0.5 ... 10	3 ... 60	0.5 ... 10
Accuracy		s	±30						
Glow lamp load		mA	50			–	50		–
Manual switch	automatic/permanent		yes						
Minimum push duration		ms	30						
Continuous voltage	at pushbutton input (pushbutton malfunction)		yes						
Contact	contact gap minimum contact load	mm V; mA	> 3 10; 300						
Rated operational voltage U_e		V AC	250						
Rated operational current I_s	for p. f. = 1	A	16			10	16		–
Short-circuit strength		A	700			–			
Max. incandescent lamp load		W	2000						–
Max. fan load		VA	–						200
Terminals	± screw (Pozidrive)		1						
Conductor cross-sections	rigid	mm^2	1.5 ... 6						
	flexible with sleeve, min.	mm^2	1						
Degree of protection			IP20						
Permissible ambient temperature		°C	-10 ... +50						
Resistance to climate	acc. to DIN 50016		FW 24						

Selection and ordering data

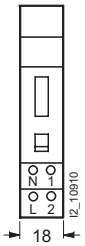
	U_e	I_e	U_c	MW	Order No.	Weight 1 item	PS*/ P. unit
	V AC	A	V			kg	Items
	**Stairwell lighting timers**						
	with switch for steady light and latch setting, setting range 0.5 ... 10 minutes						
	for 3-wire circuit, L-momentary contact, not resettable						
	250	16	230	1	**7LF6 110**	0.085	1
	for 4-wire circuit, L-momentary contact, resettable, or 3-wire circuit, N-momentary contact, resettable						
	250	16	230		**7LF6 111**	0.085	1
	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		**7LF6 113**	0.085	1
	**Lighting timer**						
	with switch for steady light and latch setting, with warning by flashing prior to switching off, setting range 0.5 ... 10 minutes, quadruple extension of runtime by pressing pushbutton for 1 second, for 4-wire circuit, L-momentary contact, or 3-wire circuit, N-momentary contact						
	250	16	230	1	**7LF6 114**	0.085	1
	Energy saving timer						
	with switch for steady light and latch setting, with warning by flashing prior to switching off, setting range 3 ... 60 minutes, switching off by pressing button twice as with a remote control switch for 4-wire circuit, L-momentary contact, resettable, or 3-wire circuit, N-momentary contact, resettable						
	250	16	230	1	**7LF6 115**	0.085	1
	Time switch for fan up to 200 VA						
	with switch for steady light and latch setting, setting range 0.5 ... 10 minutes, for delayed switching on of fan						
	250	–	230	1	**7LF6 112**	0.085	1
	ECG control switch with transparent cap, for ECG dynamic						
	with transparent cap, with switch for steady light and position indication, setting range 1 ... 10 minutes, with warning prior to switching off by dimming, DC output 1 to 10 V for control of 20 ECG dynamic mounting depth 55 mm						
	250	10	230	2	**5TT1 303**	0.130	1

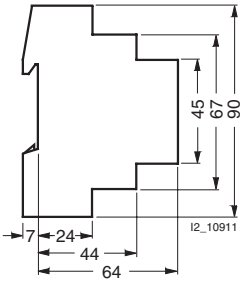
Dimensional drawings

7LF6 110

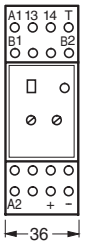


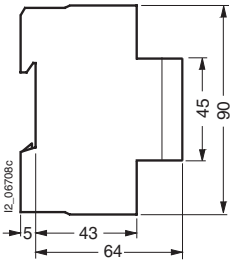
7LF6 111
7LF6 112
7LF6 113
7LF6 114
7LF6 115





5TT1 303





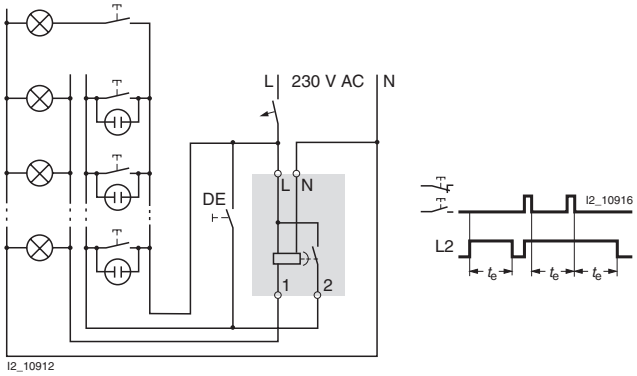
* You can order this quantity or a multiple thereof.

