

VOLTAGE DETECTING AND MONITORING SYSTEM (1)

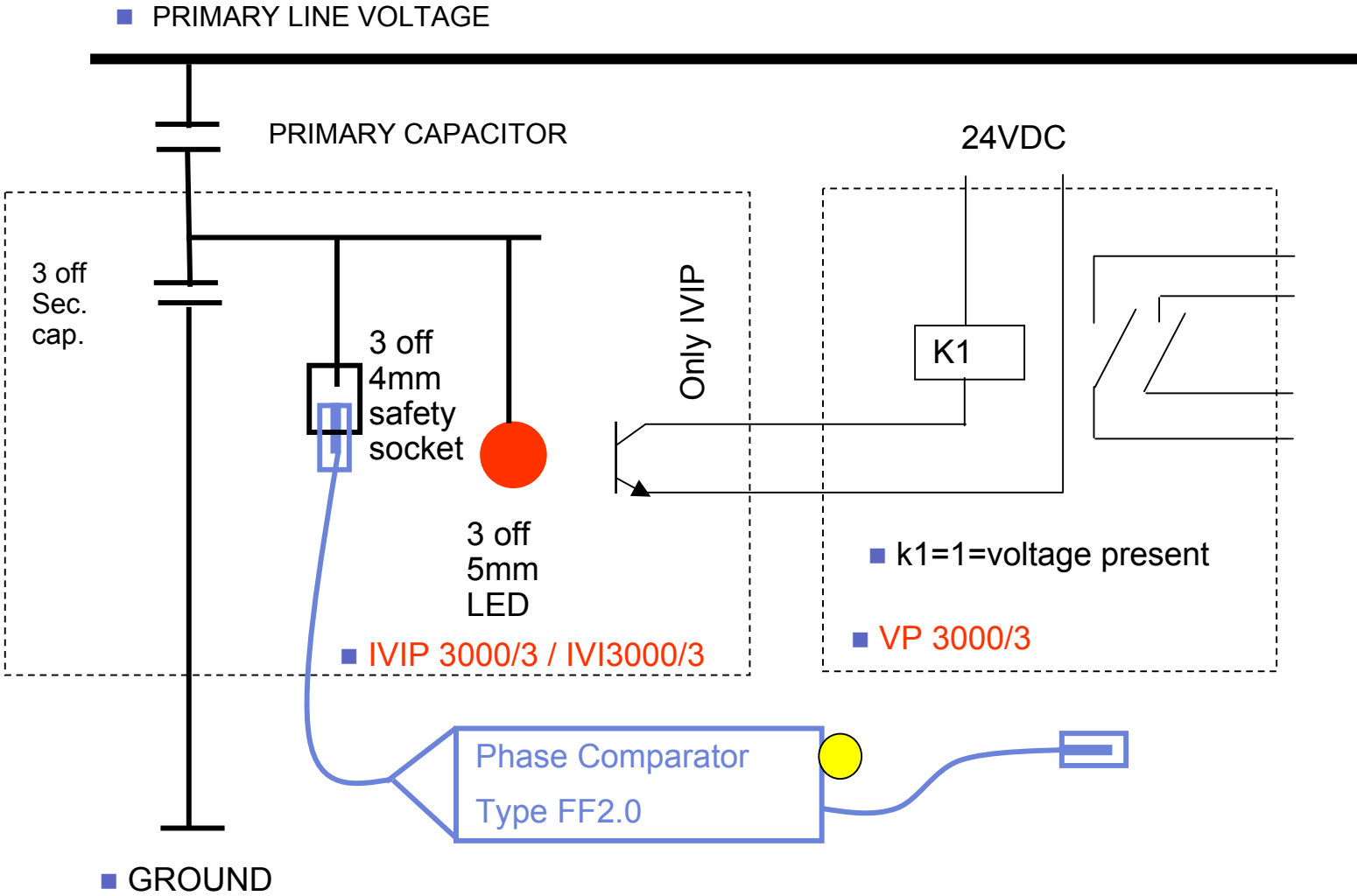
- Hegna Electronics AS manufacture a wide range of auxiliary products for medium voltage systems.
 - **PRODUCT OVERVIEW:**
 - IVI 3000/3 INTEGRATED VOLTAGE PRESENT INDICATOR UNIT.
 - IVIP 3000/3 INTEGRATED VOLTAGE PRESENT OR VOLTAGE ABSENT INDICATOR UNIT WITH GALVANIC ISOLATED DIGITAL OUTPUT FOR REMOTE INDICATION.
 - VP 3000/3 REMOTE INDICATION OF VOLTAGE PRESENT OR VOLTAGE ABSENT.
 - FF1.1 AND FF2.0 PHASE COMPARATOR.
 - VI 3000/1 SEPARABLE VOLTAGE PRESENT INDICATOR
 - ARC203 ARC DETECTION UNIT.
 - SF2100/1 VOLTAGE PRESENT DETECTION SYSTEM.
 - SP2000 POWER SUPPLY FOR SF2100/1.
 - C2m SECONDARY CAPACITOR HOUSING
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IVI 3000/3, IVIP3000/3 , VP3000/3 and FF 2,0 SYSTEM OVERVIEW (3)



