

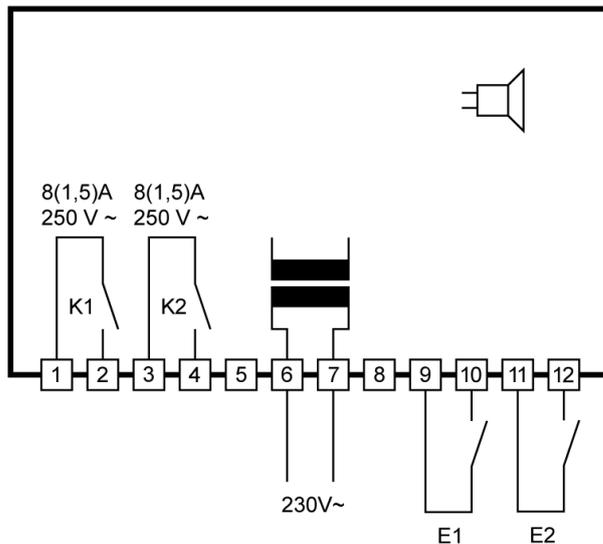
ST710-PCA.07

Timer switch

Order number 900211.002



Wiring diagram



Product description

The freely programmable timer switch has two adjustable derivative timers and two elapsing timers.

Together with the possibility of various parameters, two output contacts and two switching inputs will allow the employment of any applications one can think of. The timer can be started and stopped both with the front buttons and with the switching inputs.

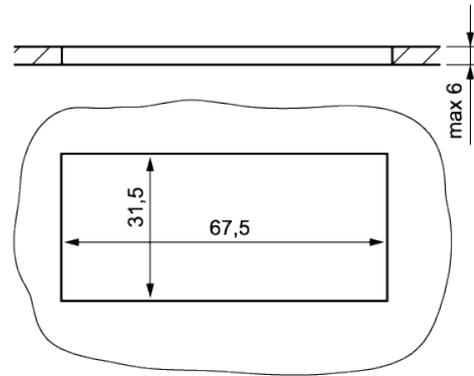
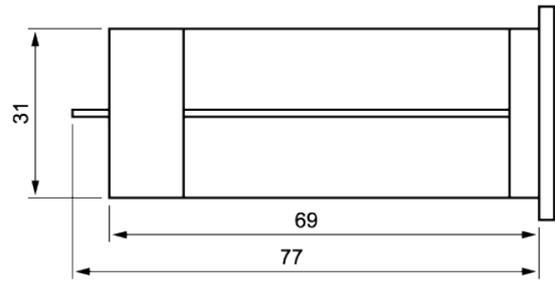
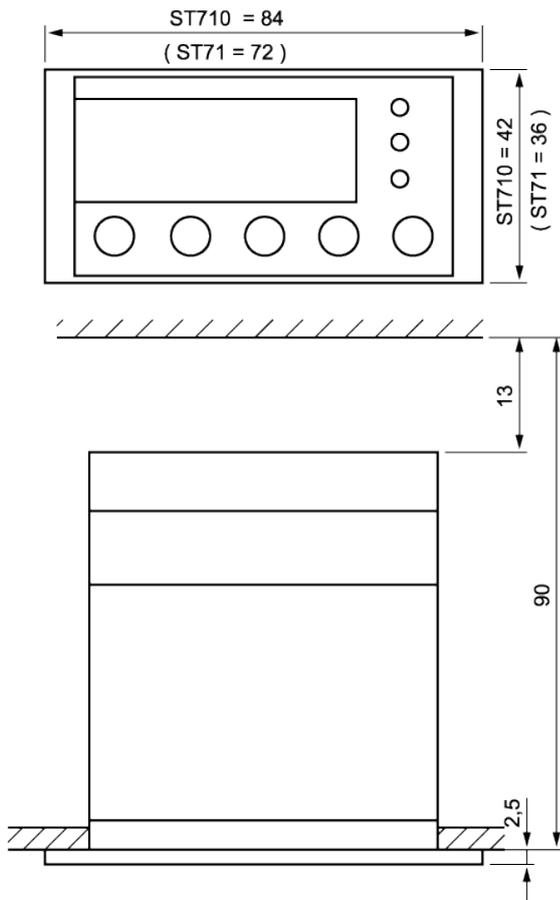
Front size: 84mm x 42mm

Panel cut-out: 67.5mm x 31.5mm

Tightness: Front IP65

Connector: plug and socket

ST 710 (715)... / ST71...



SOFTWARE .07

Adjustment options

**Key 1: UP**

By pressing this key together with the SET key you can increase the parameter or parameter value or scroll the parameter list.

