Weidmüller ⚡

BT series
TIMER BTR-S

The BTR installation relay is a timing relay with an adjustable pickup delay.
After connecting the power supply, the set time T begins.
The timing relay is built into an Insta enclosure just 17.5 mm wide.
The relay contact is designed as a changeover contact with 250 V/5 A switching capacity.

General ordering data

Order No.	8647720000
Type	TIMER BTR-S
Version	BT series, Timing relay, No. of contacts: 1, CO contact, AgNi 90/10, Rated control voltage: 24...230 V AC, 24...48 V DC, Continuous current: 5 A, Screw connection
GTIN (EAN)	4032248308927
Qty.	10 pc(s).

Creation date July 31, 2012 5:28:00 PM CEST

Catalogue status 20.05.2012 / We reserve the right to make technical changes.

1

BT series
TIMER BTR-S

Technical data

Ratings

Conductor connection system	Screw connection	Flammability class UL 94	V-2
Humidity	35...85 % rel. humidity, no condensation		

Dimensions

Length	80 mm	Width	17.5 mm
Height	73 mm	Net weight	74 g

Temperatures

Operating temperature	-20 °C...+50 °C	Storage temperature	-25 °C...+60 °C

Input

Rated control voltage	24...230 V AC, 24...48 V DC	Repeat accuracy	$\pm$ 1 %
Time ranges	0.10 s - 120 h		

Output

Continuous current	5 A

Contact specifications

No. of contacts	1	Contact design	CO contact
Electrical service life, DC coil	10^5 switching cycles (5A at 250 Vac, ohm load at 1800/h)	Mechanical service life	10^7 switching cycles (no load, 1800/h)
Contact material	AgNi 90/10	Contact resistance	100 MΩ min., at 500 V DC

Insulation coordination (EN 50 178)

Protection degree	IP 30 // terminals IP 20

Other technical data

Version	Timing relay

Approvals

Certificate No. (UR)	E223474OMR

Rated data UL

Certificate No. (UR)	E223474OMR

Classifications

ETIM 2.0	EC001439	ETIM 3.0	EC001439
UNSPSC	30-21-19-17	eClass 4.1	27-14-23-10
eClass 5.1	27-14-23-10	eClass 6.0	27-14-23-10
eClass 7.0	27-14-23-10		

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2

BT series
TIMER BTR-S

Technical data

Approvals

Approvals

$C \epsilon$ CSA $\mathbf{R}\!\!\!\mathbf{U}^{\circ}$

Downloads

Declaration of Conformity   K258_08_03.pdf

Installation timer

The electronic timer from the BT product range offers ideal solutions for industrial applications.

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The BT product range provides the following functions:

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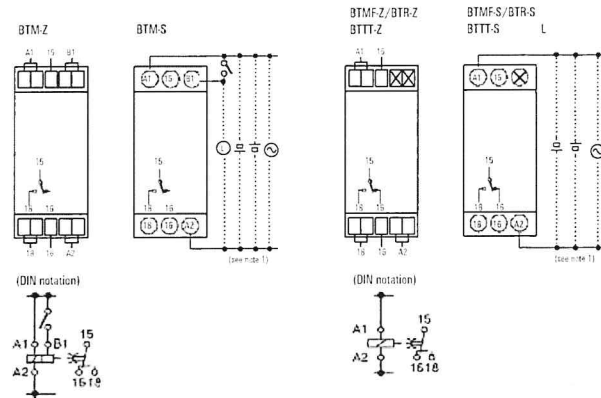- Multifunction without control input (BTMF)
- Star-delta change-over

Time ranges and power supplies for timer

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

The multi-voltage supply 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 ⌐o↓⌐ as it provides serveral operating modes and differs from the delayed contacts of conventional timer.
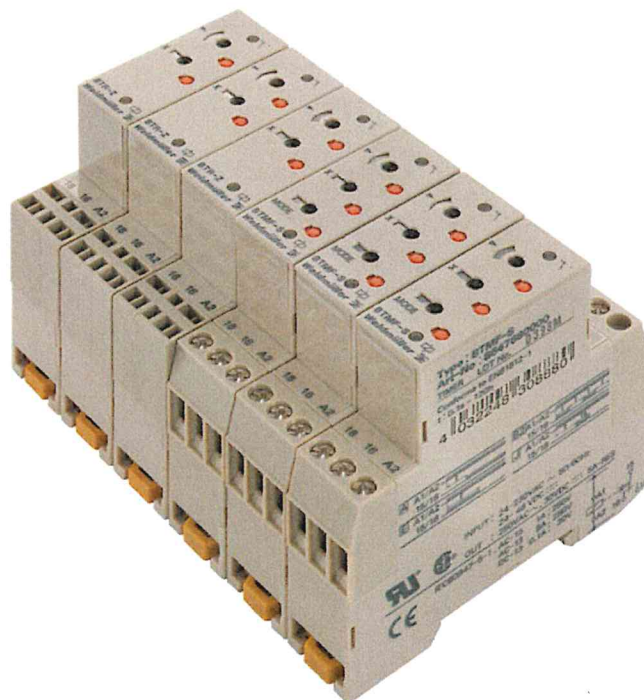
Time ranges