7LF6 1, 5TT1 3 timers

Schematics

Switching example: 7LF6 111 time switch in 4-wire circuit, L-momentary contact, resettable

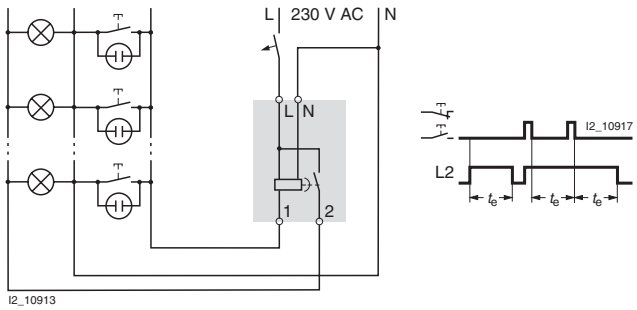
Usual circuit for new installation with separate cable routing for pushbuttons and lights. The additional DI switch allows external switching to permanent light. A time switch can also be used. An additional attic circuit is also available, which operates independently of the time switch, but on the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



t_e = runtime

Switching example: 7LF6 111 time switch in 3-wire circuit, N-momentary contact, resettable

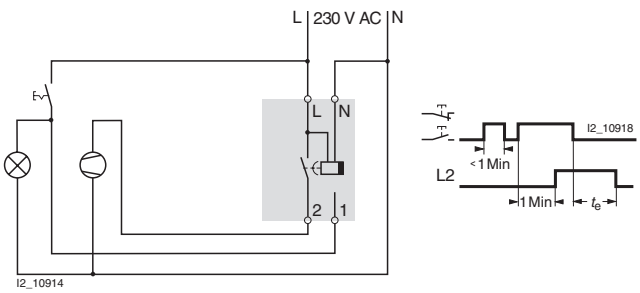
Can only be used with a limited number of wires. The time switch can be restarted before the set time expires. While this 3-wire circuit with N-momentary contact is technically possible, it does not correspond to the current version of DIN VDE 0100-460. However, it is used in old systems for replacement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



t_e = runtime

Switching example: 7LF6 112 time switch for fans up to 200 VA

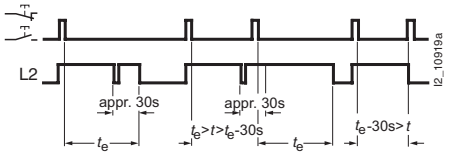
The switch switches the light on immediately, e.g. in a toilet. After a delay of approx. 1 minute, the fan is switched on. When the light is switched off, the fan continues to run for the time set at the time switch.



t_e = runtime

Switching example: 7LF6 115 energy-saving timer with warning

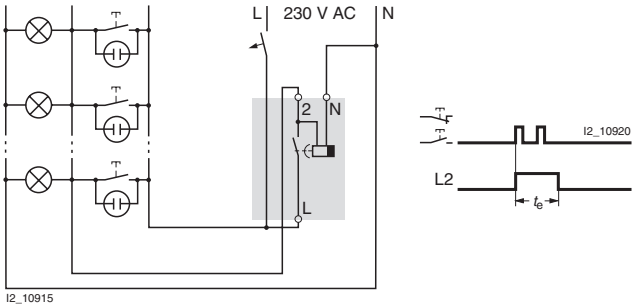
The time switch is connected in the same way as the 7LF6 111 time switch in a 4-wire circuit or 3-wire circuit. The energy-saving timer switches on if pressed once and switches off when it is pressed again. If not switched off manually, it is automatically switched off after the set time, max. 60 minutes. 40 seconds before expiry of the set time, the time switch flashes briefly to warn of an impending off. The timing interval can be switched off before the start of the warning time and can be reset after the start of the warning time.



t_e = runtime

Switching example: 7LF6 110 time switch in 3-wire circuit, L-momentary contact, not resettable

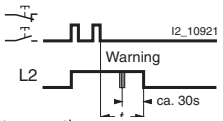
Circuit for new installation with shared cable routing for pushbuttons and lights. The time switch can only be restarted after the set time expires.



