

**BT series**  
**TIMER BTTT-S**
**Weidmüller Interface GmbH & Co. KG**

Klingenbergstraße 16

D-32758 Detmold

Germany

Fon: +49 5231 14-0

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BTT installation timing relay as universal clock generator. After connecting the voltage supply, two independently adjustable times (off and operating conditions) are counted down.

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**

|            |  |
|------------|--|
| Type       | TIMER BTTT-S   |
| Order No.  | <a href="#">8647740000</a>   |
| 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) | 4032248308941  |
| Qty.       | 10 pc(s).  |

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**Technical data****Dimensions and weights**

|       |         |            |        |
|-------|---------|------------|--------|
| Width | 17.5 mm | Height     | 80 mm  |
| Depth | 73 mm   | Net weight | 79.8 g |

**Temperatures**

|                     |  |                       |                |
|---------------------|--|-----------------------|----------------|
| Humidity            | 35...85 % rel. humidity, no condensation | Operating temperature | -10 °C...55 °C |
| Storage temperature | -25 °C...65 °C                           |                       |                |

**Input**

|                                |                             |  |  |
|--------------------------------|-----------------------------|--|--|
| Rated control voltage          | 24...230 V AC, 24...48 V DC | Power rating                               | ≤ 0.4 VA, 1.6 W                            |
| Pull-in/drop-out voltage, typ. | 2.4 V AC<br>2.4 V DC        | Status indicator                           | LED green, power, LED orange: relay output |
| Time ranges                    | 0.10 s - 120 h              | Repeat accuracy                            | ± 1 %                                      |
| Min. pulse duration            | 50 ms                       | Max. reset time after voltage interruption | 100 ms                                     |

**Output**

|   |              |   |         |
|---|--------------|---|---------|
| Rated switching voltage                 | 250 V AC     | Max. switching voltage, AC              | 250 V   |
| Continuous current                      | 5 A          | AC switching capacity (resistive), max. | 2500 VA |
| DC switching capacity (resistive), max. | 120 W @ 24 V |   |         |

**Contact data**

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

**General data**

|         |              |                           |     |
|---------|--------------|---------------------------|-----|
| Version | Timing relay | UL 94 flammability rating | V-2 |
|---------|--------------|---------------------------|-----|

**Insulation coordination**

|                                    |                             |                   |       |
|------------------------------------|-----------------------------|-------------------|-------|
| Dielectric strength input – output | 2 kV <sub>eff</sub> / 1 min | Protection degree | IP 20 |
|------------------------------------|-----------------------------|-------------------|-------|

**Further details of approvals / standards**

|           |       |
|-----------|-------|
| Standards | UL508 |
|-----------|-------|

**Connection data**

|  |                     |  |                     |
|--|---------------------|--|---------------------|
| Wire connection method                 | Screw connection    | Tightening torque, max.                | 0.98 Nm             |
| Clamping range, rated connection, min. | 0.5 mm <sup>2</sup> | Clamping range, rated connection, max. | 2.5 mm <sup>2</sup> |

**Classifications**

|            |             |            |             |
|------------|-------------|------------|-------------|
| ETIM 3.0   | EC001439    | UNSPSC     | 30-21-19-17 |
| eClass 5.1 | 27-14-23-10 | eClass 6.2 | 27-14-23-10 |
| eClass 7.1 | 27-14-23-10 |            |             |

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Technical data

Approvals

Approvals



ROHS

Conform

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Declaration of Conformity

[K258\\_08\\_03.pdf](#)

PDF

[Time functions BTTT-Timer](#)

# Installation timer

The electronic timer from the BT product range offers 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

