

ComPass series

PASSION FOR PERFECTION



Efficient monitoring

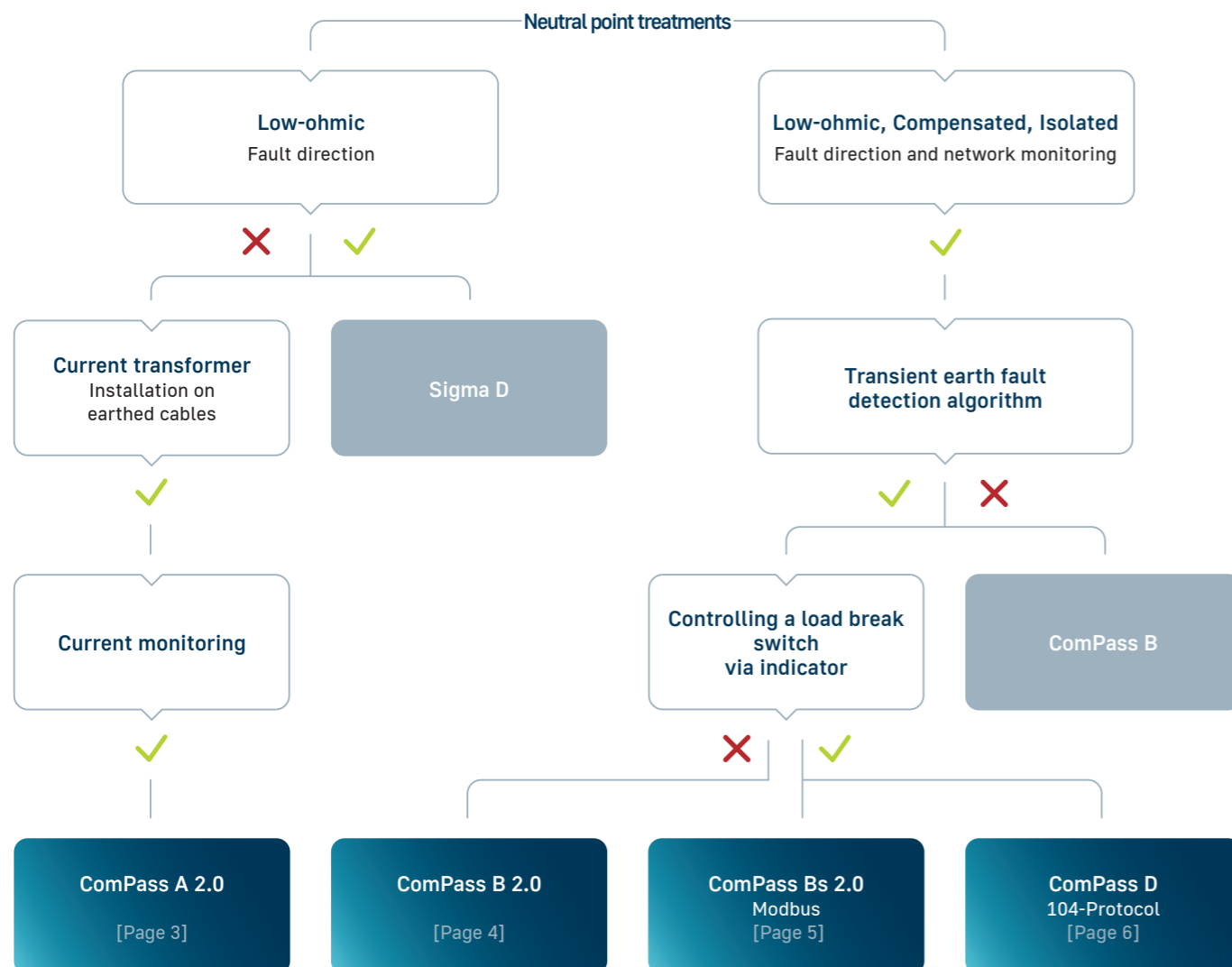
Through many years of experience, we at Horstmann know: Distribution network operators place great importance on the quality, durability, and reliability of the products they use.

High-quality and modern short-circuit and earth fault indicators with directional indication and monitoring functions, along with innovative system solutions, are the optimal approach to minimize effort and costs in fault location within the medium-voltage network.

Monitoring increases network availability and enables predictive maintenance. This allows detection of anomalies before disruptions occur.

This highly accurate network monitoring, combined with fault direction indicators, is offered by our ComPass series. ComPass captures essential network data and transmits high-precision measurements to the control center, providing the best overview of the network.

Which short-circuit and earth fault indicator is the right one for you?