t_e = runtime

Switching example: 7LF6 113 time switch with warning

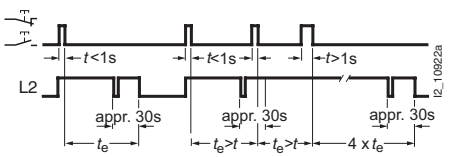
The time switch is connected in the same way as the 7LF6 111 time switch in a 4-wire circuit or 3-wire circuit. 40 seconds before expiry of the set time, the time switch flashes briefly to warn of an impending off.



t_e = runtime

Switching example: 7LF6 114 lighting time switch with warning

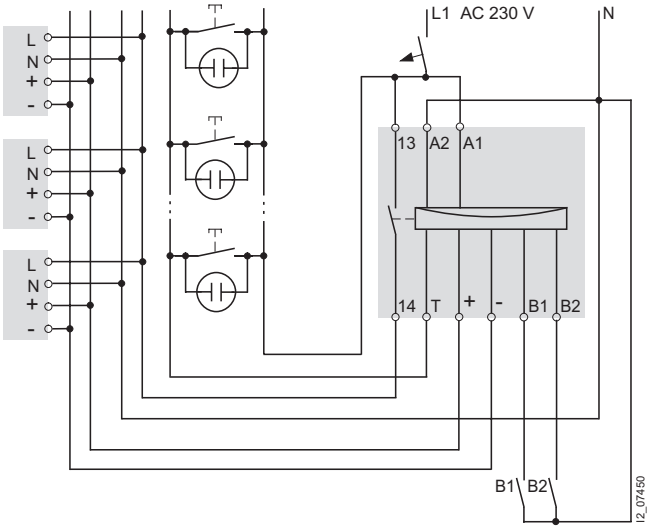
The time switch is connected in the same way as the 7LF6 111 time switch in a 4-wire circuit or 3-wire circuit. When pressed, the lighting timer switches on for the set runtime, up to 5 minutes. If the switch is pressed for more than one second, the light is switched on for four times the set time, i.e. up to 20 minutes. The last press of the pushbutton is decisive. 40 seconds before expiry of the set time, the time switch flashes briefly to warn of an impending off. The timing interval restarts each time the button is pressed.



t_e = runtime

Schematics

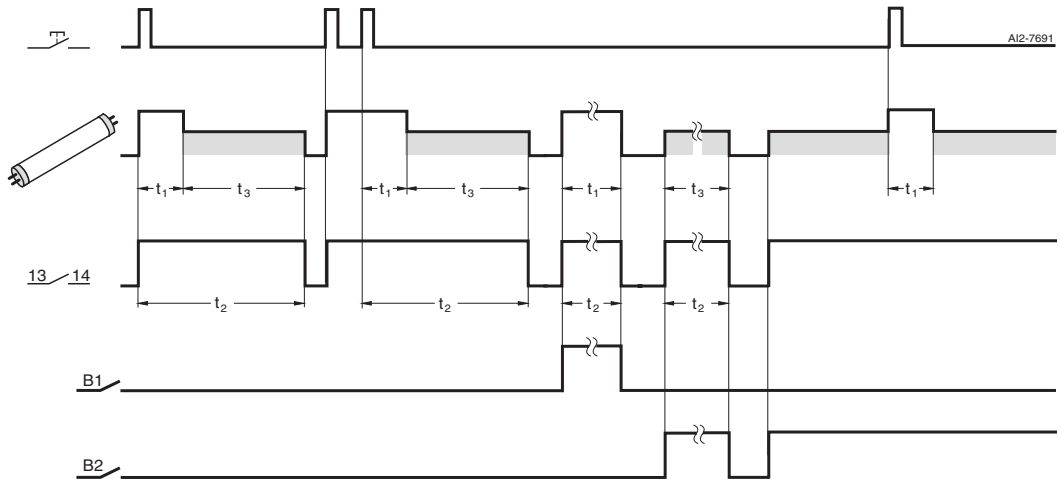
Switching example: 5TT1 303 ECG control switch



The device is fitted with a direct voltage input for the control of an 5LZ. ...-4 ECG dynamic. When the pushbutton is actuated, the power supply is released and the ECG dynamic is brightened, depending on the setting of the time switch, for up to 10 minutes.

On expiry of this time, the ECG dynamic is dimmed according to the set dimmer level, if pressed again it brightens again. If the switch is not pressed for 30 minutes, the lighting switches off completely. In addition to these functions, the dimming time and brightness period can also be controlled using a separate pushbutton or time switch over control inputs B1 and B2.

