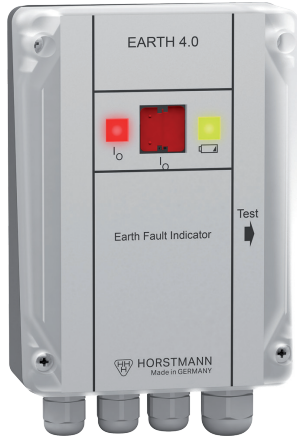


# Earth 4.0

Earth fault indicator



Earth 4.0

## Product features

- Indication of earth fault currents by LED and mechanical flag
- Remote indication, test and reset via relay contacts
- Battery status indication and remote indication via relay contact

## Your advantages

- Clear earth fault indication via LED and mechanical flag
- Connection to remote monitoring
- Early warning of battery end-of-life

The Earth 4.0 is an earth fault indicator. It is designed to detect, locally indicate and remotely report earth fault currents in medium voltage distribution networks. A wired earth fault current transformer monitors the summation current of all three conductors. The electronics of the display unit evaluates the measurements. When the fault sensitivity threshold is exceeded, a red LED will start flashing and a mechanical flag becomes visible. In addition to that, the remote indication contacts are energised. A system-specific external signal lamp is optionally available.

| Technical data                    | Earth 4.0                                                                                                                                                                                   |
|-----------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Earth fault indicator             | ■                                                                                                                                                                                           |
| $I_{E>}$ earth fault trip current | 25, 50, 60, 80 A <sup>1)</sup>                                                                                                                                                              |
| $t_{I_{E>}}$ response delay       | 80, 160 ms <sup>1)</sup>                                                                                                                                                                    |
| Accuracy                          | ±10 %                                                                                                                                                                                       |
| Indication                        | <ul style="list-style-type: none"> <li>■ 1 red LED, flash rate 2 s</li> <li>■ 1 yellow LED (battery status), flash rate 2 s</li> <li>■ Mechanical flag</li> </ul>                           |
| Remote signal/ communication      | <ul style="list-style-type: none"> <li>■ 2 relay contacts (change over) for earth fault indication</li> <li>■ 1 relay contact (change over) for battery status indication</li> </ul>        |
| Remote contact                    | Potential-free permanent and momentary contact (1 s)<br>Contact capacity: 230 V AC / 1 A / 62.5 VA max.;<br>220 V DC / 1 A / 60 A max.                                                      |
| Reset                             | <ul style="list-style-type: none"> <li>■ By button</li> <li>■ Remote contact</li> <li>■ Automatic time reset: 1, 2, 4 or 8 h</li> <li>■ Voltage restoration (220–240 V AC, ≥10%)</li> </ul> |
| Power supply                      |                                                                                                                                                                                             |
| CT powered                        | ■                                                                                                                                                                                           |
| Internal power supply             | Long-life lithium cell, shelf life ≥20 years, total flashing time ≥1,200 h                                                                                                                  |
| Housing                           | Polycarbonate, IP65                                                                                                                                                                         |
| Temperature range                 | –30 to +70 °C                                                                                                                                                                               |

1) Further trip currents and/or response delays on request.  
Dimension drawing in catalogue on page 158, M6

| Equipment set                   | Accessories          |
|---------------------------------|----------------------|
| 1 display unit Earth 4.0        | External signal lamp |
| 1 summation current transformer |                      |

## For installation on insulated cables

for Sigma *plus*



| Conductor Ø [mm] | Cable length [m] | Order no.   |
|------------------|------------------|-------------|
| 40–115           | 3.00             | 49-6013-016 |



| Conductor [mm] | Cable length [m] | Order no.   |
|----------------|------------------|-------------|
| 280–50, oval   | 3.00             | 49-6013-028 |



| Conductor [mm] | Cable length [m] | Order no.   |
|----------------|------------------|-------------|
| 350–50, oval   | 3.00             | 49-6013-027 |

## For installation on medium voltage cables

for Earth Zero, Earth Zero Flag, Earth 4.0



| Conductor Ø [mm] | Cable length [m] | Order no.   |
|------------------|------------------|-------------|
| 60–150           | 3.0              | 49-6013-029 |

## For installation on medium voltage cables

for Opto F+E 3.0



| Conductor Ø [mm] | Trip currents <sup>1)</sup> [A] | Order no.   |
|------------------|---------------------------------|-------------|
| up to 115        | 40, 80, 120 or 160              | 49-6014-009 |
| up to 115        | (10), (20), 40 or 80            | 49-6014-007 |



| Conductor Ø [mm] | Trip currents <sup>1)</sup> [A] | Order no.   |
|------------------|---------------------------------|-------------|
| 280 x 50, oval   | 80, 120, 160 or 200             | 49-6014-022 |

1) adjustable



| Conductor Ø [mm] | Trip currents <sup>1)</sup> [A] | Order no.   |
|------------------|---------------------------------|-------------|
| 350 x 50, oval   | 80, 120, 160 or 200             | 49-6014-021 |

1) adjustable

# Summation current sensors

## Summation current sensor, splittable

for Sigma D<sup>+</sup>, Sigma D<sup>++</sup>, ComPass B series



| Conductor Ø [mm] | Cable length [m] | Order no.   |
|------------------|------------------|-------------|
| 220–250          | 4.00             | 49-6023-020 |

# Accessories

For short-circuit and earth fault indicators and integrated voltage detecting systems

## Wall-mounted housings

for the installation of short-circuit and earth fault indicators as well as integrated voltage detecting systems outside the switchgear



W x H x D  
125 x 75 x 125 mm  
Order no.  
49-9001-001 bottom cable entry  
49-9001-002 rear cable entry



W x H x D  
125 x 175 x 125 mm  
Order no.  
V49-9001-004-001  
incl. earthing bar



W x H x D  
125 x 75 x 75 mm  
Order no.  
49-9001-006



W x H x D  
290 x 77 x 200 mm  
Order no.  
V49-9001-007-001  
incl. earthing bar

## External signal lamps

for installation outside the switchgear



| 3 LEDs                                                     | Order no.   |
|------------------------------------------------------------|-------------|
| 5 m connection cable, with battery, for permanent contact  | 49-0702-005 |
| 10 m connection cable, with battery, for permanent contact | 49-0702-010 |
| 15 m connection cable, with battery, for permanent contact | 49-0702-015 |



| Bicolour 3 LEDs red/green          | Order no.   |
|------------------------------------|-------------|
| 3 m connection cable, with battery | 49-0706-001 |



| Bicolour 1 LED red/green                                                    | Order no.   |
|-----------------------------------------------------------------------------|-------------|
| 2 m connection cable, with battery, without fibre optic cable (see page 57) | 49-0704-001 |