



Conductive Switch Amplifier

KFA5-ER-1.W.LB

- 1-channel signal conditioner
- 115 V AC supply
- Level sensing input
- Adjustable range 1 k Ω ... 150 k Ω
- Relay contact output
- Fault relay contact output
- Adjustable time delay up to 10 s
- Minimum/maximum control
- Line fault detection (LFD)



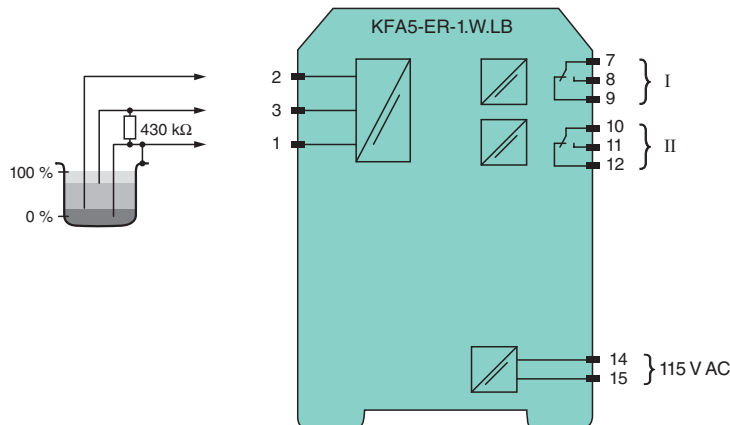
Function

This signal conditioner provides the AC measuring voltage for the level sensing electrodes. Once the measured medium reaches the electrodes, the unit reacts by energizing a form C changeover relay contact. The module is voltage and temperature stabilized and guarantees a defined switching characteristic. It can be used for on/off control or minimum/maximum control. A signal delay feature is available and is adjustable between 0.5 s and 10 s. This module can also monitor the field circuit for lead breakage (LB). LB is indicated by a red LED. If LB monitoring is selected, output II serves as the fault signal output; otherwise, it will follow the function of output I.

Application

The device is equipped with lead breakage detection (current free relay in event of failure). For this purpose, the enclosed 430 k Ω resistance must be switched between the maximum and reference electrode. This function can be deactivated by DIP switches.

Connection



Technical Data

General specifications

| | | |
|-------------------|----------------|-----------------------------------|
| Signal type | | Digital Input |
| Supply | | |
| Connection | | terminals 14, 15 |
| Rated voltage | U _r | 103.5 ... 126 V AC , 45 ... 65 Hz |
| Rated current | I _r | 12 mA |
| Power consumption | | < 1.2 W |

Technical Data

Input

| | |
|----------------------|--|
| Connection side | field side |
| Connection | terminals 1 (mass), 2 (min), 3 (max) |
| Control input | min./max. control system: terminals 1, 2, 3 on/off control system: terminals 1, 3 |
| Response sensitivity | 1 ... 150 kΩ , adjustable via potentiometer |

Output

| | |
|----------------------------------|---|
| Connection side | control side |
| Connection | terminals 7, 8, 9; 10, 11, 12 |
| Switching power | max. 192 W , 2000 VA |
| Output | relay |
| Contact loading | 253 V AC/2 A/cos ϕ > 0.7; 40 V DC/2 A resistive load |
| Time constant for signal damping | 0.5 s, 2 s, 5 s, 10 s |

Galvanic isolation

| | |
|---------------------|--|
| Input/Output | reinforced insulation according to IEC/EN 61010-1, rated insulation voltage 300 V _{eff} |
| Input/power supply | reinforced insulation according to IEC/EN 61010-1, rated insulation voltage 300 V _{eff} |
| Output/power supply | reinforced insulation according to IEC/EN 61010-1, rated insulation voltage 300 V _{eff} |

Indicators/settings

| | |
|------------------|---------------------------------------|
| Display elements | LEDs |
| Control elements | DIP switch potentiometer |
| Configuration | via DIP switches via potentiometer |
| Labeling | space for labeling at the front |

Directive conformity

| | |
|-------------------------------|--|
| Electromagnetic compatibility | |
| Directive 2014/30/EU | EN 61326-1:2013 (industrial locations) |
| Low voltage | |
| Directive 2014/35/EU | EN 61010-1:2010 |