ComPass A 2.0



When is the ComPass A 2.0 optimal for you?

- ▶ Load current monitoring
- ▶ Short-circuit and earth-fault detection for networks with low-ohmic neutral point
- ▶ Without directional fault indication

ComPass A 2.0 is a short-circuit and earth-fault indicator without directional fault indication. As a special feature, the device measures the load currents, displays them on the display, and reports them remotely via the integrated RS485 interface using the Modbus protocol.

Fault indication

- ✓ Short-circuit / earth short-circuit indication
- ✗ Directional fault indication
- ✗ Control function

Neutral Earthing System

- ✓ Low-ohmic
- ✓ Isolated
- ✗ Compensated

Power supply

- ✓ Long-life lithium cell
- ✓ External auxiliary supply (24-230V AC / DC)

Voltage coupling

- ✗ Capacitive
- ✗ Resistive

Communication

- ✓ Relay contacts (4)
- ✓ RS485 / Modbus-RTU
- ✗ USB port
- ✗ Ethernet / IEC 60870-5-104

Reset

- ✓ Manual / Remote
- ✓ Automatic
- ✓ Current supply restoration
- ✗ Voltage- / auxiliary supply restoration

ComPass B 2.0



When is the ComPass B 2.0 optimal for you?

- ▶ High-precision monitoring for network analysis
- ▶ Short-circuit and earth-fault detection in all networks with directional fault indication
- ▶ Distinct error indication and on-site readability through high-contrast OLED display

The ComPass B 2.0 is equipped with transient earth fault detection method. In contrast to the ComPass A 2.0, it features a USB port on the front. Through this, the device can be configured using the ComPass Explorer software. This software provides numerous functions to support device initialization and management.

Fault indication

- ✓ Short-circuit / earth short-circuit indication
- ✓ Directional fault indicator
- ✗ Control function

Neutral Earthing System

- ✓ Low-ohmic
- ✓ Isolated
- ✓ Compensated

Power supply

- ✓ Long-life lithium cell
- ✓ External auxiliary supply (24-230V AC / DC)

Voltage coupling

- ✓ Capacitive
- ✓ Resistive

Communication

- ✓ Relay contacts (4)
- ✓ RS485 / Modbus-RTU
- ✓ USB port
- ✗ Ethernet / IEC 60870-5-104

Reset

- ✓ Manual / Remote
- ✓ Automatic
- ✓ Current supply restoration
- ✓ Voltage- / auxiliary supply restoration

ComPass Bs 2.0



When is the ComPass Bs 2.0 optimal for you?

- ▶ High-precision monitoring for network analysis
- ▶ Short-circuit and earth-fault detection in all networks with directional fault indication
- ▶ Distinct error indication and on-site readability through high-contrast OLED display
- ▶ Integrated control function

As a special feature and difference from the ComPass B 2.0, the ComPass Bs 2.0 has an integrated switching function that allows the motor control of load break switches and grounding switches to be controlled via the 4 dedicated remote signalling contacts.

Fault indication

- ✓ Short-circuit / earth short-circuit indication
- ✓ Directional fault indicator
- ✓ Control function

Neutral Earthing System

- ✓ Low-ohmic
- ✓ Isolated
- ✓ Compensated

Power supply

- ✓ Long-life lithium cell
- ✓ External auxiliary supply (24-230V AC / DC)

Voltage coupling

- ✓ Capacitive
- ✓ Resistive

Communication

- ✓ Relay contacts (4)
- ✓ RS485 / Modbus-RTU
- ✓ USB port
- ✗ Ethernet / IEC 60870-5-104

Reset

- ✓ Manual / Remote
- ✓ Automatic
- ✓ Current supply restoration
- ✓ Voltage- / auxiliary supply restoration

ComPass D



When is the ComPass D optimal for you?

- ▶ High-precision monitoring for network analysis
- ▶ Short-circuit and earth-fault detection in all networks with directional fault indication
- ▶ Distinct error indication and on-site readability through high-contrast OLED display
- ▶ Integrated control function
- ▶ Communication via Ethernet

As a special feature and different from all other devices ComPass D has an Ethernet interface primarily supporting the IEC 60870-5-104 protocol and other Ethernet-based protocols.

