

# DIFFERENTIAL PROTECTION - RELAY DSW 4.2

## FEATURES

The Differential-Protection Relay replaces the DSW-1 and DSW-2 types. It is function-compatible to these older types.

The DSW-4 is a 3-phase Differential Protection Relay. Input currents from two measuring points are compared to each other. For example generator neutral point and C.T.'s inside switchgear.

The protected area is between the 2 sets of current transformers. Earth leakage currents within the protected area and within the adjusted setting cause trip of relay. Faults out of the protected area do not cause a trip signal.

To obtain safe function of the relay and to avoid unexpected trips the characteristic of the 6 C.T.'s used should be considered to be same.



## DESCRIPTION

The setting range is 5 to 20 % of the nominal current. For each of the 3 phases the trip range may be selected separately by potentiometers located in front of the device.

Characteristic and accuracy of the C.T.'s may limit the settable sensitivity of the device. C.T.'s ordered out of same production series with same characteristic and same burden and accuracy will enable to make settings down to 5 %.

Correct wiring concerning current direction and C.T. pairs should be checked before commissioning as this is an essential precondition for correct function.

The factory preset of the device is adjusted to same values of the C. T. pair. Where necessary an adjustment of symmetry can be made after opening the housing via built-in potentiometers. If changes of the factory pre-setting has been made the

function of the relay has to be retested within the complete measuring range.

A jumper inside the relay allows to select the start-up inhibit of the relay for either 0,5 sec. or 5 sec.

The relay has 4 potential-free relay-change-over contacts. If the differential current exceeds the preset value both contacts R1/R2 are de-energised and both contacts A1/A2 will become energized.

The green LED 'R' will light up if the contacts R1/R2 are energized. The red LED will be light up if the contacts A1/A2 are energized.

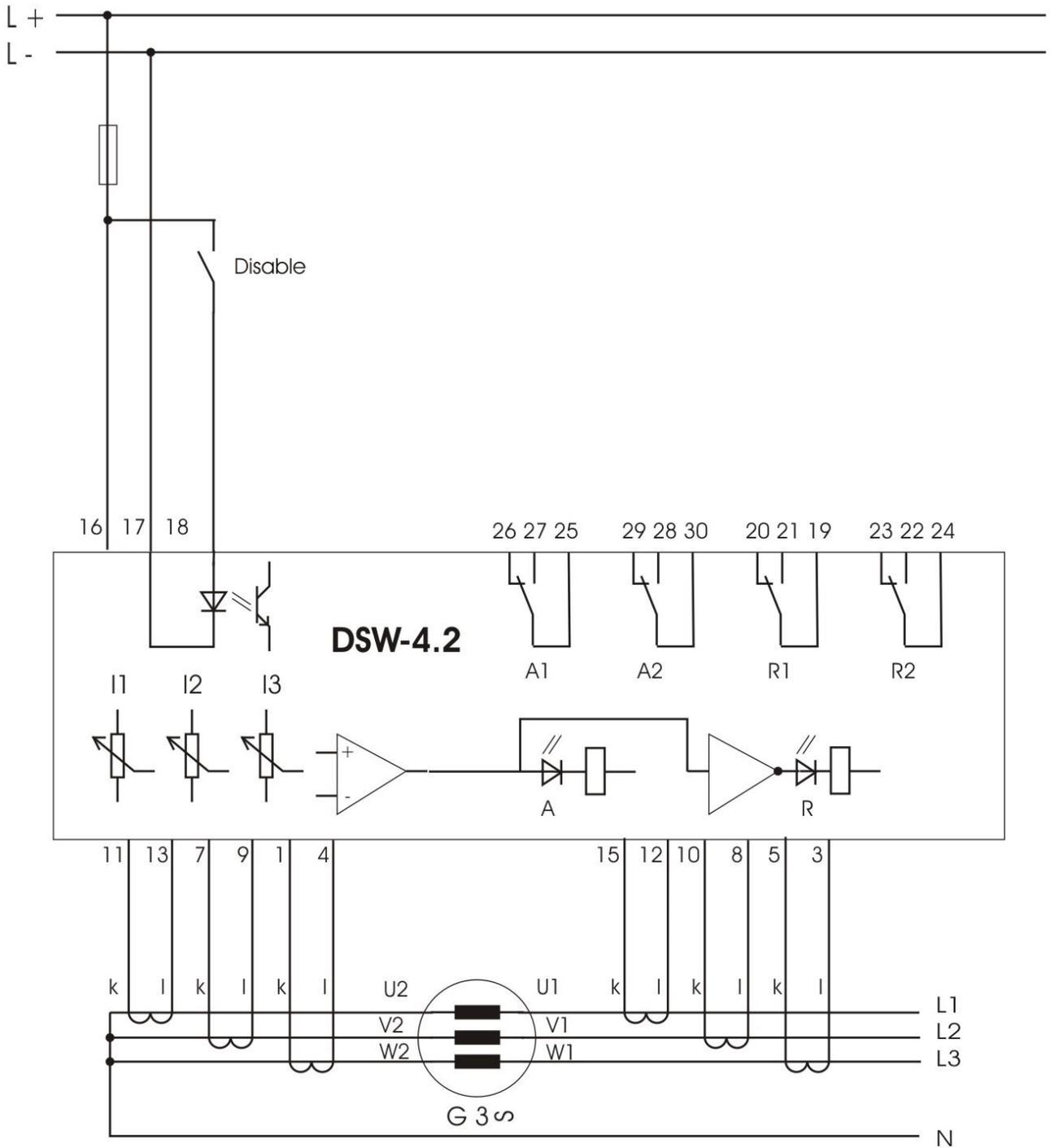
If the red LED is lightning permanently after start of operation it is necessary to check the correct wiring of the device. Because of the metering principle of the device the correct connection of the terminals 'k' and 'l' is essential in each phase. If the fault is founded in the accuracy of the C.T.'s it may be required to adjust the C.T.'s symmetry by the internal symmetry-potentiometer.

## Technical Data

Enclosure	Plastic Makrolon 8020 Light gray according to VDE 0100 und VBG 4
Mounting	C-Rail 35mm according to DIN Alternative screw mounting
Dimension	L 75 x W 99,7 x D 110 (mm <sup>3</sup> )
Protection-class	Enclosure IP 40 Terminals IP 20
Device cover	clear transparent, lead-sealable
Ambient-temperature	-10... + 50 Grad C
Aux- voltage	12 / 24 V DC
Consumption	max. 2 W
Measuring-inputs	6 x 0...10 A AC ( 20 A , 10 sec. )
Adjustment	Potentiometer in front
Setting-range	5..20 %, settable separately each phase.
Turn-on delay	0,5 / 5 sec. Settable by internal jumper
Reacting time	30 ms
Outputs	2 Relay-change-over contacts, closed circuit principle 2 Relay-change-over contacts, open circuit principle Max load 250 V AC, 125 W
Input	Disable 12/24 V
Edition	07.11.2012

Designs and specifications are subject to change without notice, due to modifications or improvements.

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