Conformity

| | |
|-------------------------------|----------------|
| Electromagnetic compatibility | NE 21:2006 |
| Degree of protection | IEC 60529:2001 |

Ambient conditions

| | |
|---------------------|---|
| Ambient temperature | -20 ... 60 °C (-4 ... 140 °F) extended ambient temperature range up to 70 °C (158 °F), refer to manual for necessary mounting conditions |
|---------------------|---|

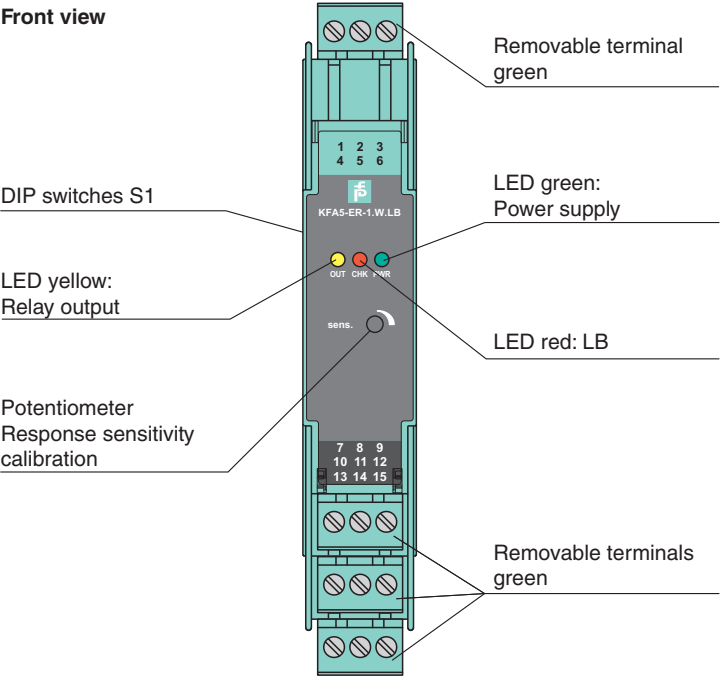
Mechanical specifications

| | |
|----------------------|--|
| Degree of protection | IP20 |
| Connection | screw terminals , max. 2.5 mm ² |
| Mass | approx. 150 g |
| Dimensions | 20 x 119 x 115 mm (0.8 x 4.7 x 4.5 inch) (W x H x D) , housing type B2 |
| Mounting | on 35 mm DIN mounting rail acc. to EN 60715:2001 |


General information

| | |
|---------------------------|---|
| Supplementary information | Observe the certificates, declarations of conformity, instruction manuals, and manuals where applicable. For information see www.pepperl-fuchs.com . |
|---------------------------|---|



Assembly



Matching System Components

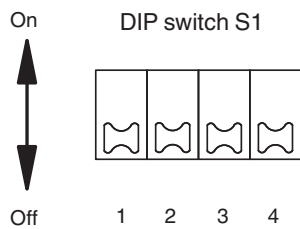
| | | |
|---|------------------|--|
|  | K-DUCT-GY | Profile rail, wiring comb field side, gray |
|---|------------------|--|

Accessories

| | | |
|---|------------------|--|
|  | KF-ST-5GN | Terminal block for KF modules, 3-pin screw terminal, green |
|  | KF-CP | Red coding pins, packaging unit: 20 x 6 |

Configuration

DIP switch function on side of device



| Switches | Position | Function |
|----------|----------|------------------------|
| 1 | Off | open circuit current |
| | On | closed circuit current |
| 2 | Off | LB deactivated |
| | On | LB activated |

| Switch 3 | Switch 4 | Time constant for signal damping |
|----------|----------|----------------------------------|
| Off | Off | 0.5 s |
| Off | On | 2 s |
| On | Off | 5 s |
| On | On | 10 s |

- Open circuit current principle: In open circuit current principle the relay becomes active when the limit is reached.
- Closed circuit current principle: In closed circuit current principle, the relay is activated when power is applied. The relay is deactivated when the limit is reached.

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