Fault indication

- ✓ Short-circuit / earth short-circuit indication
- ✓ Directional fault indicator
- ✓ Control function

Neutral Earthing System

- ✓ Low-ohmic
- ✓ Isolated
- ✓ Compensated

Power supply

- ✓ Long-life lithium cell
- ✓ External auxiliary supply (24-230V AC / DC)

Voltage coupling

- ✓ Capacitive
- ✓ Resistive

Communication

- ✓ Relay contacts (4)
- ✗ RS485 / Modbus-RTU
- ✓ USB port
- ✓ Ethernet / IEC 60870-5-104

Reset

- ✓ Manual / Remote
- ✓ Automatic
- ✓ Current supply restoration
- ✓ Voltage- / auxiliary supply restoration

Combination options

with Wega 1 / Wega 1 V

Wega 1 and Wega 1 V are three-phase voltage detecting systems for medium voltage networks. The test function built into the front allows the display to be tested in the installed and de-energised state. Shielded or unshielded cables with flat connectors or system connectors can be used as connecting cables.



with Wega 2 / Wega 2 V

Wega 2 and Wega 2 V have the same range of functions as Wega 1 and Wega 1 V, but additionally offer two independent relay contacts for remote signalling and interlock purposes. The green and red LEDs (green: U=0 and red: U≠0) provide feedback on the relay switch positions.



The Wega V variants additionally enable a fast and easy initialization through phase-selective rotary switches, which are used to set the C2 value correctly via the display.

Advantages at a glance

- ▶ Secure voltage coupling of ComPass series – Retrofit ready
- ▶ Quality Made in Germany – Meets the highest quality standards
- ▶ Tool-free installation – Simple and quick assembly
- ▶ Integrated maintenance test – Maintenance-free
- ▶ Fully encapsulated electronics – High operational reliability under all climatic conditions



ComPass series overview



Function	ComPass A 2.0	ComPass B 2.0	ComPass Bs 2.0	ComPass D
Short-circuit indication / earth short-circuit indication	■	■	■	■
Earth fault indication	■	■	■	■
Directional indication	—	■	■	■
Monitoring	■	■	■	■
Control function and programmable logic	—	—	1 switchgear	2 switchgears
Neutral point treatment				
Low-ohmic	■	■	■	■
Isolated	■	■	■	■
Compensated	—	■	■	■
Short-circuit trip current values				
I>> Short-circuit trip current / earth short-circuit current	20–2.000 A	10–2.000 A, self-adjustment	10–2.000 A self-adjustment	10–2.000 A self-adjustment
tI>> Response delay	40 ms–60 s	20 ms–60 s	20 ms–60 s	20 ms–60 s
Earth fault detection methods				
IE> Earth fault trip current	20–1.000 A	10–1.000 A	10–1.000 A	10–1.000 A
IEP> Active residual current cos φ	—	1–200 A	1–200 A	1–200 A
IEQ> Reactive current sin φ	—	1–200 A	1–200 A	1–200 A
IET> Transient earth fault method	—	10–500 A	10–500 A	10–500 A
VNE> Neutral point displacement voltage (permanent earth fault)	—	1–100%	1–100%	1–100%
IE> Pulse (stroke)	1–200 A	1–200 A	1–200 A	1–200 A
Response delay	40 ms–60 s	40 ms–60 s	40 ms–60 s	40 ms–60 s
Reset				
Manual / Remote	■ / ■	■ / ■	■ / ■	■ / ■
Automatic time reset	■	■	■	■
Current- / voltage- / auxiliary supply restoration	■ / - / -	■ / ■ / ■	■ / ■ / ■	■ / ■ / ■
Test				
Manual / Remote	■ / ■	■ / ■	■ / ■	■ / ■
Communication				
Relay contacts	4	4	4	4
Ethernet / IEC 60870-5-104	—	—	—	■
RS485 / Modbus-RTU	■	■	■	—
USB port	—	■	■	■
Parameter setting				
Manual / remote / software via USB	■ / ■ / -	■ / ■ / ■	■ / ■ / ■	■ / ■ / ■
Power supply				
Long-life lithium cell / capacitor	■ / -	■ / -	■ / -	■ / -
CT powered	—	—	—	—
External auxiliary supply [V AC / DC]	24–230	24–230	24–230	24–230
Number of current transformers (CT) / current sensors (S)				
Phase current / summation current	3 / - (S)	3 / -, opt. 3 / 1 or 2 / 1 (S)	3 / -, opt. 3 / 1 or 2 / 1 (S)	3 / -, opt. 3 / 1 or 2 / 1 (S)
Voltage coupling				
Capacitive / resistive	—	■ / ■	■ / ■	■ / ■

In case of any questions, please do not hesitate to contact us:

Dipl.-Ing. H. Horstmann GmbH | Humboldtstraße 2–10 | 42579 Heiligenhaus | Germany
 T +49 2056 976 0 | info@horstmanngbh.com | www.horstmanngbh.com