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



t_1: Bright phase t_2: Operating period t_2: Dim phase

Corridor lighting in homes for the elderly

At mealtimes, from 5 - 7 p.m., the light in the corridors can be permanently switched on using a time switch (contact B1). Between 7 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 – 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 switch the light to "emergency operation", i.e. permanently bright, using switch B1 (no time limit of bright period).

Timers for Industrial Applications

5TT3 1 timers

Benefits

	Multifunction timers 5TT3 185	Delay timers 5TT3 181	Wiping timers 5TT3 182	Flashing timers 5TT3 183	Off-delay timers 5TT3 184
Setting range Number	0.02 s ... 300 h 8	0.25 ... 640 s 4	1 ... 10 s 1	1 ... 10 s 1	0.5 ... 10 s 1
LED for switch position indication	•	•	•	•	•
LED for operation indication	•	–	–	–	–
Large voltage range	•	–	–	–	–
Programmable	•	–	–	–	–
Repeat accuracy ≤1%	–	–	–	•	•

Function

5TT3 185

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 the multiplication factors between the individual time ranges are exact.

Example:
Delay time to be set: 40 min.
Using the fine setting, this delay time can be set within the time 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, we will switch to the time range 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 time 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 by removing the control voltage continued again (time addition).

Control input B1

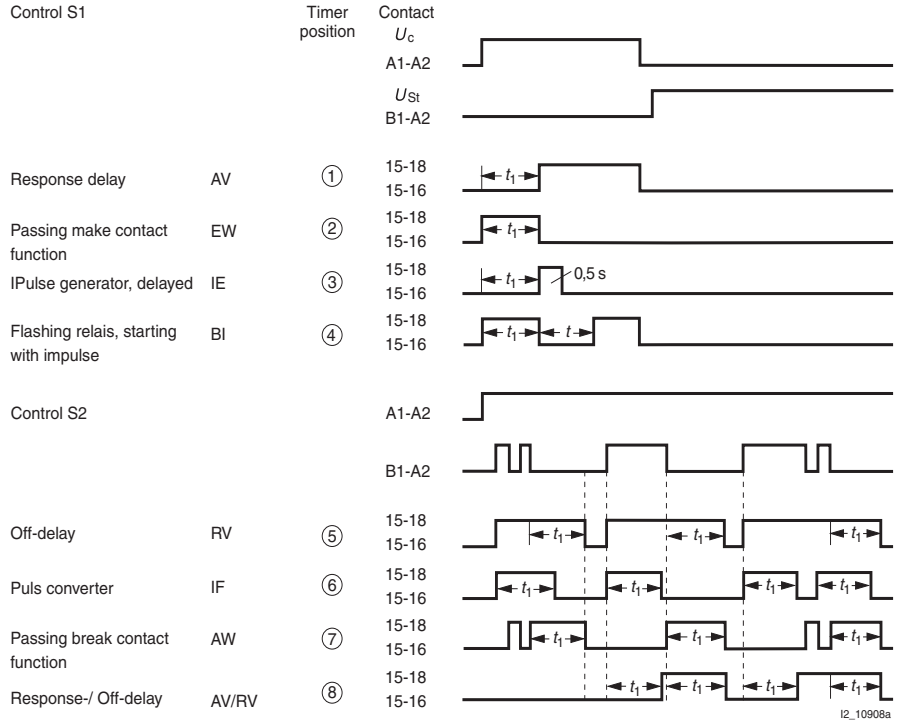
The functions RV, IF, AW, AV/RV can be controlled using the control input B1 (+) with potential against terminal A2. The auxiliary voltage of terminal A1 can be used for this purpose, as well as any other voltage within the range 12 ... 240 V AC/DC. The operation of parallel loads (e.g. contactors) from B1 (+) to A2 is also permissible.
If voltage is simultaneously applied to the control input B1 (+) and A1 for the IF function, this triggers an output pulse with the set time interval t1.

