

# Quick Guide Universal Buffer Stage TR 1703

## Information

Thank you for your understanding, that we do not enclose a complete instruction manual or datasheet. You have the opportunity to download all relevant information and from our website ([www.esters.de](http://www.esters.de)).



Download complete instruction manual → [www.esters.de/en/download/mi000.shtml#TR1703](http://www.esters.de/en/download/mi000.shtml#TR1703)

Download datasheet → [www.esters.de/en/download/ds000.shtml#TR1703](http://www.esters.de/en/download/ds000.shtml#TR1703)

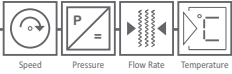


## Scope of Supply

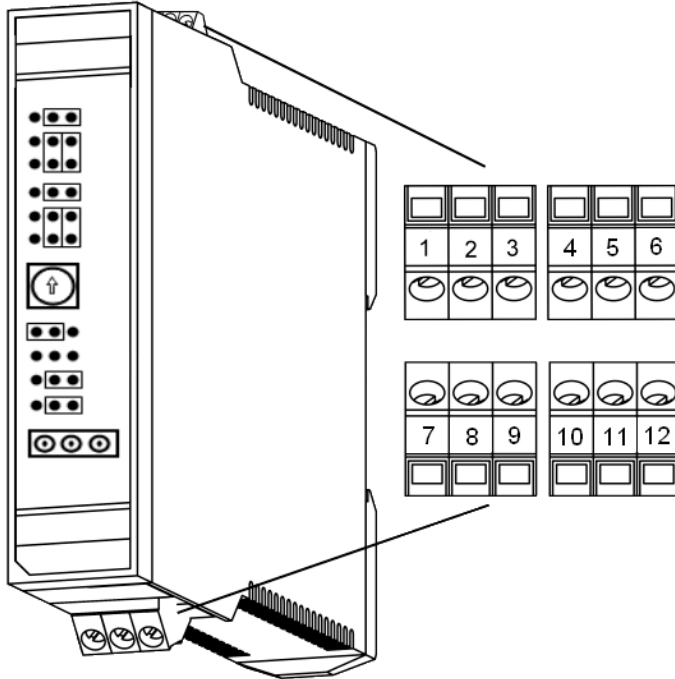
- Universal Buffer Stage TR 1703
- Quick Guide
- Declaration of conformity

## Safety- und Mounting Instructions

- Only properly trained personnel authorised by the owner of the system shall be permitted to install, start up, and maintain the product. The respective technical personnel must have read and understood the instructions and must follow the directions.
- Please follow the rules and regulations for the installation and operation of low-voltage switchgear according to DIN 41 488 Part 2.
- The device TR 1703 is designed for DIN rail installation according to DIN EN 60715. The rail guide and fuse clip are on the back side. In order to fasten the TR 1703 on the profile rail, the casting must be mounted to the rail guide and be pressed unto the profile rail. The fuse clip fixes the device automatically.
- Connect only in the complete absence of line voltage.
- If overvoltages or voltage peaks are expected, overvoltage arresters should be installed.
- Make sure that the voltage corresponds to the specifications on the type label.



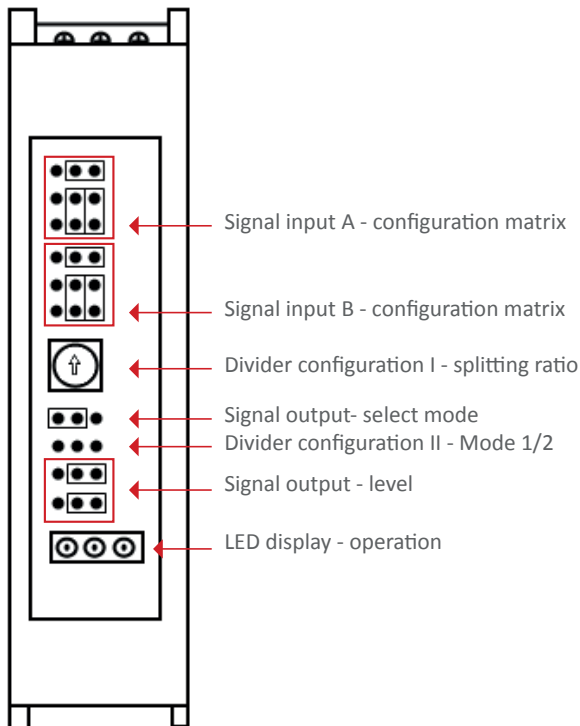
## Connection diagram



| TERMINAL | ASSIGNMENT              |
|----------|-------------------------|
| 1        | +24V/DC (UB+)           |
| 2        | GND (UB-)               |
| 3        | Input signal 1 (S1)     |
| 4        | Input signal 1 (S1 GND) |
| 5        | Input signal 2 (S2)     |
| 6        | Input signal 2 (S2 GND) |

| TERMINAL | ASSIGNMENT         |
|----------|--------------------|
| 7        | GND                |
| 8        | Output signal S2A- |
| 9        | Output signal S2A+ |
| 10       | GND                |
| 11       | Output signal S1A- |
| 12       | Output signal S1A+ |

## Configuration



The device is configured with jumpers and a coding switch on the front. In the following you can find the configuration details.