IVI3000/3, IVIP3000/3 , VP3000/3 and FF2,0

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**Phase
Comparator
Type FF2.0**

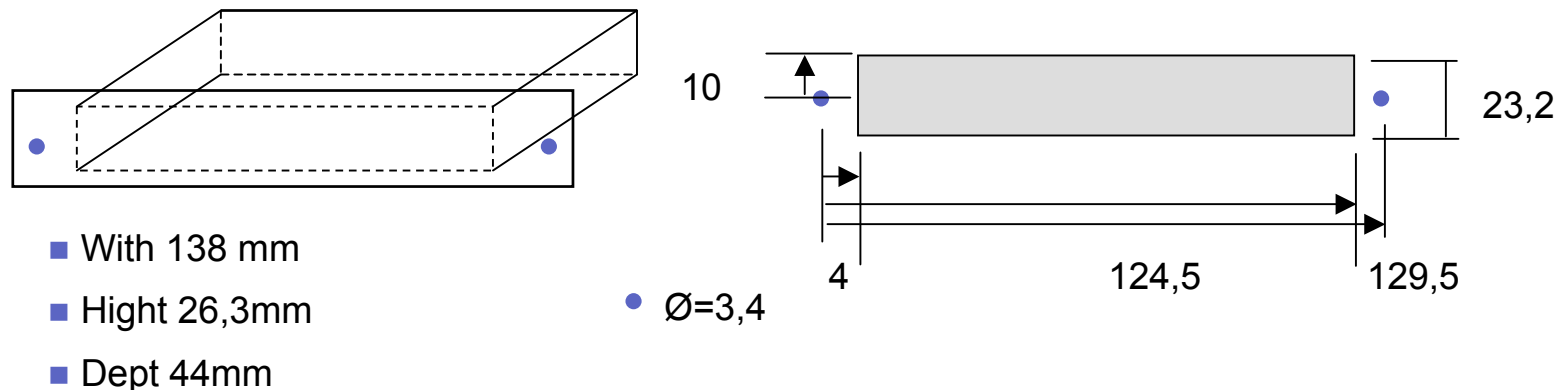
**Integrated voltage
present indicator
IVI and IVIP
3000/3**

**Remote voltage
present/absent
unit
VP3000/3**

IVI 3000/3 INTEGRATED CAPACITIVE COUPLED VOLTAGE PRESENT / VOLTAGE ABSENT INDICATOR UNIT (5)

Technical description.