Technical specifications

Data acc. to DIN VDE 0435-110, EN 60255				5TT3 185	5TT3 181 5TT3 182 5TT3 183	5TT3 184
Rated control supply voltage U_c			V AC V DC	12 ... 240 12 ... 240	220 ... 240	110 ... 240 110 ... 240
Operating range			× U_c	0.8 ... 1.1		
Rated frequency			Hz	45 ... 400	50/60	
Rated power dissipation P_v			VA	approx. 1.5	approx. 5	approx. 1
Setting ranges				please refer to time setting ranges and time sequences		
Recovery time			ms	15 ... 80	approx. 40	approx. 100
Rated impulse withstand voltage U_{imp}	input/output		kV	> 4		
Rated operational voltage U_e			V AC	250		
Rated operational current I_e			A	4	8	5
Contact gap minimum contact load			mm V; mA	µ-contact 10; 300		
Electrical service life	in switching cycles at AC-15		1a	1.5×10^5 –	– 1.5×10^5	1.5×10^5 –
Terminals	+/- screw (Pozidrive)			2		
Conductor cross-sections	rigid flexible with sleeve	max. min.	mm^2 mm^2	2 × 2.5 2 × 1.5		
Permissible ambient temperature			°C	-40 ... +60		
Resistance to climate	acc. to EN 60068-1			40/60/4		

Technical specifications

5TT3 185 multifunction timer

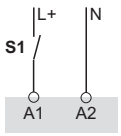


Possible time setting ranges *t*

0.02	...	1 s
0.06	...	6 s
0.3	...	30 s
0.03	...	3 min
0.3	...	30 min
3	...	300 min
0.3	...	30 h
3	...	300 h

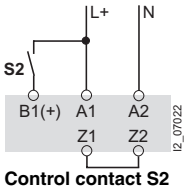
① AV =Response delay
② EW =Passing make contact function
③ IE =Pulse generator, delayed
④ BI =Flashing relay, Begin with pulse
⑤ RV =Off delay
⑥ IF =Pulse shape
⑦ AW =Passing break contact function
⑧ AV/RV=Response/off delay

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 switch contact S1.

Control S2



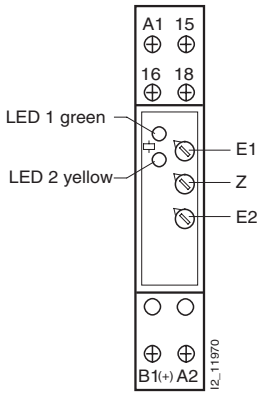
Control contact S2
The functions: off delay, pulse shape, passing break contact function, response and off delay are triggered by continuous power supply over the control contact S2 between A1 and B1 (+).

Operator interface

LED 1 status display
LED 2 switch position indication
E1 time range adjuster
Z fine adjuster for time ranges
E2 function settings for timing interval

Device indications

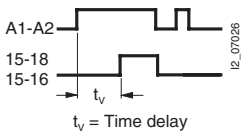
LED 1 lights up if operational voltage is applied (green)
LED 2 indicates the timing interval and state of the equalizing relay (yellow)
- Steady light
  - off output relay not activated, no timing interval
  - on output relay not activated, no timing interval
- Flashing light
  - short on, long off
    output relay not activated, timing interval
  - long on, short off
    output relay activated, timing interval



Front view

LED 1 green: status display
LED 2 yellow: Switch position indication
E1: time range adjuster
Z: fine adjuster for time ranges
E2: function settings for timing interval

5TT3 181 delay timer



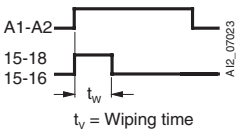
t_v = Time delay

response delay

Possible time setting ranges t_v

0.25 s	...	2.5 s
1 s	...	10 s
8 s	...	80 s
64 s	...	300 s

5TT3 182 wiper timer



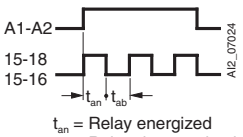
t_v = Wiping time

wiping function

Possible time setting ranges t_w

1 s ... 10 s

5TT3 183 flashing timer



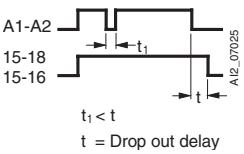
t_{an} = Relay energized
t_{ab} = Relay de-energized

