

Product matrix



You will find what you are looking for

Short-circuit and earth fault indicators

Function	Rotor indicator	Fluid indicator	Opto F 3.0 / Opto F+E 3.0	Alpha M / Alpha E	Sigma plus / Sigma plus AC/DC	Sigma 2.0 / Sigma 2.0 AC/DC	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	Sigma D	Sigma D+	Sigma D++	ComPass A	ComPass A 2.0	ComPass B	ComPass B 2.0	ComPass Bs 2.0	ComPass BN only for low voltage networks	Earth Zero	Earth Zero Typ Flag	Earth 4.0	Trip Flag ext. indicator with remote monitoring
Short-circuit indication / earth short-circuit indication	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Earth fault indication	-	-	■ (F+E 3.0)	-	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Directional indication	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Monitoring	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Control function and programmable logic	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Neutral System																					
Short-term / low-impedance earthed	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Isolated earthed	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Resonant earthed (with Petersen coil)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Short-circuit trip current values																					
I>> Short-circuit trip current / earth short-circuit trip current	150–2,000 A (fixed settings)	400, 600, 1,000 A (fixed settings)	400, 600, 800 or 1,000 A	400, 600, 800, 1,000 A	(100), 200, 300, 400, 600, 800, 1,000 A, self-adjustment	200, 300, 400, 600, 800, 1,000, 2,000 A, self-adjustment	200, 300, 400, 600, 800, 1,000, 2,000 A, self-adjustment	200, 300, 400, 600, 800, 1,000, 2,000 A, self-adjustment	DIP: 200, 300, 400, 600, 800, 2,000 A, self-adjustment SW: 50–2,000 A	DIP: 200, 300, 400, 600, 800, 2,000 A, self-adjustment SW: 50–2,000 A	DIP: 200, 300, 400, 600, 800, 2,000 A, self-adjustment SW: 50–2,000 A	20–2,000 A	10–2,000 A, self-adjustment	50–2,000 A	10–2,000 A, self-adjustment	10–2,000 A self-adjustment	50–2,000 A	-	-	-	-
t>> Response delay	100 ms	200 ms	40, 60, 80, 100, 200, 300 or 500 ms	100 ms	40, 80, 200, or 300 ms	40, 80 ms	40, 80 ms	40, 80, 200, 300 ms	DIP: 40, 80 ms, SW: 40 ms–60 s	DIP: 40, 80 ms, SW: 40 ms–60 s	DIP: 40, 80 ms, SW: 40 ms–60 s	40 ms–60 s	20 ms–60 s	40 ms–60 s	20 ms–60 s	20 ms–60 s	40 ms–60 s	-	-	-	-
Earth fault detection methods																					
IE> Earth fault trip current	-	-	F+E 3.0: 10, 20, 40 or 80 A or 40, 80, 120 or 160 A	-	20, 40, 60, 80, 100, 120 or 160 A	-	20, 40, 60, 80, 100, 120 or 160 A	20, 40, 60, 80, 100, 120 or 160 A	DIP: off, 20, 40, 60, 80, 100, 120, 160 A SW: 20–1,000 A	DIP: off, 20, 40, 60, 80, 100, 120, 160 A SW: 20–1,000 A	DIP: off, 20, 40, 60, 80, 100, 120, 160 A SW: 20–1,000 A	20–1,000 A	10–1,000 A	20–1,000 A	10–1,000 A	10–1,000 A	10–1,000 A	25, 50, 75, 100 A	25, 50, 75, 100 A	25, 50, 60, 80 A	-
IEP> Active residual current cos φ	-	-	-	-	-	-	-	-	5–200 A	5–200 A	5–200 A	-	-	1–200 A	1–200 A	1–200 A	-	-	-	-	-
IEQ> Reactive current sin sin φ	-	-	-	-	-	-	-	-	5–200 A	5–200 A	5–200 A	-	-	1–200 A	1–200 A	1–200 A	-	-	-	-	-
IET> Transient earth fault method	-	-	-	-	-	-	-	-	10–100 A	10–100 A	10–500 A	-	-	-	-	-	-	-	-	-	-
VNE> Neutral point displacement voltage (permanent earth fault)	-	-	-	-	-	-	-	-	-	-	-	-	-	0–100 %	1–100 %	1–100 %	-	-	-	-	-
ΔIE> Pulse (stroke)	-	-	-	-	-	-	-	-	1–100 A	1–100 A	1–100 A	-	1–200 A	-	1–200 A	1–200 A	-	-	-	-	-
Response delay	-	-	60, 100 or 200 ms (F+E 3.0)	-	80 or 160 ms	-	80, 160 ms	60, 80, 200 or 300 ms	DIP: 80, 160 ms, SW: 40 ms–60 s	DIP: 80, 160 ms, SW: 40 ms–60 s	DIP: 80, 160 ms, SW: 40 ms–60 s	40 ms–60 s	40 ms–60 s	40 ms–60 s	40 ms–60 s	40 ms–60 s	40 ms–60 s	80, 160 ms	80, 160 ms	80, 160 ms	-
Reset																					
Manual/remote	■/-	-	■/■	M: ■/- E: ■/■	■/■	■/■	■/■	■/■	■/■	■/■	■/■	■/■	■/■	■/■	■/■	■/■	■/■	■/■	■/■	■/■	■/■
Automatic time reset	-	■	■	-	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Current-/voltage-/auxiliary supply restoration	-	-	-/■/■	-	■/-/■ AC/DC: ■/■	-	■/-/■ AC/DC: ■/■	-	■/-/■ AC/DC: ■/■	■/-/■ AC/DC: ■/■	■/-/■ AC/DC: ■/■	■/-/■	■/-/■	■/■/■	■/■/■	■/■/■	■/■/■	-/■/-	-/■/-	-/■/-	-/■/-
Test																					
Manual/Ferntest	-	-	■/■	■/-	■/■	■/■	■/■	■/■	■/■	■/■	■/■	■/■	■/■	■/■	■/■	■/■	■/■	■/■	■/■	■/■	■/■
Communication																					
Relay contacts	on request	on request	F 3.0: 1 F+E 3.0: 2	1	2	1	2	3	4	4	4	4	4	4	4	4	4	1	1	3	4
RS485/Modbus-RTU	-	-	-	-	-	-	-	-	-	-	-	■	■	■	■	■	■	-	-	-	-
USB port	-	-	-	-	-	-	-	-	■	■	■	-	-	■	■	■	-	-	-	-	-
Parameter setting																					
Manual/remote/software via USB	-	-	■/-/-	■/-/-	■/-/-	■/-/-	■/-/-	■/-/-	■/-/■	■/-/■	■/-/■	■/■/-	■/■/■	■/■/■	■/■/■	■/■/■	■/■/■	■/■/-	■/-/-	■/-/-	■/-/-
Power supply																					
Long-life lithium cell/capacitor	-	-	■	■ (E)	■	■/-	■/-	■/-	■	■	■	■	■	■	■	■	■	■	■	■	■
CT powered	■	■	-	-	■ AC/DC: -	■ AC/DC: -/■	■ AC/DC: -/■	■ AC/DC: -/■	■	■	■	-	-	-	-	-	-	■	■	■	■
External auxiliary supply [V AC/DC]	-	-	24–60 V AC, 12–110 V DC	-	-	24–230	-	24–230	-	24–230	-	24–230	-	24–230	24–230	24–230	24–230	-	-	-	24 V DC ≥0.01 Ws
Number of current transformers (CT)/current sensor (S)																					
Phase current/summation current	-	-	F 3.0: 3/- (CT) F+E 3.0: 3/1 (CT)	3/- (CT)	3/- or 2/1 (CT)	3/- (S)	3/- (S)	3/- (S)	3/- (S)	3/1, opt. 3/- (S)	3/-, opt. 3/1 (S)	3/- (S)	3/- (S)	2/1, opt. 3/- for IE> 10 A (S)	3/-, opt. 3/1 or 2/1 (S)	3/-, opt. 3/1 or 2/1 (S)	3/- (S)	-/1 (CT)	-/1 (CT)	-/1 (CT)	-
Voltage coupling																					
Capacitive/resistive	-	-	-	-	-	-	-	-	■/-	■/-	■/-	-	-	■/-	■/■	■/■	■/-	-	-	-	-