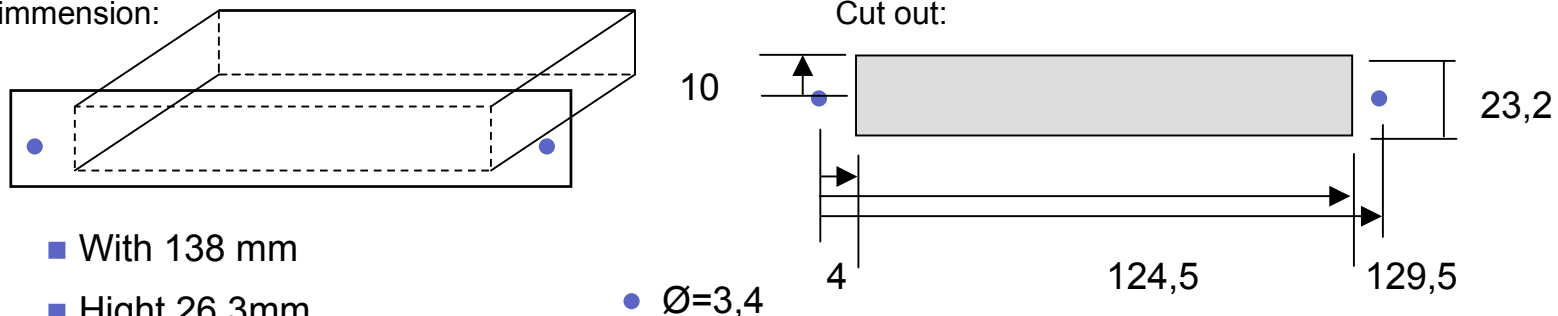
- IVIP 3000/3 Integrated Capacitive Coupled Voltage Detecting Unit for HR-system (90V) according to IEC 61243-5
- Indication: 3 off long life low energy LED.
- Phase cable: Type COAX RG58. Length 1,0m. Termination: L1,L2 and L3, insulated female receptacles 6,3x0,8 mm
- Ground cable: Length: 0,5m. Termination: Cable lug M8. Type of cable: RADOX RXL 125 Cross section 0,5mm²
- Other cable length and termination details upon request.
- 3 off 4mm safety sockets (L1 to L3) compatible with shrouded plugs on FF2.0 Phase Comparator.
- Integrated set of secondary capacitors for voltage matching. Capacitor value available in pF values: 500, 750, 1000, 1500, 2350, 3400, 4700 and 6800. Voltage range 1600V.
- Degree of protection: Front IP54 Rear IP24. Weight: 0,2 kg. Fixing: 2 off 3mm screws
- Temperature range: -25 to + 55⁰C
- Easy to test. Inject an adjustable AC signal into the 4mm safety socket.
- Dimension: Cut out:



IVIP 3000/3 INTEGRATED CAPACITIVE COUPLED VOLTAGE PRESENT / VOLTAGE ABSENT INDICATOR WITH DIGITAL OUTPUT FOR REMOTE INDICATION. (6)

Technical description.

- IVIP 3000/3 Integrated Capacitive Coupled Voltage Detecting Unit for HR-system (90V) according to IEC 61243-5
- Indication: 3 off long life low energy LED.
- Phase cable: Type COAX RG58. Length 1,0m. Termination: L1,L2 and L3, insulated female receptacles 6,3x0,8 mm
- Ground cable: Length: 0,5m. Termination: Cable lug M8. Type of cable: RADOX RXL 125 Cross section 0,5mm²
- Other cable length and termination details upon request.
- 3 off 4mm safety sockets (L1 to L3) compatible with shrouded plugs on FF2.0 Phase Comparator.
- Integrated set of secondary capacitors for voltage matching. Capacitor value available in pF values: 500, 750, 1000, 1500, 2350, 3400, 4700 and 6800. Voltage range 1600V.
- Degree of protection: Front IP54 Rear IP22. Weight: 0,2 kg. Fixing: 2 off 3mm screws
- Output to VP 3000/3 or other type of monitoring system. Signal pull down. Max load 35mA 24VDC. Output galvanic isolated (5kV). Monitor phase L1,L2 and L3. Output high if voltage is present on one of the phases.
- Temperature range: -25 to + 55°C.
- Easy to test. Inject an adjustable AC signal into the 4mm safety socket.
- Dimension:



- With 138 mm
- Height 26,3mm
- Depth 44mm

VP 3000/3 REMOTE INDICATION OF VOLTAGE PRESENT OR VOLTAGE ABSENT (7)

Technical description.

