Sigma F+E 2.0 | Sigma F+E 3 2.0

Short-circuit and earth fault indicator

Sigma F+E 2.0

Sigma F+E 2.0 AC/DC

Sigma F+E 3 2.0

Sigma F+E 3 2.0 AC/DC

PRODUCT FEATURES

- Short-circuit and earth fault detection from 3 Single-phase current sensors
- Phase-selective fault indication
- Trip current values: load-dependent self-adjustment or fixed values
- Single and double flash mode for operation in radial and ring networks
- With auxiliary supply and back-up capacitor available in AC/DC version

YOUR ADVANTAGES

- No false trips due to higher harmonics
- Highly visible LED fault indication
- Detection of high-impedance earth faults
- Clear fault type indication via LED (Sigma F+E 3 2.0)
- Retrofit ready for earth fault and short-circuit indicators with monitoring/control and fault direction function

Sigma F+E 2.0 and Sigma F+E 3 2.0 are combined short-circuit and earth fault indicators. Due to the measuring principle the earth fault indication is suitable for networks with low-impedance, solid and isolated neutral earthing..

The current is measured via three Single-phase current sensors. This allows phase-selective fault detection and indication.

There are two response criteria for short-circuit detection, fixed response values with response delay or auto-adjustment based on load current.

If the current for the selected response criterion — fixed value or self-adjustment — is exceeded, the fault-affected phase will be indicated by a bright flashing LED and remote contact will be activated. A double flashing LED signals a second fault that has occurred within the reset time, e. g. by an automatic reclose attempt and the remote contact will be reactivated.

For testing and commissioning purposes, the trip current values can be reduced to 10 A without changing the DIP switch settings.

Sigma F+E 3 2.0

The red LED I>> signals a short-circuit, the yellow LED I_E> signals an earth fault. The L1, L2 and L3 indication fields display the fault-affected phase. In addition, phase-selective (L1, L2, L3) or group-selective (I>>, IE>, I>> and IE>) remote signalling is possible.

Sigma F+E 2.0 AC/DC and Sigma F+E 3 2.0 AC/DC

These versions can be connected to auxiliary supply. If the auxiliary power drops out in the event of a fault, the LED indicator can operate using a back-up capacitor for up to 8 hours.

Technical data	Sigma F+E 2.0	Sigma F+E 3 2.0
Short-circuit indicator	■	■
Earth fault indicator	■	■
Earth fault detection method	Earth short-circuit	
I>> short-circuit trip current	200, 300, 400, 600, 800, 1,000, 2,000 A Self-adjustment to load current (I_L = load current): I_L < 100 A ⟶ I>> = 400 A, I_L > 100 A ⟶ I>> = 4 x I_L	
tI>> response delay	40 ms, 80 ms	40, 80, 200, 300 ms
I_E> earth fault trip current	20, 40, 60, 80, 100, 120, 160 A	20, 40, 60, 80, 100, 120, 160 A
tI_E> response delay	80, 160 ms	60, 80, 200, 300 ms
Accuracy	±5 % (0—630 A) ±10 % (>630 A)	
Indication	3 red phase-selective LEDs: short-circuit 2 or 3 phases (L1, L2, L3) and earth fault 1 phase	LED indication 3 red phase-selective LEDs L1, L2, L3 1 red LED short-circuit I>> 1 yellow LED earth fault I_E>
Remote signal / communication	2 potential-free relay contact	3 potential-free relay contact
Remote contact	Potential-free permanent or momentary contact Contact capacity: 230 V AC / 1 A / 62.5 VA max.; 220 V DC / 1 A / 60 W max.	
Reset	▸ By button ▸ Automatic time reset: 1, 2, 4 or 8 h ▸ Remote reset	▸ By button ▸ Remote reset ▸ Automatic time reset: 2, 4, 8 or 24 h ▸ Current restoration
Power supply		
CT powered	■	
Internal power supply	Long-life lithium cell, active flashing time >900 h, shelf life ≥20 years AC/DC version: back-up capacitor, max. 8 h	
External auxiliary supply	AC/DC version: 24—230 V AC/DC	
Housing	Polycarbonate, IP40	
Temperature range	–30 °C to +70 °C	

Equipment set	Page	Order no.
1 Display unit		
Sigma F+E 2.0		37-2111-101
Sigma F+E 2.0 AC/DC		37-2121-101
Sigma F+E 3 2.0		37-5113-101
Sigma F+E 3 2.0 AC/DC		37-5123-101
3 Single-phase current sensors	50	

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External signal lamp	58
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Dimension drawing see on page 132 ff | M3