- Short-circuit and earth fault indicators
- Remote monitoring
- Voltage detectors and detecting systemens



Integrated voltage detecting systems

Function	Wega 1.2 C	Wega 1.2 C vario	Wega 2.2 C	Wega 3	Wega LRM based on IEC 61243-5	Wega T1
3 phase VDS according to IEC 61243-5	■	■	■	■	■	■
Capacitive voltage coupling for ComPass B series and Sigma D series	■	■	■	-	-	Coupling for transformers
Overvoltage indication	■	■	■	-	-	■
Integrated permanent maintenance test	■	■	■	-	-	■
Integrated display test (without auxiliary supply)	■	■	■	-	-	■
Fully enclosed electronics	■	■	■	-	-	■
Adjustable C2 capacity	-	■	-	-	-	-
Assembly set for retrofit	-	■	-	-	-	-
Nominal voltage / nominal frequency						
Nominal voltage of switchgear	1–52 kV	1–52 kV	1–52 kV	1–52 kV	1–52 kV	1–52 kV
Nominal frequency 50 Hz/60 Hz	■	■	■	■	■	■
Display						
LCD display / LED indication	■/–	■/–	■/■	■/–	–/–	■/–
Display powered by measured voltage	■	■	■	■	■	■
LCD symbols						
Voltage present	■	■	■	■	-	■
Threshold value: 0.1–0.45 x Vnom	■	■	■	■	-	■
Voltage present	■	■	■	■	-	■
Integrated maintenance test passed	■	■	■	-	-	■
Voltage present	■	■	■	-	-	■
Integrated maintenance test passed	■	■	■	-	-	■
Voltage signal too high (overvoltage)	■	■	■	-	-	■
Voltage not present	■	■	■	■	-	■
LRM interface						
Front accessible, fully featured LRM interface (L1/L2/L3)	■	■	■	Test point	■	Test point
Earth socket	■	■	■	■	■	■
Communication						
Relay contacts	-	-	■	-	-	-
Connections						
Flat connector	■	■	■	■*	■*	■
System connector (AMP)	■	■	■	■*	■*	■
Power supply						
External auxiliary supply	-	-	■	-	-	-