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 button 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 button/switch is totally covered by the red cover. To unlock, simply turn the key in the opposite direction.
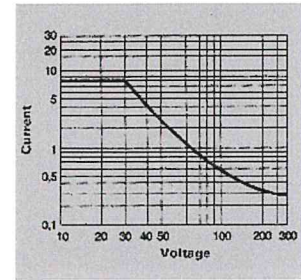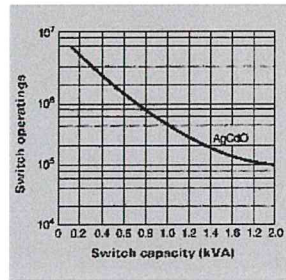
Connection system
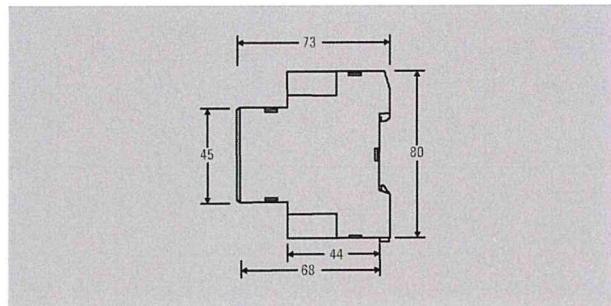The units offers the following connection technologies:

Screw connection
- 2 x 1.5 mm² with wire end ferrule,
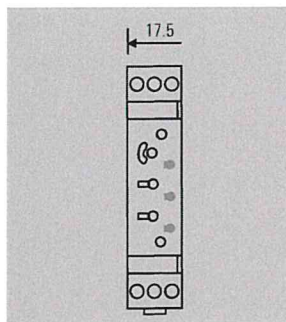- 2 x 2.5 mm² without wire end ferrule

Tension clamp connection
- 2 x 1.5 mm² with wire end ferrule,
- 2 x 1.5 mm² without wire end ferrule

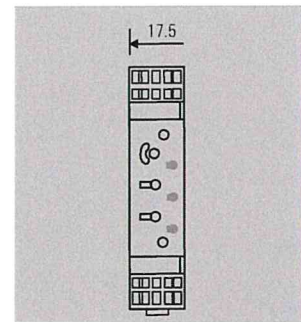### Dimensions

Screw connection

Tension clamp connection

BT-SERIES – Timer

Installation timer

- Screw or tension clamp connection
- LED status indicator Input: voltage present
  Output: output active
- Approvals **UL** 508   **CSA** 22.2 Nr. 14
  EN 61812-1   IEC 60664-1
  IEC 60947-5-1   EN 61812-1
  IEC 60664-1   IEC 60947-5-1
  EN 55011   EN 50082-2

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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.	10^5 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 UL94		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)	mm²	
Depth x Width x Height	mm	73.0 x 17.5 x 80.0

Accessories

Designation		Type	Qty.	Order No.
Locking and adjusting key		BT Lock Pen	1	8659840000

Multifunction relay with control input (BTM)

Ordering data

Connection system	Type	Qty.	Order No.
Screw connection	BTM-S	1	8647700000
Tension clamp	BTM-Z	1	8647710000

Functions

Function A – on-delay

Connect power supply (A1/A2). When the input signal (B1/A2) is applied, the set time T begins to delay. After the time has expired, the output R (15/18) disconnects the load. To reset, the input signal needs to be switched off.

A1 / A2
B1 / A2
15 / 18

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.

A1 / A2
B1 / A2
15 / 18

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.

A1 / A2
B1 / A2
15 / 18

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.

A1 / A2
B1 / A2
15 / 18

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.
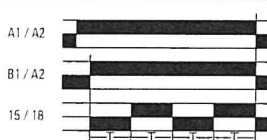
A1 / A2
B1 / A2
15 / 18

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.
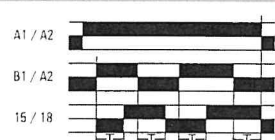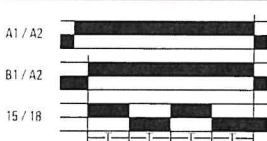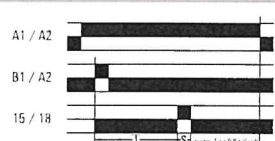
A1 / A2
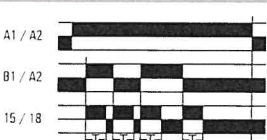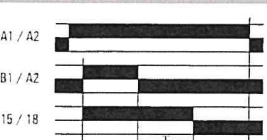B1 / A2
15 / 18

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).

A1 / A2
B1 / A2
15 / 18

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.

A1 / A2
B1 / A2
15 / 18

E

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

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.

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.
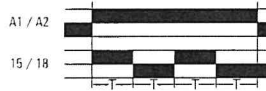
Function E – passing make function

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 (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 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.
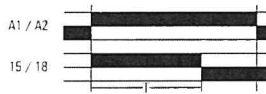
Timer (BTTT)

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)

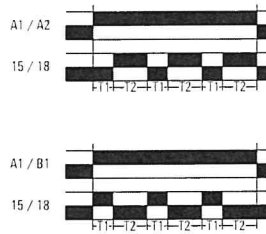### Ordering data

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.

E