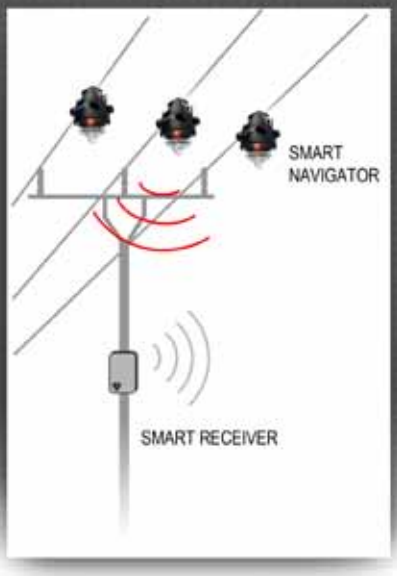
BHR-SM/4

Manufactured by:

HORSTMANN GmbH

SMART NAVIGATOR

Overhead Fault Indicator with SCADA Interface



- Fast and easy fault detection via smart receiver
- Distinguishes between momentary vs. permanent fault detection
- Provides loss of current/voltage
- Indicates communication failure
- Shows if battery is low
- SMART receiver with relay Outputs

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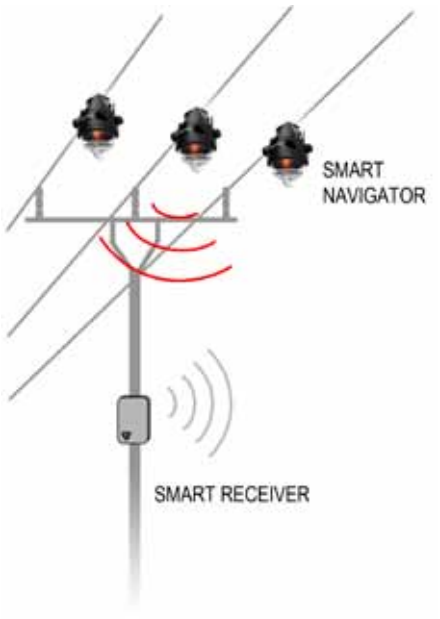
The SMART NAVIGATOR overhead faulted circuit indicator is designed for smart grid automation applications. The SMART NAVIGATOR can be installed on overhead transmission and distribution power lines up to 46 kV and provides event based fault status in addition to continuous circuit data.

The SMART NAVIGATOR can be integrated into an existing SCADA or smart grid system and can operate in various communication environments. A pole mounted concentrator receives and manages all Navigator data as an access into a communication environment.

The SMART NAVIGATOR detects fault events and provides digital and analog fault data information for intelligent switching and restoration decisions. A conductor temperature sensor is available as an important diagnostic tool to evaluate line sag and potential hotspots.

The load leveling and load memory features enable the unit to automatically set fault trip current rating in relation to peak load current. Once the unit detects fault current above its trip current rating the FCI sends a signal to the pole mounted concentrator and begins to flash a bright red blinking LED. In addition to event based fault identification, the SMART NAVIGATOR HV also communicates fault data, load current and status data.

Technical Specifications	Smart Navigator
Electrical Data	Correspond to ANSI/IEEE Std. 495-2007
Trip current range	50-1200 A
Temperature range	-40 to +85°C
Accuracy	±10 % @ 20° C
Load tracking initiated	15 A
Current reset	>3 A
Load memory	72 h
Auto reset time	4 h
Power source	2 lithium batteries, replaceable, 20 years shelf life
Operating voltage	≤ 46 kV L-L
Current withstand	25 kA /1s
Indication	Bright red LED
Total indicating time	>500 h
Flashing frequency	30 per min.
Adjacent cable immunity	0.25 m (10") @ 10 kA
Conductor temperature measurement range	-40 to +130° C
Conductor temperature measurement accuracy	±5° C
Transmitter data	
Frequency/power/modulation	2.4 Ghz mW/MSK
Range	>30 m (>100 ft) Line-of-sight
Reporting cycle	15 minutes
Mechanical data	
Weight	420 g
Cable diameter range	8-29 mm (0,31 - 1,15 ")
Current transformer	Closed core stainless steel
Casing material	Glass-fibre reinforced plastic / UV stable
EMI	IEC 61000-4-2 (ESD), IEC 61000-4-3 (HF)



SMART RECEIVER DNP3/2.0

The SMART RECEIVER DNP3/2.0 is part of a monitoring system for overhead lines used for energy distribution. It receives status information about the overhead lines over a wireless link from SMART NAVIGATOR overhead line Faulted Circuit Indicators. The SMART RECEIVER DNP3/2.0 converts the status information into the Distributed Network Protocol (DNP3).

Technical Specification	Smart Receiver
Short Range Radio	• Frequency: 2.400 GHz • Transmit Power: 0 dBm • Range: 100 feet (line-of-sight)
Slots's	• Micro SD Card (up to 4 GB)
Protocols	• DNP3 IP • DNP3 Serial • [Web server functionality]
Network Services	• [DNP3 IP Server or Client mode (IP port 20000)] • [FTP Server (RFC959) passive mode (IP port 21)] • [SMTP Client (RFC821)] • [System/DNP3 configuration interface IP port] • [ARP (RFC826)] • [DHCP client or fixed IP-address] • [SNTP (simple network time protocol) RFC958]
Power Supply	• 12 – 24V DC +/- 10 %, 70 mA average
Indication	• LEDs for Power, RF Communication, I/O Communication
Interfaces	• SMA connector for 2.4 GHz antenna • RJ-45 Serial RS-232 Port DNP3 Serial • 9 pin D-SUB Serial RS-232 Port DNP3 serial • Connector for power supply and two digital inputs • USB Mini 2.0 for local access and configuration • SMA connector for GSM/GPRS antenna • PMU Interface
Environmental	• Operating temperature: -40 °C... +85 °C • EMC: CE Standards
Mechanical	• Housing Material: Aluminium, Silver-colored • Two holes for wall mounting • Size (L x W x D): 122 (110) x 41 x 74 mm • Weight: 500 g
Approvals	• FCC: Part 15.247, FCC ID: YQVHHH002 • Industry Canada: RSS-210, IC: 9199A-HHH002

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