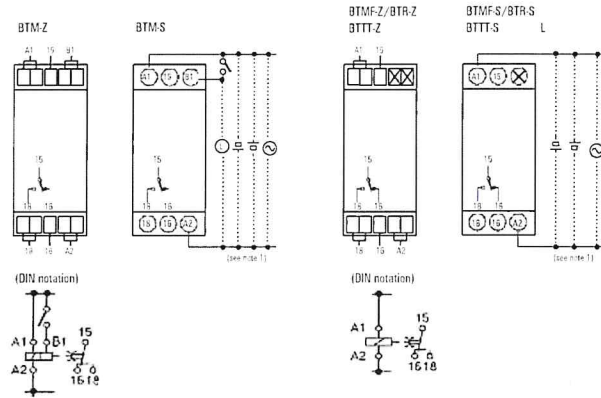
## E

**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.

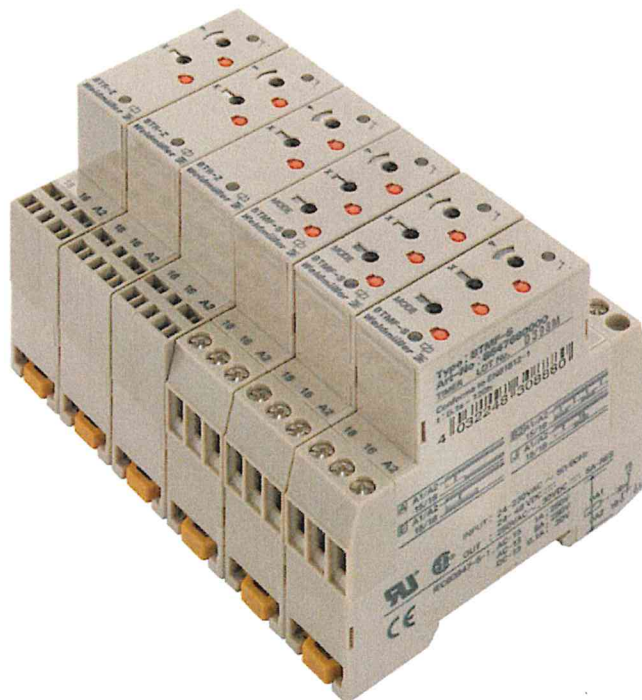
The multi-voltage supply range offers a wide bandwidth for industrial use (see technical data).

## Connection of the timer



Note: 1. Pole numbers are not necessary for DC voltage supply.

2. The contact symbol of BTM is marked with  $\rho$  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 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**

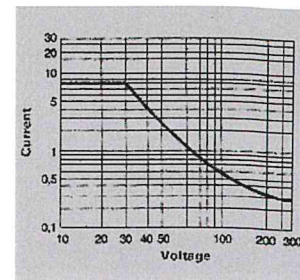
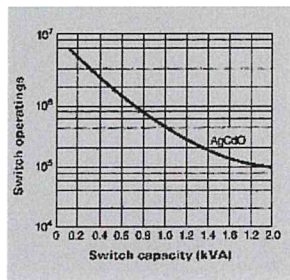
The units offers the following connection technologies:

**Screw connection**

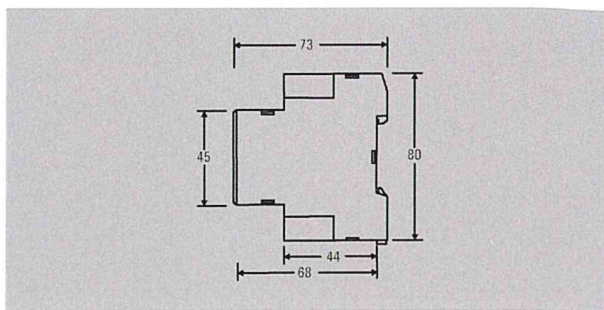
- 2 x 1.5 mm<sup>2</sup> with wire end ferrule,
- 2 x 2.5 mm<sup>2</sup> without wire end ferrule

**Tension clamp connection**

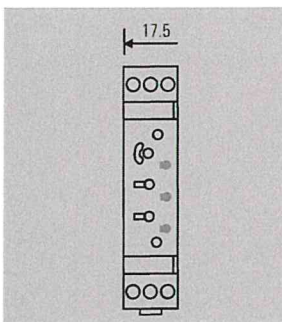
- 2 x 1.5 mm<sup>2</sup> with wire end ferrule,
- 2 x 1.5 mm<sup>2</sup> without wire end ferrule



