

# Safety Immersion Heaters ROTKAPPE® with Anti-Burn System



The differential current monitor DSW 3/2 monitors the currents in the individual phases (L1, L2, L3) of a three-phase mains supply.

When the limit value set for power consumption imbalance is exceeded, the power contactor is switched off via the relay contact. The limit value recommended for power consumption imbalance is 5.0 %.

The effective process parameters (e.g. Phase current) are indicated on the display. If values exceed or fall below the set limits, the contact switches and the display shows the respective error message.

The DSW 3/2 differential current monitor reacts in the following situations:

- Overload protection (for current consumption monitoring)
- Current phase failure (if the temperature limiter in the immersion heater is activated)
- Current phase failure (if the heating coil fails or in case of cable breakage)

## Technical data DSW 3/2

<b>Dimensions</b>	w = 45 mm, h = 86 mm, d = 80 mm
<b>Mounting</b>	on 35 mm rails (in accordance with EN 60715)
<b>Ambient temperature</b>	-25...60°C
<b>Maximum humidity</b>	10...95 % (no condensation)
<b>Supply voltage</b>	24VDC ± 15 %
<b>Power consumption</b>	2,5W at 24V DC
<b>Measuring inputs</b>	3 x I with I <sub>MAX</sub> = 16A~
<b>Output</b>	Relay contact 230V/3A~
<b>Terminal cross-section</b>	1,5 mm²...4 mm²

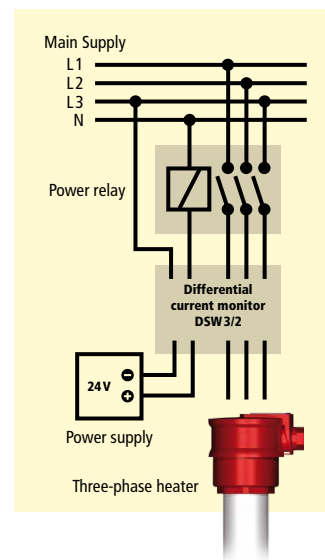
After phase failure, the DSW 3/2 differential current monitor can be reset directly via the control keys ↵. If the error is not resolved, the differential current monitor goes into alarm state again and the respective error message is displayed.

The DSW 3/2 differential current monitor is an IO link device. It can therefore be used as an intelligent sensor / actuator for parameter data transfer to a PLC (via the IO link protocol).

Using a PLC and an IO link allows additional monitoring of the following parameters:

- Phase overcurrent monitor
- Phase undercurrent monitor
- Overcurrent and undercurrent monitor
- Current imbalance monitor
- 3-phase undercurrent detection
- Phase sequence detection (at inductive load)

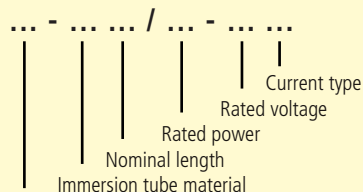
Block diagram for 3-phase-connection



## Relation Heaters DSW 3/2

Immersion heaters with rated power [kW] for 400V 3~	Max. number of heaters per DSW 3/2
1,6/2,0	5
2,5	4
3,15/3,5	3
4,0/5,0	2
6,3/7,0/8,0/10,0	1

## Type designations



T = Safety ROTKAPPE immersion heater with Anti-Burn System, 1/2-phase  
A = Safety ROTKAPPE immersion heater with Anti-Burn System, 3-phase

**Example:** T-PS630/1,6-230Ws:

Safety ROTKAPPE immersion heater with Anti-Burn System, porcelain tube, nominal tube length 630 mm; rated power 1.6 kW; rated voltage 230V (single-phase).

**Restriction note:** The differential current monitor DSW 3/2 cannot be used in connection with control interventions with a phase angle control or for signal packages which change the sinus waves.