flashing function

Possible joint time setting range of t_{an} and t_{ab}

1 s ... 10 s

5TT3 184 off delay time switch



$t_1 < t$
t = Drop out delay

off-delay

Possible time setting range t_1

1 s ... 10 s

Timers for Industrial Applications

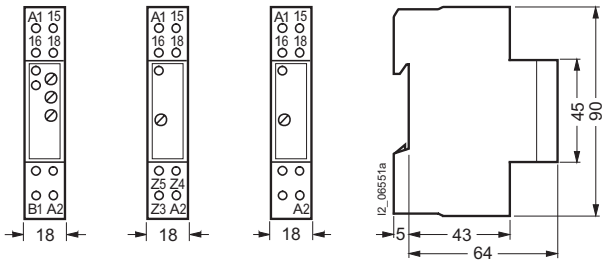
5TT3 1 timers

Selection and ordering data

		U_e	I_e	U_c	MW	Order No.		Weight 1 item	PS*/ P. unit
		V AC	A	V				kg	Items
	**Multifunction timer with transparent cap**								
	programmable for: response delay; passing make contact function; delayed pulse generator; clock-pulse relay starting with impulse; off-delay; pulse converter; passing break contact function; response/off-delay								
	1 CO contact	250	4	12 ... 240 DC 12 ... 240 AC	1	**5TT3 185**		0.065	1
	Delay timer with transparent cap								
	1 CO contact	250	8	220 ... 240	1	**5TT3 181**		0.100	1
	Wiping timer with transparent cap								
	1 CO contact	250	8	220 ... 240	1	**5TT3 182**		0.100	1
	Flashing timer with transparent cap								
	pulse duration is equal to idle time								
	1 CO contact	250	8	220 ... 240	1	**5TT3 183**		0.100	1
	Off-delay timer with transparent cap								
	1 CO contact	250	5	110 ... 240 AC 110 ... 240 DC	1	**5TT3 184**		0.100	1

Dimensional drawings

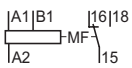
5TT3 185 | 5TT3 182, 5TT3 183, 5TT3 184 | 5TT3 181



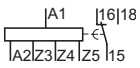
Schematics

Circuit diagrams

5TT3 185



5TT3 181



5TT3 182

5TT3 183
5TT3 184

* You can order this quantity or a multiple thereof.

Overview

	Mechanical time switches 7LF5 110, 7LF5 150	7LF5 201, 7LF5 211	7LF5 205, 7LF5 206, 7LF5 207, 7LF5 216, 7LF5 217
Minimum switching interval • Day disk • Week disk • Hour disk	 15 min - -	 30 min - -	 30 min 3 h 1.25 min
Manual switch	ON/CLOCK/OFF	CLOCK/ON	ON/CLOCK/OFF
Sealable transparent cap	•	•	•
With terminal cover	•	–	–
Suitable for the switching of safety extra-low voltages	•	•	–

Application

Mechanical time switches can be used for all applications of digital time switches, provided that the minimum switching intervals are sufficiently long. The switching control pins can be set without the use of tools.

Function

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 time switch 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.

7LF5 1, 7LF5 2 mechanical time switches

Technical specifications

Data acc. to EN 60730-1, EN 60730-2-7				7LF5 201	7LF5 205	7LF5 206	7LF5 207	7LF5 110
Rated control supply voltage U_c			V AC	220 ... 240				
Operating range	at 50 Hz		× U_c	0.85 ... 1.1				
Operating mode				synchronous				
Rated frequency			Hz	50				
Power loss	drive contact		VA VA	3.1 1.7	1 1			
Time program				day		week	hour	day
Minimum switching interval			min	30		120	1.2	15
Contact	µ-contact			NO contact	CO contact			
Rated operational voltage U_e			V AC	250				
Rated operational current I_s	for p. f. = 1 for p. f. = 0.6		A A	16 4				8
Different phases	actuator/contact permissible			yes	no			yes
Safe isolation	creepage and clearances actuator/contact		mm	8	–			8
Electrical isolation	creepage and clearances actuator/contact		mm	–	4			–
Rated impulse withstand voltage U_{imp}	actuator/contact		kV	> 4	> 2.5			> 4
Minimum contact load			V; mA	20; 100	10; 100			20; 100
Incandescent lamp load			W	1 000	1350			
Clock error per day				synchronous				
Terminals	+/- screw (Pozidrive)			1				
Conductor cross-sections	rigid flexible with sleeve	min.	mm^2 mm^2	1.5 ... 4 1 × 0.5				
Permissible ambient temperature			°C	-25 ... +55				
Protection class	acc. to EN 60730-1			II				
Degree of protection	acc. to EN 60529			IP20				
Resistance to climate	acc. to EN 60068-1			FW 24				