**Key 2: DOWN**

By pressing this key together with the SET key you can decrease the parameter or parameter value or scroll the parameter list.

**Key 3: Set**

Show the operating time t1.
T1 can be adjusted together with the UP or DOWN key.

**Key 4: Start**

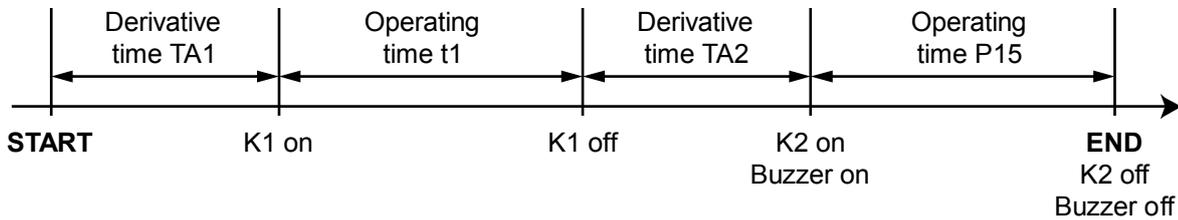
Start of the timer.

**Key 5: Stop**

With this key the timer can be stopped and the buzzer can be cancelled.

Function Description

The timer is always equipped with two output contacts and a buzzer.



The entire process consists of the following successive phases:

- Derivative time TA1 for relay K1 (relay K1 is still inactive)
- Active phase t1 for relay K1
- Derivative time TA2 for relay K2 (the relay K2 is still inactive)
- Active phase P15 for relay K2 (possibly together with the buzzer)

The timer is started with key 4 or switching input E1 (see parameter P10).

Stop the timer at any time with key 5 or switching input E2 (see parameter P11).

The start and stop functions via the switching inputs are edge-controlled, only a change of state in the right direction (see parameters P5 or P6) leads to an action. The most recent command is effective.

Please note that the buzzer function (if activated with P9) is not necessarily connected to the output K2. The buzzer sounds at the end of the timer or at the end of P15, but is active at one of the special functions (P16 = 1) regardless of K2.

Timer and display

As for the operating time t1 it is possible to display the time remaining or the elapsed time (see parameter P12). As for the derivate times, always the respective remaining time is indicated.

If an acknowledgment for K2 provided (see parameter P13), it is indicated until acknowledgment after the timer has elapsed.

If time ranges with colon are selected, the colon is flashing during the timer. For the flashing frequency the following applies:

- During the active phase of the relay K1 the colon flashes every second.
- During the derivate times and during the active phase of the relay K2 the colon flashes with increased frequency.
- When the timer has elapsed the colon stops flashing and remains lit continuously.

It is possible to specify a continuous mode, in which all phases are automatically restarted.

It can be selected (see P17) if the display returns at Stop and after acknowledgment of the set time t1, or remains on the respective past value in the display mode.

After the timer stops and after an acknowledgment the display can show again the operating time t1 or the respective elapsed timer value is indicated, depending on parameter P17.

First control level:

Adjusting the operating time

By pressing the SET-key the operating time t1 is indicated.

By additionally pressing the UP- or DOWN-key the time can be set.

Parameter	Function	Adjustable range	Standard setting	Customer setting
t1	Operating time (setpoint) K1	see P1	1:11 hrs	

Second control level (P-parameter):

Adjusting of timer parameters

Simultaneously pressing the UP and DOWN key for at least 4 seconds opens an intermediate menu with "PA0" in the display.

If there is no password specified for access to the actual parameter list (= factory setting), a short press of the SET key opens the timer parameters, starting with P1

With the UP and DOWN keys the list can be scrolled in both directions.

Pressing the SET key will give you the value of the respective parameter. Pressing also the UP or DOWN key at the same time the value can be adjusted.

Return to the initial position takes place automatically, if no key is pressed for 60 seconds, or by simultaneously pressing the UP and DOWN key for approx. 4 seconds

Parameter	Function	Adjustable range	Standard setting	Customer setting
P1	Operating range t1 (K1)	0: 0...99.9 sec. 1: 0...99 min. 59 sec. 2: 0...99 Std. 59 min.	2	
P2	Operating range TA1, TA2	0: 99.9 sec. 1: 99 min. 59 sec.	0	
P3	Derivative time TA1	0... see P2	0 sec.	
P4	Derivative time TA2	0... see P2	0 sec.	
P5	Function input E1 (START)	0: start with closed contact 1: start with opened contact	0	
P6	Function input E2 (STOP)	0: stop with closed contact 1: stop with opened contact	0	
P7	Function output K1	0: activated during timer 1: deactivated during timer	0	
P8	Function output K2	0: activated during timer 1: deactivated during timer	0	
P9	Buzzer function K2 (after t1+TA2 or after P15, see P13)	OFF: no buzzer 1: continuous 2: intermittent	1	
P10	Trigger start function	0: key or switching input 1: only key 1: only switching input	0	
P11	Trigger stop function	0: key or switching input 1: only key 1: only switching input	0	
P12	Display mode operating time t1	0: countdown 1: elapsed time	0	
P13	Stop of K2 (no timer P15 for K2 if P13=0 or P13=1)	0: with STOP 1: with STOP or START 2: P15 starts after t1+TA2, no restart 3: P15 starts after t1+TA2, restart	0	