- VP 3000/3 Remote indication of primary line L1, L2 and L3 voltage present or voltage absent.
 - Input signal from IVIP 3000/3.
 - Output signal: 2 off voltfree contactcs. Rated 230V10A.
 - Power supply 24VDC 20mA.
 - Degree of protection: IP20, Weight: 0,1 kg. Fixing: Snap on DIN Rail.
 - Temperature range: -25 to + 55°C.
 - Dimmension: Hight 70mm, Width 100mm, Dept 30mm.
 - Termination: Male receptacles 6,3 x 0,8mm.
 - Cable between IVIP3000/3 and VP 3000/3: RADOX RXL 125 Cross section 0,5mm². Standard lenght available. 0,5 1,0 or 1,5 m. Other lenght upon request.
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- View picture of VP3000 on page 4.

PHASE COMPARATOR TYPE FF 2.0

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- TECHNICAL DETAILS.
- Phase Comparator is designed for comparing phases using the signal available from capacitive coupled voltage detecting system, designed according to HR-system (90V) IEC 61243-5.
- Phase Comparator FF2.0 with shrouded 4 mm plugs is designed for use with capacitive coupled voltage detecting system equipped with 4 mm safety socket. Fits the 4mm safety socket on IVI3000/3 and IVIP3000/3.
- Standard lead lengths 2 x 1m. Other lengths upon request.
- Clear light indication for discrepancy between two phases $> 34^{\circ}$
- Temperatur range: -25 to +55 $^{\circ}\text{C}$.



PHASE COMPARATOR TYPE FF1 1.

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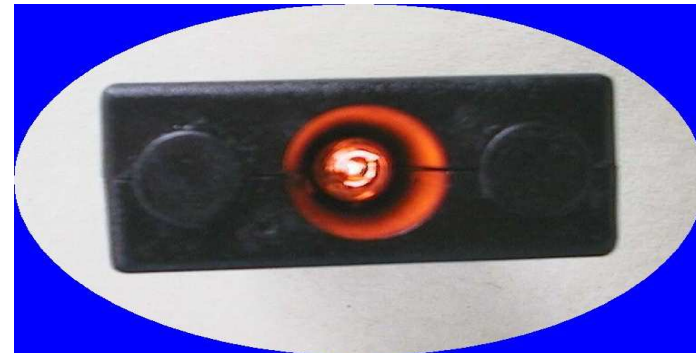
- TECHNICAL DETAILS.
- Phase Comparator is designed for comparing phases using the signal available from capacitive coupled voltage detecting system. (HR-system (90V))
- Phase Comparator FF1.1 with 4 mm plugs is designed for use with capacitive coupled voltage detecting system equipped with 4 mm socket. (Older system without safety socket). FF1.1 have connecting lead with retractable shrouds.
- Standard lead lengths 1m. Other lengths upon request.
- Clear light indication for discrepancy between two phases $> 34^{\circ}$
- Temperatur range: -25 to $+50$ °C.



VI3000/1 SEPARABLE VOLTAGE PRESENT INDICATOR (10)

TECHNICAL DETAILS.

- Compact portable voltage present indicator for indoor and outdoor use according to IEC61243-5.
- Indication: Long life neon lamp.
- Countersunk mounted lamp for better protection.
- Low weight, only 50 grams.
- Environmental conditions: -25 to +55 C°. Max. 90% humidity.



FIBRE-OPTICAL ARC DETECTION UNIT – ARC203 (11)

- Fast acting ARC detection unit with 3 off fibre optic sensors for detection of an arc.
- Standard length of fibre optical sensor cables 1,5m. Other length upon request.
- Fast acting. Response time < 20ms.
- External power supply 24VDC 20mA.
- Power ok LED indication.
- Output for external alarm.
- Selectable external reset or auto reset.
- Output: Voltage free contact 10A230VAC.
- Cost effective and easy to install.
- Protection: Fibre optical head IP54. Control unit IP20. Temperature range -25 to +55 C°.