* Flat connector or system connector available

Remote monitoring solutions for underground networks

Function	Reporter 3.0	Reporter 4.0	ComPass AX12	ComPass BX12
SCADA	■	■	■	■
iHost	■	■	■	■
Data source	■	■	■ (integrated)	■ (integrated)
Short-circuit and earth fault indicator	■	■	■ (integrated)	■ (integrated)
Information				
Short-circuit and earth fault indication	■	■	■ (I)	■ (I+U)
Monitoring	-	■	■ (I)	■ (I+U)
Transmission of signal field strength	■	■	■	■
Communication				
Inputs				
Analogue	2 (4–20 mA)	8 (4–20 mA)	8 (4–20 mA)	8 (4–20 mA)
Digital	16	16	16	16
Modbus	-	47 Modbus (digital) 60 Modbus (analogue)	47 Modbus (digital) 60 Modbus (analogue)	47 Modbus (digital) 60 Modbus (analogue)
Outputs				
Relay contacts	-	Relay contacts	Relay contacts	Relay contacts
Interface / protocol	-	Modbus	Modbus	Modbus
Power supply				
External auxiliary supply	-	(100–240 V AC)	(85–264 V)	(85–264 V)
Back-up battery (rechargeable)	-	■	■	■
Long-life lithium cell	■	-	■	■
Housing				
Material	Glas fibre reinforced polycarbonate	Glas fibre reinforced polyester	Glas fibre reinforced polyester	Glas fibre reinforced polyester
Degree of protection	IP66	IP66	IP66	IP66
Dimensions (W x H x D) [mm]	136 x 245 x 88	250 x 410 x 180	300 x 458 x 229	300 x 461 x 229
Cable entries	3	4	11	7
Locking	Screws	Padlock	Padlock	Padlock
Installation	Wall mounting	Wall mounting	Wall mounting	Wall mounting
Temperature range	-30 to +70 °C	-20 to +65 °C	-20 to +65 °C	-20 to +65 °C

iHost – Monitor your entire grid around the clock



- Data concentrator for short-circuit and earth fault indicators
 - Bundles and processes all data received from remote field devices
 - Provides data access at any time in various ways and devices
- Central management of all field devices – with one click
 - Grid monitoring: system overview, data analysis, health checks
 - Configuration and firmware updates from SCADA
- Data on demand
 - Customised visualisation of data and alarms
 - Individual notifications, generated automatically
- Embedded database
 - Grid data available from day one of installation
 - Flexible data provision for asset management, planning, engineers and further user

Voltage detectors / Phase comparators

Function	FL-I	Comet BL-I/ Comet BL-A	Comet BK-I/ Comet BK-A	Comet BS-I/ Comet BS-A	Compare 2.0	PG II
Environmental conditions						
Indoor*	■	BL-I: ■	BK-I: ■	BS-I: ■	■	■
Indoor and outdoor**	-	BL-A: ■	BK-A: ■	BS-A: ■	■	-
Self-test	-	■	■	■	-	-
Voltage indication						
Visual	-	■	■	■	-	-
Visual and audible	-	■	■	■	-	-
Nominal voltage [kV]						
5	-	■	-	-	-	■
6	-	-	-	-	-	■
10	■	■	-	-	-	■
20	■	■	-	-	-	■
30	-	-	-	-	-	■
5–10	-	-	-	■	■	-
6–10	-	■	■	-	-	-
10–20	-	■	■	■	■	-
20–30	-	■	-	■	■	-
20–36	-	-	-	-	■	-
Voltage range selectable						
Dismountable	-	-	-	■	■	-
Length [mm]****	1,270–1,370	1,270–1,570	900–955	1,570	1,420	1,220–1,420
Weight [g]****	700–1,000	700–1,000	750–850	BS-I: 850 BS-A: 1,000	900	1,600

* Can be used outside, but not under wet conditions!
 ** Can be used under wet conditions.
 *** Other voltage ranges on request.
 **** Length and weight vary depending on the version.