Data acc. to EN 60730-1, EN 60730-2-7				7LF5 211	7LF5 216	7LF5 217	7LF5 150
Rated control voltage U_c			V AC	220 ... 240			
Operating range	at 50 Hz		× U_c	0.85 ... 1.1			
Operating mode				quartz			
Rated frequency			Hz	50 ... 60	50		
Power loss	drive contact		VA VA	1 1			
Time program				day		week	day
Minimum switching interval			min	30		120	15
Contact	µ-contact			NO contact	CO contact		
Rated operational voltage U_e			V AC	250			
Rated operational current I_s	for p. f. = 1 for p. f. = 0.6		A A	16 4			8
Different phases	actuator/contact permissible			yes	no		yes
Safe isolation	creepage and clearances actuator/contact		mm	8	–		8
Electrical isolation	creepage and clearances actuator/contact		mm	–	4		–
Rated impulse withstand voltage U_{imp}	actuator/contact		kV	> 4	> 2.5		> 4
Minimum contact load			V; mA	20; 100	10; 100		20; 100
Incandescent lamp load			W	1 000	1350		
Clock error per day	typ. at +20°C		s	±2.5			
Power reserve typical			h	50			150
Minimum loading time	for power reserve		h	100			70
Terminals	+/- screw (Pozidrive)			1			
Conductor cross-sections	rigid flexible with sleeve	min.	mm^2 mm^2	1.5 ... 4 1 × 0.5			
Permissible ambient temperature			°C	-25 ... +55			
Protection class	acc. to EN 60730-1			II			
Degree of protection	acc. to EN 60529			IP20			
Resistance to climate	acc. to EN 60068-1			FW 24			

Selection and ordering data

	U_e	I_e	U_c	MW	Order No.	Weight 1 item	PS*/ P. unit
	V AC	A	V AC			kg	Items
Synchronous time switches without power reserve							
 **Synchronous time switch with transparent cap**							
Day disk, 1 NO contact	250	16	220 ... 240	1	**7LF5 201**	0.120	1
 Day disk, 1 CO contact	250	16	220 ... 240	3	**7LF5 205**	0.160	1
Week disk, 1 CO contact	250	16	220 ... 240	3	**7LF5 206**	0.160	1
Hour disk, 1 CO contact	250	16	220 ... 240	2	**7LF5 207**	0.160	1
 **Synchronous time switch for wall mounting**							
Day disk, 1 CO contact	250	16	220 ... 240	4	**7LF5 110**	0.120	1
Quartz time switch with power reserve							
 **Quartz time switch with transparent cap**							
Day disk, 1 NO contact	250	16	230	1	**7LF5 211**	0.160	1
 Day disk, 1 CO contact	250	16	230	3	**7LF5 216**	0.160	1
Week disk, 1 CO contact	250	16	230	3	**7LF5 217**	0.160	1
 **Quartz time switch for wall mounting**							
Day disk, 1 CO contact	250	16	230	4	**7LF5 150**	0.120	1

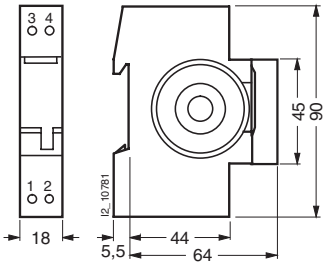
8

* You can order this quantity or a multiple thereof.

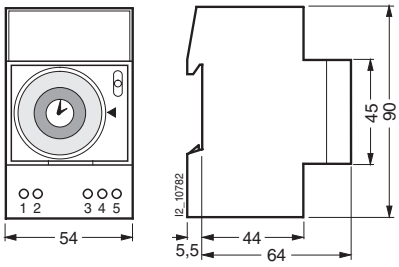
7LF5 1, 7LF5 2 mechanical time switches

Dimensional drawings

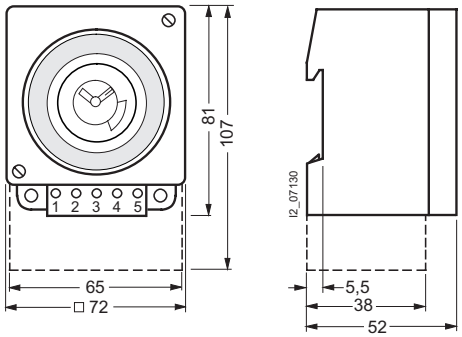
7LF5 201
7LF5 211



7LF5 205
7LF5 206
7LF5 207
7LF5 216
7LF5 217



7LF5 110
7LF5 150



Schematics

Circuit diagrams

7LF5 201
7LF5 211

7LF5 205
7LF5 206
7LF5 207
7LF5 216
7LF5 217

7LF5 110
7LF5 150