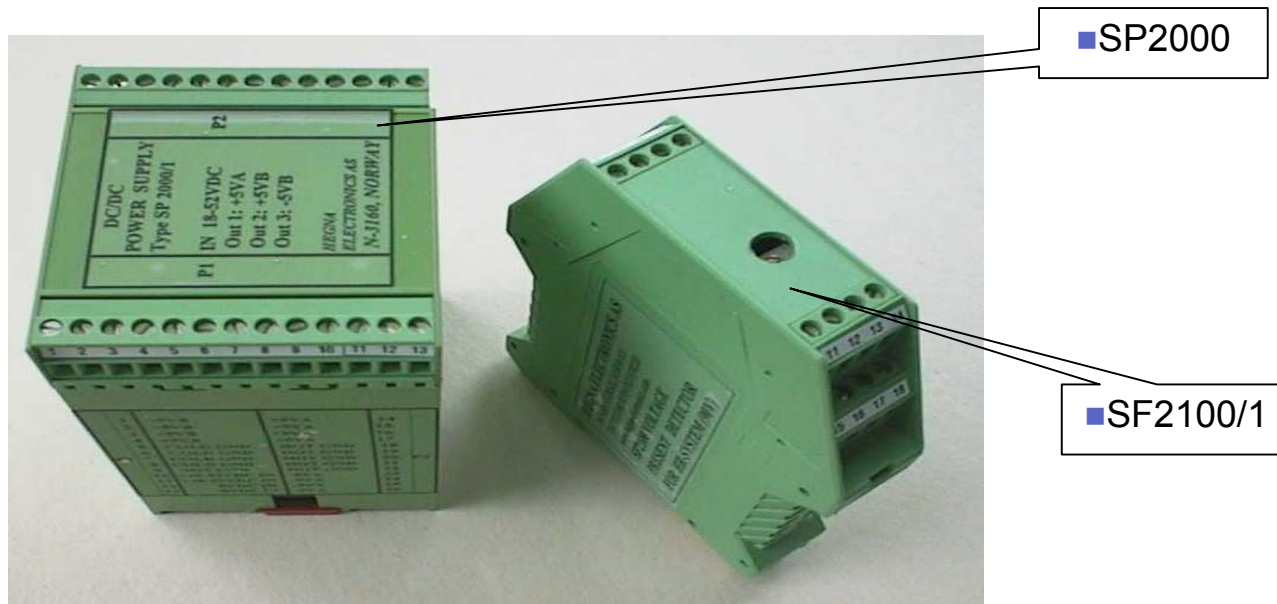
PHASE VOLTAGE PRESENT SENSOR SYSTEM SF2100/1 (12)

- **SF 2100/1 Voltage Present Sensor System detect voltage present or absent from capacitive coupled voltage detecting system.**
- **SF 2100/1 Voltage Present Sensor System and SP2000 Power Supply are specially designed to withstand voltage peaks/transient that occurs in capacitive coupled voltage detecting system.**
- **Input signal type tested with 2kV in 1 min.**
- **High input impedance >175M Ω . Extremely low current consumption on capacitive coupled voltage detecting system. Can be used with HR-system (90-70V) and MR-system (30-20V).**
- **Adjustable set point for signal from 10VAC to 200VAC**
- **Output: Volt free NO/NC contact. Max. 10A 230VAC.**
- **Houseing: 99 x 22,5 x 112 mm (hxwxd)**
- **Protection: IP20. Temperature range -25 to +50 C⁰. Mounting: DIN rail.**
- **Special developed power supply – See SP2000 next page.**
- **Pictures: See page 13.**

SPECIAL POWER SUPPLY SP2000

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- Power supply SP2000 are available in two versions. SP2000/18-52, input voltage 18-52VDC and SP2000/110, input voltage 110VDC+/-10%.
- Power supply SP2000/xx is a special designed power supply with high galvanic isolation to prevent upstream connected control equipment against voltage transients.
- One off SP2000/xx can supply up to 3 off SF2100/1.
- Power consumption with 3 off SF2100/1 connected < 5W.
- Protection: IP20. Temperature range -25 to +50 C⁰. Mounting: DIN rail.
- Housing: 75 x65 x 105 mm (DxWxH).



Secondary capacitor housing C2m/

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- Secondary capacitor housing C2m is a 3-phase set of voltage matching capacitors for use in capacitive coupled voltage detecting system. It may be used with SF2100/1.
- Capacitors voltage range 1600V.
- Wide range of capacitor sizes available. Values in pF: 500, 750, 1000, 1500, 2350, 3400, 4700 and 6800.
- Protection: IP20. Temperature range -25 to +55 C°. Mounting: DIN rail.
- Housing: Hight 70mm, Width 100mm, Dept 20mm.

