

Installation timer

Electronic timer from the BT product range offer ideal solutions for industrial applications.

The BT product range provides the following functions:

- Pick-up delay (BTR)
- Pulse emitter (BTTT)
- Multifunction with control input (BTM)
- Multifunction without control input (BTMF)
- Star-delta change-over

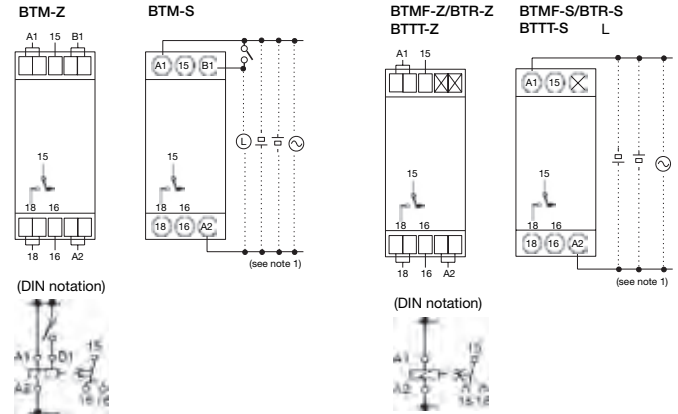
D


Time ranges and power supplies for timer

Using the central knob, you can select the functions of the modules precisely over either 4 or 8 time ranges.

The multi-voltage supply voltage range offers a wide bandwidth for industrial use (see technical data).

Connection of the timer



- Note:
1. Pole numbers are not necessary for DC voltage supply.
 2. The contact symbol of BTM is marked with  as it provides several operating modes and differs from the delayed contacts of conventional timer.



Time ranges

Display of time scale	Time ranges
0.1 s	0.1 to 1.2 s
1 s	1 to 12 s
0.1 min	0.1 to 1.2 min
1 min	1 to 12 min
0.1 h	0.1 to 1.2 h
1 h	1 to 12 h
10 h	10 to 120 h

Note:
If the rotary knob for time adjustment is set to “0”, the output will be switched without delay.

Choosing the time range

The time range is chosen by turning the rotary switch for the ON-time scale and OFF-time scale. The time scales are visible in the display to the left of the rotary switch in the following order: 0.1 s, 1 s, 0.1 m, 1 m, 0.1 h, 1 h.

Note:
The time scales “1 s” and “0.1 h” are given twice. Both adjustments represent the same time scale.

Locking/unlocking of selectors and time setting dial

The rotary switches for the ON/OFF time adjustment and the option selector for the time scale can be locked with the locking key.

This pen-style special tool is available separately. To lock either rotary switches or the option selector, simply insert the locking key into the keyhole bottom right of the rotary switch/option selector and turn it clockwise until the knob/switch is totally covered by the red cover. To unlock, simply turn the key in the opposite direction.

Connection system

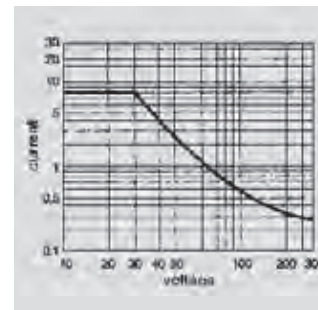
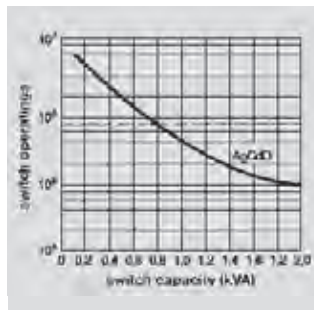
The units offers the following connection technologies:

Screw connection

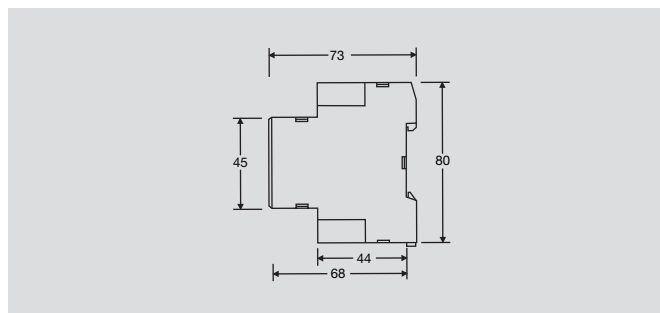
- 2 x 1.5 mm² with wire end ferrule
- 2 x 2.5 mm² without wire end ferrule