Parameter	Function	Adjustable range	Standard setting	Customer setting
P14	Operating range K2	0: 0...99.9 sec. 1: 0...99 min. 59 sec.	1	
P15	Operating time K2	0... see P14	2 sec.	
P16	Special functions	0: Normal function 1: both relays as K1, K2 inactive during timer 2: both relays as K2, K1 inactive during timer	0	
P17	Display after Stop and buzzer acknowledgment	0: elapsed time 1: operating time t1	0	
Pro	Show program version	----	----	

Parameter description

P1: Operating range K1

There are three operating ranges available: seconds (with 1/10 of a second), minutes/seconds, and hours/minutes.

P5: Function input E1

“Start with closed contact” means that closing the switching input E1 starts the timer.

“Start with opened contact” means that opening the switching input E1 starts the timer.

P6: Function input E2

Same function as parameter P5, regarding the Stop function.

P7: Function output K1

P8: Function output K2

The setting “activated during timer” means the respective relay is closed (energized) during the timer. In the remaining time it is opened (de-energized).

The setting “deactivated during timer” means the respective relay is opened during the timer. In the remaining time it is closed.

P9: Buzzer function K2

The buzzer can be activated together with the relay K2. It sounds continuously or intermittently.

With the parameter setting P16 = 1 the buzzer sounds independently of the output K2.

P10: Trigger start

The start function can be triggered either by the switching input E1 and/or by the key 4.

This is regardless of the trigger of the stop function.

P11: Trigger stop

The stop function can be triggered either by the switching input E2 and/or by the key 5.

This is regardless of the trigger of the start function.

P12: Display mode operating time t1 (K1)

With the setting “countdown” the current time goes from t1 to 0.

With the setting “elapsed time” the current time goes from 0 up to t1.

P13: Stop of timer K2

0: There is no specific operating time for K2; K2 is active until pressing the STOP key

1: Same as “0”, but it’s possible to do a restart without previous stop.

2: Operating time in parameter P15 will take effect; after its expiration the timer stops.

3: Operating time in parameter P15 will take effect; after its expiration the timer restarts. The timer is now in continuous operation until a manual stop.

P14: Operating range K2

There are two operating ranges available: seconds (with 1/10 of a second) and minutes/seconds.

P15: Operating time K2

This parameter sets the operating time for K2

P16: Special functions

For special use cases it is possible to activate both relays during the operating time t1 (then inactive during P15) or vice versa.

Please note that the buzzer is linked to the final sequence stop, i.e. to P15. If P16 = 1 it will sound regardless of the output K2.

P17: Display after Stop and buzzer acknowledgment

With P17=1 the display shows the operating time 1 after Stop or acknowledgment of the buzzer.

Pro: Show program version

The value cannot be changed

Status- and error messages

Display	Cause	Remedy
Flashing colon	Timer was started	
Buzzer sounds	Timer was terminated	
EP	Error in parameter memory Data loss	Repair

Technical data of ST710-PCA.07

Inputs

E1: external contact, potential-free, timer start function

E2: external contact, potential-free, timer stop function

Outputs

K1: Relay 8(1.5)A 250V, normally-open contact

K2: Relay 8(1.5)A 250V, normally-open contact

Installed buzzer, ca. 85dB

Display

One 4-digit LED-Display, height 13mm, for timer display, colour red

Two LEDs, for status display of the outputs K1 and K2

Power supply

230 V 50/60 Hz, power consumption max. 4VA

Connectors

12-pole plug and socket, spacing 5.0 mm, for cable up to 2.5 mm²

Ambient conditions:

Storage temperature -20°C...+70°C

Operating temperature 0...55°C

Relative humidity max. 75%, without dew

Weight

ca. 300g

Enclosure

Front IP65, IP00 from back

Installation data

Unit is to be installed in an instrument panel.

Front size 84 x 42 mm

Panel cut-out 67.5 x 31.5 mm

Installation depth ca. 85 mm

Mounting by fixing strap.