**Please note:**

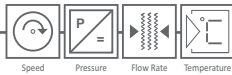
The following configuration must only be performed in complete absence of line voltage, otherwise the configuration cannot be loaded:

- Divider configuration I - splitting ratio (only available for devices with option P4)
- Divider configuration II - mode 1/2 (only available for devices with option P4)
- Signal output - select mode

Configurations for the following signal input and output can be performed with line voltage:

- Signal input A and B - configuration matrix (not available with option P5)
- Signal output – level

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## Signal input A/B - configuration matrix

Configuration is not available for devices with option P5

|  |   |  |   |
|--|---|--|---|
|  | <p><b>HTL COMPLEMENTARY</b><br/>Level <math> (S..+) - (S..-)  &gt; 2 \text{ V}</math>;<br/>impedance approx. 94 k</p>                             |  | <p><b>TTL COMPLEMENTARY RS422</b><br/>Level <math> (S..+) - (S..-)  &gt; 0,5 \text{ V}</math>;<br/>impedance approx. 10 k</p>                             |
|  | <p><b>HTL UNIPOLAR</b><br/>Hi level <math>&gt; 7,5 \text{ V}</math>;<br/>Lo level <math>&lt; 2,9 \text{ V}</math>;<br/>impedance approx. 47 k</p> |  | <p><b>TTL UNIPOLAR ( S-GND)</b><br/>Hi level <math>&gt; 1,9 \text{ V}</math>;<br/>Lo level <math>&lt; 1,3 \text{ V}</math>;<br/>impedance approx. 5 k</p> |

## Divider configuration I and II

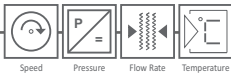
The function is only available, if the device is equipped with option P4.

The configuration must be performed in complete absence of line voltage, otherwise the configuration cannot be loaded.

| CODING SWITCH<br>(DIVIDER<br>CONFIGURATION II) | FREQUENCY DIVIDER MODE (DIVIDER CONFIGURATION II) |             |
|--|---|-------------|
|  | MODE 1<br>  | MODE 2*<br> |
|  | SPLITTING RATIO                                   |             |
| 0  | not defined                                       | not defined |
| 1  | 1   | 16          |
| 2  | 2   | 20          |
| 3  | 3   | 24          |
| 4  | 4   | 32          |
| 5  | 5   | 40          |
| 6  | 6   | 48          |
| 7  | 7   | 64          |
| 8  | 8   | 100         |
| 9  | 9   | 128         |
| A  | 10  | 150         |
| B  | 11  | 200         |
| C  | 12  | 250         |
| D  | 13  | 300         |
| E  | 14  | 400         |
| F  | 15  | 500         |



\* The feeding of the single-component signal is carried out on input S1 exclusively. The 2nd channel for the frequency divider gets simulated, which means the signal input S2 is not available for external signals.

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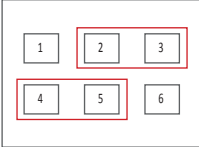
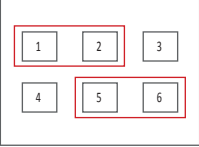


## Signal output - select mode

The configuration must be performed in complete absence of line voltage, otherwise the configuration cannot be loaded.

|  |   |
|--|---|
| <p><b>MODE P1:</b><br/>INCREMENTAL SIGNAL</p>       | <p>For the acquisition of actual values of speed where high impulse encoder frequencies are unwanted. These can be subdivided by integers in the pulse scaler. A connected signal is required to the signal inputs S1 and S2.</p>   |
| <p><b>MODE P2:</b><br/>SINGLE COMPONENT SIGNAL</p>  | <p>The feeding of the single-component signal is carried out on input S1 exclusively. Via internal wiring the 2nd channel for the frequency divider then gets simulated, which means the signal input S2 is not available for external signals.</p> <p>Please note, Mode P2 can also be used to convert and divide a single component signal. The output signal has just to be connected.</p> |

## Signal output - level

|  |  |  |
|--|--|--|
|  <p>24V +/-10%</p> |  <p>15V +/-10%</p> |  <p>5V +/-10%</p> |
|--|--|--|

## LED display - operation status

The three-color LED display signals the respective status during operation.

| GREEN   | YELLOW  | RED                                   |
|---|---|---------------------------------------|
| <b>OPERATION MODE P1: INCREMENTAL SIGNAL</b>                              |   |                                       |
| Periodic flashing:<br>signal input S1 provides a valid signal             | Periodic flashing:<br>signal input S2 provides a valid signal | Constant glow:<br>active power supply |
| <b>OPERATION MODE P2: SINGLE COMPONENT SIGNAL</b>                         |   |                                       |
| Periodic alternating flashing:<br>signal input S1 provides a valid signal |   | Constant glow:<br>active power supply |

## Troubleshooting

| ERROR                  | CHECKLISTE   |
|------------------------|--|
| NO OUTPUT SIGNAL       | <ul style="list-style-type: none"> <li>- Check, if the signal inputs are correct.</li> <li>- Check, if power supply is on.</li> <li>- Check, if switch code has a valid position.</li> <li>- Check, if the configuration of the input signals is correct.</li> </ul> |
| WRONG SIGNAL AMPLITUDE | <ul style="list-style-type: none"> <li>- Check, if power supply is on.</li> <li>- Check, if level configuration is correct</li> </ul>  |

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