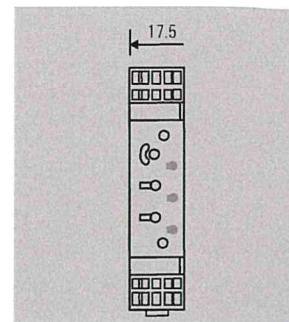
**Dimensions**



**Screw connection**



**Tension clamp connection**



## BT-SERIES – Timer

### Installation timer

- Screw or tension clamp connection
  - LED status indicator
  - Approvals
- |               |                 |
|---------------|-----------------|
| Input:        | voltage present |
| Output:       | output active   |
| 508           | 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      |



## E

#### 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

|   |  |   |                            |
|---|--|---|----------------------------|
| <b>Input</b>                            |  | <b>Contacts hard gold plated</b>  |                            |
| 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)                           |   |                            |
| <b>Insulation</b>                       |  |   |                            |
| 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                          |   |                            |
| <b>Output</b>                           |  |   |                            |
| 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 <sup>7</sup> switching cycles (no load, 1800/h)                          |                            |
|   | electrical min.                                    | 10 <sup>7</sup> switching cycles (5A at 250 V AC, resistive load at 1800/h) |                            |
| Time range                              | 0,10 s...120 h                                     |   |                            |
| Repetition accuracy                     | ± 1 %  |   |                            |
| <b>Other data</b>                       |  |   |                            |
| 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           |   |                            |
| <b>Dimensions</b>                       |  |   |                            |
| Clamping range (nominal/min/max)        | mm <sup>2</sup>                                    |   |                            |
| Depth x Width x Height                  | mm 73.0 x 17.5 x 60.0                              |   |                            |

#### Accessories

| Designation               |
|---------------------------|
| Locking and adjusting key |

| Type        | Qty. | Order No.  |
|-------------|------|------------|
| BT Lock Pen | 1    | 8659840000 |

Multifunction relay with control input (BTM)



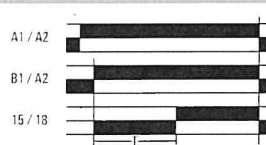
Ordering data

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

Functions

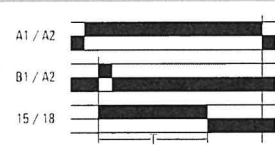
Function A – on-delay

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.



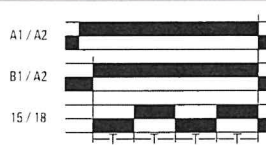
Function E – passing make function

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.



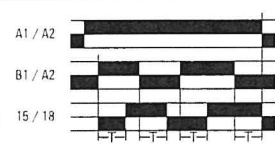
Function B – pulse emitter (starting at normal position)

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.



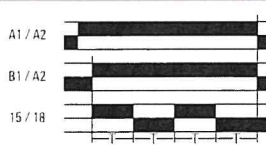
Function G – on and off-delay function

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).



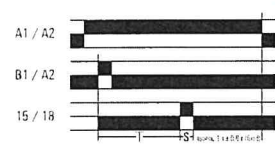
Function B2 – pulse emitter (starting at operated position)

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

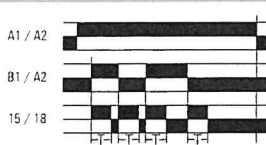
Connect power supply (A1/A2). Time delay T begins after applying the input signal (B1/A2). At the end of this time, the output R (15/18) connects the load for 1 second.



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.

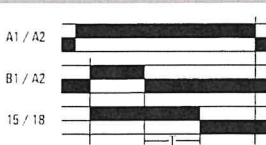
After switching off the input signal (B1/A2), output R (15/18) connects the load again for the set time T. Output R (15/18) switches the load off again at the end of time T.



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

### Multi-function relay without control input (BTMF)



#### Ordering data

| Connection system | Type  | Qty. | Order No.  |
|-------------------|-------|------|------------|
| Screw connection  | BTMFS | 1    | 8647680000 |
| Tension clamp     | BTMFZ | 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.



E

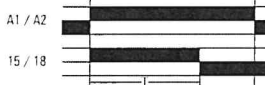
##### Function B2 – pulse emitter (starting at operated condition)

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 |

Timer (BTDS)



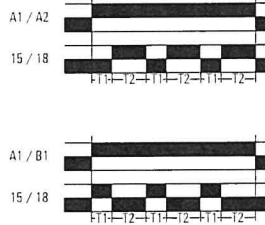
Ordering data

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

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.



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.

