

7LF5 3 mechanical time switches

Much more than a time switch



Today, time switching is a matter of course.

Making energy savings by means of time switching has become a matter of course. Nowadays, many process sequences would be inconceivable without time switching. It could also be said that time switching satisfies a basic requirement.

If the minimum switching interval is sufficient, mechanical time switches are always used. The press-down tabs can be set to a minimum interval of 15 minutes, without the need to use a tool. The devices are available with overall heights of 55 mm and 70 mm.

They can be used to switch systems or devices or for functions such as: irrigation plants, hothouses, garden systems, swimming pools, filter systems, canopy controls, break signals, bell chimes, shop-window lighting, illuminated advertising, sports-hall lighting, traffic-light controls, street lighting, illuminated signs, office lighting, stairway and entrance lighting, object lighting, preheating of industrial furnaces, injection-molding machines, ovens, heating systems, air-conditioning systems, fans and ventilation systems, heating and circulating pumps, and sauna systems.

All devices bear the VDE mark of conformity and are approved according to UL.

Time switches with new functions for use in residential and non-residential buildings and industrial applications

- The time switch activates the automatic setting function automatically during commissioning. It is not necessary to set the pointer or make a daylight-saving adjustment manually.
- The automatic setting function also begins to operate automatically again following a power failure. This eliminates the need to reset the time manually.
- The precision quartz movement is so precise that when all clock errors are added together, an approximate accuracy of ± 1 min/year is achieved. This also means that the time switch does not have to be readjusted during operation.

BETA Low-Voltage Circuit Protection

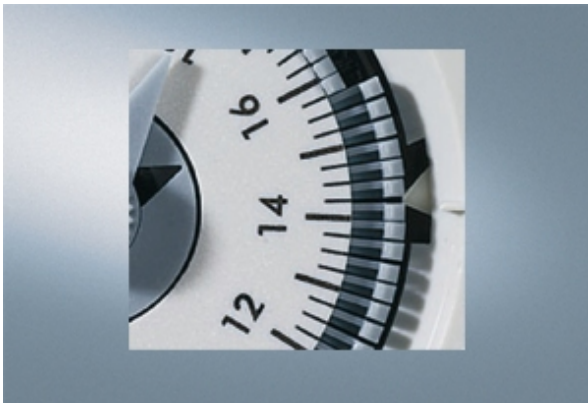
Timers

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Automatic setting function

The automatic setting function makes installing the 7LF5 301-4 and 7LF5 301-5 time switches quick and easy. During commissioning in fast mode, these time switches set themselves to the correct day and time automatically. The relevant daylight-saving adjustment is also made automatically. Another advantage is that, once the supply voltage is reconnected following a power failure, the correct time and day are reset using quartz precision.



Precision quartz movement

Accuracy: The internal precision quartz movement has an accuracy of ± 1 min/year. Previously, only digital time switches have been able to offer this level of operational accuracy and automatic reliability.

Cost saving due to 15-minute minimum movement step: The switching times can be set in the 15-minute signaling time slot with a minimum switching interval of 30 minutes.

Without power reserve

Synchronous time switch: The switch-actuating wheel is driven by a synchronous motor, thus it is frequency-dependent. If the line frequency is not stable, these devices cannot be used. In the event of a power failure, the time switch comes to a stop.



LED display

Adjustment data for Central Europe are stored in the switch and an LED display provides information about the current status.

So, all you have to do is unpack, snap on, connect, and set the desired switching times, all without the need for tools. This saves you both time and money.



Clear design

The clear design aids understanding. Switching times can be easily identified.

As regards the weekly time switch, a minimum switching interval of 240 minutes results in a movement step of only 120 minutes.

With power reserve

Quartz time switch: A quartz electronic circuit supplies the drive with a stabilized frequency, thus ensuring that the time switch is not dependent on the line frequency. In the event of a power failure, the time switch continues to run on its power reserve.

Technical Data

Data in accordance with DIN EN60730-1, DIN EN60730-2-7	Synchronous time switches without power reserve					Quartz time switches with power reserve					
	7LF5 300-1	7LF5 300-5	7LF5 300-6	7LF5 300-7	7LF5 301-0	7LF5 301-1	7LF5 301-4	7LF5 301-5	7LF5 301-6	7LF5 301-7	7LF5 305-0
Duty type	Synchronous					Quartz					
Time program	Day	Day	Week	Hour	Day	Day	Day	Week	Day	Week	Day
Supply											
Rated control supply voltage U_c	V AC	230				230					
Operating range	% U_c	-15/+10				-15/+10					
Rated frequency	Hz	50				50					
Frequency range	Hz	50				50/60					
Rated power loss P_v	W	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 $\cos\varphi = 1$	A	16				16					
• At $\cos\varphi = 0.6$	A	4				4					
Contact		NO contact	Change-over contact	Change-over contact	NO contact	NO contact	NO contact	Change-over contact	Change-over contact	Change-over contact	Change-over contact
• Mechanical operating cycles		20,000,000				20,000,000					
• Electrical operating cycles (at $\cos\varphi = 1$)		100,000				100,000					
Minimum switching capacity	V; mA	4; 1				4; 1					
Filament-lamp load	A	5				5					
Fluorescent lamps											
• At 7 μ A	VA	60				60					
• Uncorrected	VA	1,400				1,400					
Safety											
Different phases											
• Drive/contact permissible		Yes				Yes					
Electrical isolation											
• Creepages and air clearances Drive/contact	mm	8/6				8/6					
Rated impulse withstand voltage U_{imp} Drive/contact											
	kV	4				4					
• EMC: burst in accordance with IEC 61000-4-4	kV	> 4.4				> 4.4					
• EMC: surge in accordance with IEC 61000-4-5	kV	> 2.0				> 2.0					
• Electrostatic discharge in accordance with IEC61000-4-2	kV	> 8.0				> 8.0					
Power-reserve memory	a	–				100 h	6	100 h			
• Minimum charging time	h	–				48	–	48			
• Battery type		–				NiMH	Li primary cell		NiMH		
• Service life At 20°C	a	–				6	10		6		
At 40°C	a	–				5					