Tension clamp connection

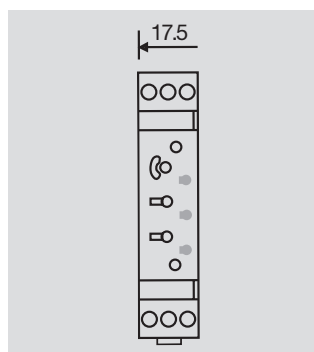
- 2 x 1.5 mm² with wire end ferrule
- 2 x 2.5 mm² without wire end ferrule



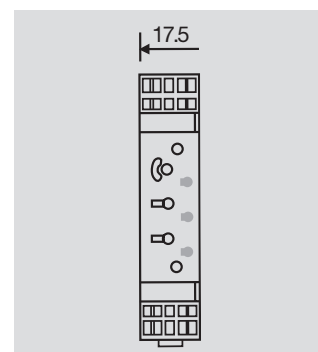
Dimensions



Screw connection



Tension clamp connection



BT-SERIES – Timer

Installation timer

- Screw or tension clamp connection
- LED status indicator Input: voltage present
- Approvals Output: output active
 - UL 508
 - EN 61812-1
 - IEC 60947-5-1
 - IEC 60664-1
 - EN 55011



Type designation:

- B** = Building
- T** = Timer
- R** = Response Delay
- TT** = Two Times
- M** = Multifunction, 8 ranges
- MF** = Multifunction, 4 ranges
- DS** = Delta, Star
- S** = Screw
- Z** = Tension

Input		Contacts hard gold plated
Rated voltage		24 ... 230 V AC, 50/60 Hz, 24 ... 48 V DC
Voltage tolerance		85 ... 110 % of rated voltage
Breaking voltage		Max. 2.4 V AC/DC
Power consumption per type	V AC	21...33 VA at 230 V
	V DC	0.6...1.3 W at 24 V
Reset time		Min. 0.1 s (BTDS: 0.5 s)
Insulation		
Insulation resistance		100 MΩ min., at 500 V DC
Insulation test voltage		
	between input and output, to enclosure	2000 V AC, 50/60 Hz, 1 min
	between non-adjacent contacts	1000 V AC, 50/60 Hz, 1 min
Ingress protection class		IP30, terminal block IP20
Output		
Contact/contact material		1 change-over contact (BTDS 2 NOC) / AgNi 90/10
Switch output		5 A at 250 V AC, resistive load (cos φ=1)
Service life	mechanical min.	10 ⁷ switching cycles (no load, 1800/h)
	electrical min.	10 ⁸ switching cycles (5A at 250 V AC, resistive load at 1800/h)
Time range		0,10 s...120 h
Repetition accuracy		± 1 %
Other data		
Flammability class as per UL 94		V-2
Ambient temperature/storage temperature		-10...+55 °C / -25...+65 °C (without condensation)
Humidity		35...85 % rel. humidity, no condensation
Clamping range (nominal/min/max)	mm ²	
Length x width x height	mm	80.0 x 17.5 x 73.0

Accessories

Designation

Locking and adjusting key

Type

BT Lock Pen

Qty.

1

Order No.

8659840000

Multifunction relay with control input (BTM)



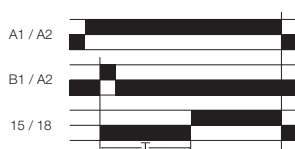
Ordering data

Connection system	Type	Qty	Order No.
Screw connection	BTM-S	1	864770000
Tension clamp	BTM-Z	1	864771000

Functions

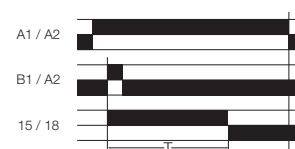
Function A – on-delay

Connect power supply (A1/A2). When the input signal (B1/A2) is applied, the on-delay lasting for the set time T starts. The output R (15/18) connects the load at the end of the set time. To reset, the power supply has to be switched off.



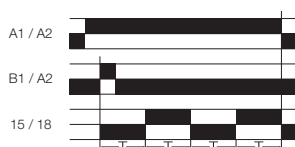
Function E – passing make function

Connect power supply (A1/A2). After applying the input signal (B1/A2), output R (15/18) connects the load immediately. At the end of the set delay time T, output R (15/18) switches the load off again.



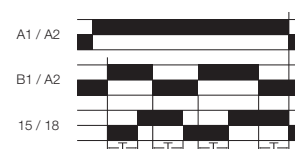
Function B – pulse emitter (starting at normal position)

Connect power supply (A1/A2). After applying the input signal (B1/A2), output R (15/18) switches the load synchronously and alternately between the normal and operated positions within the set time T. In this function, the cycle starts at the normal position.