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Overvoltage category in accordance with DIN EN 61010-1	III					III							
Function													
Minimum switching interval	min	30	30	240	5	30	30	30	240	30	240	30	
Movement step	min	15	15	120	37.5 s	10	15	15	120	15	120	10	
Switching accuracy	+/-min	5	5	30	0.2	5	5	5	30	5	30	5	
Daily clock error	s	Line-synchronous					+/- 2.5	+/- 60/year			+/- 2.5	+/- 2.5	
Connectors													
Supply terminals Bolt (Pozidriv)	PZ 1					PZ 1							
Conductor cross-sections of main conducting paths													
• Rigid max.	mm ²	4					4						
• Rigid min.	mm ²	1.5					1.5						
• Flexible with sleeve	mm ²	2.5					2.5						
• Flexible without 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 in accordance with DIN EN60068-1	EN 60 730-1					EN 60 730-1							
Degree of protection in accordance with DIN EN60529	IP20					IP20							
Safety class in accordance with DIN EN60730-1	II					II							

Selection and ordering data

	U_e	I_e	U_c	TE	Bestell-Nr.	Gewicht 1 Stück etwa kg	PKG ¹⁾ / VPE Stück	
	AC V	AC A	AC V					
Synchronous time switch without power reserve								
Synchronous time switch 1 WM								
	• Day disk							
	1 NO contact	250	16	230	1	7LF5 300-1	0.850	1
	1 NO contact, T 55 mm			230		7LF5 390-1		1
	• Hour disk, 1 WM							
	1 NO contact	250	16	230	1	7LF5 300-7	0.850	1
Synchronous time switch 3 WM								
	• Day disk							
	1 changeover contact	250	16	230	3	7LF5 300-5	0.155	1
	1 changeover contact	250	16	230	3	7LF5 300-6	0.155	1
	• Week disk							
	1 changeover contact	250	16	230	AP	7LF5 301-0	0.220	1
Quartz time switch with power reserve								
Quartz time switch 1 WM								
	• Day disk							
	1 NO contact	250	16	230		7LF5 301-1	0.900	1
	1 NO contact, T 55 mm			230		7LF5 391-1		1
Quartz time switch 3 WM								
	Automatic time setting during commissioning							
	Automatic daylight-saving adjustment using quartz movement							
	Accuracy +/- 0.2 s/day							
	Power reserve (short-term backup in the event of a power failure) 5 years							
	• Day disk							
1 changeover contact	250	16	230	3	7LF5 301-4	0.165	1	
	• Week disk							
	1 changeover contact	250	16	230	3	7LF5 301-5	0.165	1
Quartz time switch 3 WM								
	Accuracy +/- 2.5 s/day							
	• Day disk							
	1 changeover contact	250	16	230	3	7LF5 301-6	0.165	1
	1 changeover contact, T 55 mm			230		7LF5 391-6		1
	• Week disk							
1 changeover contact	250	16	230	3	7LF5 301-7	0.165	1	
1 changeover contact, T 55 mm			230		7LF5 391-7		1	
Synchronous time switch for wall mounting								
	• Day disk							
	1 changeover contact	250	16	230	AP	7LF5 305-0	0.230	1

¹⁾ This quantity or a multiple thereof can be ordered.

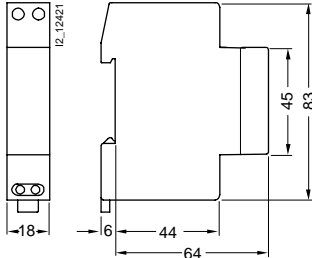
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Dimension drawings

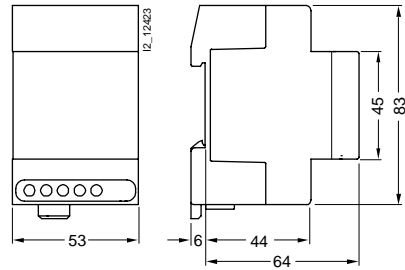
7LF5 300-1
7LF5 300-7

7LF5 301-1

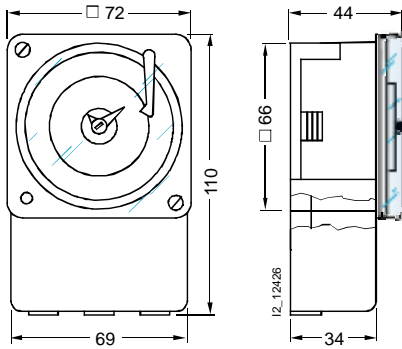


7LF5 300-5
7LF5 300-6

7LF5 301-4
7LF5 301-5
7LF5 301-6
7LF5 301-7



7LF5 301-0
7LF5 305-0



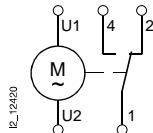
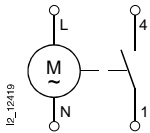
Circuit diagrams

7LF5 300-1
7LF5 300-7

7LF5 300-5
7LF5 300-6

7LF5 301-1

7LF5 301-0
7LF5 301-4
7LF5 301-5
7LF5 301-6
7LF5 301-7
7LF5 305-0



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