Function G – on and off-delay function

Connect power supply (A1/A2). Time delay T begins after applying the input signal (B1/A2). At the end of this time, output R (15/18) connects the load (on-delayed). After the input signal (B1/A2) has been switched off again, the output switches the load off again after the set time (off-delayed).



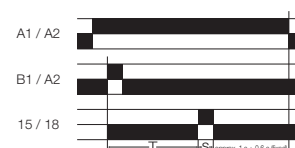
Function B2 – pulse emitter (starting at operated position)

Connect power supply (A1/A2). After applying the input signal (B1/A2), output R (15/18) switches the load synchronously and alternately between the normal and operated positions within the set time T. In this function, the cycle starts at the operated position.



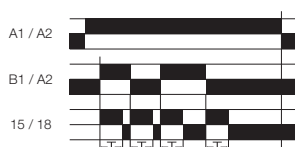
Function J – on-delay with pulse

Connect power supply (A1/A2). Time delay T begins after applying the input signal (B1/A2). At the end of this time, the output R (15/18) connects the load for 1 second.



Function C – interval time-delay

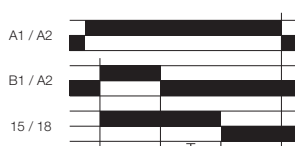
Connect power supply (A1/A2). After applying the input signal (B1/A2), output R (15/18) connects the load for the set time T. Output R (15/18) switches the load off again at the end of time T.



After switching off the input signal (B1/A2), output R (15/18) connects the load again for the set time T. Output R (15/18) switches the load off again at the end of time T.

Function D – off-delay function

Connect power supply (A1/A2). After applying the input signal (B1/A2), output R (15/18) connects the load. The time delay T begins after the input signal (B1/A2) has been switched off. At the end of time T, output R (15/18) switches the load off again.



BT-SERIES – Timer

Timer

Multi-function relay without control input (BTMF)



Ordering data

Connection system	Type	Qty	Order No.
Screw connection	BTMF-S	1	8647680000
Tension clamp	BTMF-Z	1	8647690000

Timer (BTR)



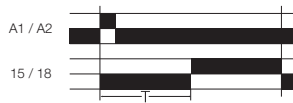
Ordering data

Connection system	Type	Qty	Order No.
Screw connection	BTR-S	1	8647720000
Tension clamp	BTR-Z	1	8647730000

Functions

Function A – on-delay

When the input signal (A1/A2) is applied, the on-delay lasting for the set time T starts. The output R (15/18) connects the load at the end of the set time. To reset, the power supply has to be switched off.



Functions

Function A – on-delay

When the power supply is connected (A1/A2), the on-delay lasting for the set time T starts. The output R (15/18) connects the load at the end of the set time.



D

Function B2 – pulse emitter (starting at operated condition)

After applying the input signal (A1/A2), output R (15/18) switches the load synchronously and alternately between the normal and operated positions within the set time T. In this function, the cycle starts at the operated position.



Function E – passing make function

After applying the input signal (A1/A2), output R (15/18) connects the load immediately. At the end of the set delay time T, output R (15/18) switches the load off again.



Function J – on-delay with pulse

Time delay T begins after applying the input signal (A1/A2). At the end of this time, the output R (15/18) connects the load for 1 second.



Timer (BTTT)



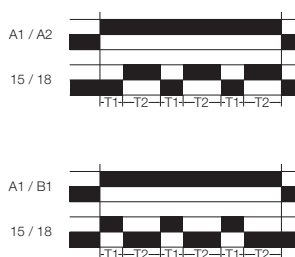
Ordering data

Connection system	Type	Qty	Order No.
Screw connection	BTTT-S	1	8647740000

Functions

Function BTTT – pulse emitter

When the power supply is connected (A1/A2), the repeat cycle begins with two independently adjustable times. The standard setting is to start at the normal position. A bridge between connections A1 and A2 allows the module to start at the operated position.



Timer (BTDS)



Ordering data

Connection system	Type	Qty	Order No.
Screw connection	BTDS-S	1	8647660000
Tension clamp	BTDS-Z	1	8647670000

Functions

Star-delta changeover

After connecting the power supply, output R1 (17/18) connects immediately. At the end of time T1, output R1 (17/18) switches off and time T2 starts. At the end of time T2, output R2 (27/28) connects. After switching off the power supply, output R2 (27/28) switches off.

