

CBS-400B

Type-B earth leakage monitoring and protection relay with 4 channels



Description

The earth leakage current intensity monitoring and protection relay (IEC 62020), compatible with the WGB series, for type B loads (IEC 60755) and with 4 totally independent channels.

High-performance relay with the following main features and functions:

- Electronic relay with relay output (up to 4 channels)
- Measures in alternating, continuous or mixed current (Type B according to IEC 60755)
- It measures and displays the current intensity of each of the 4 channels independently, through the connection to the WGB-series earth leakage transformer.
- Fully programmable with display showing instantaneous leakage current in real time on a high-contrast backlight display (display turns red when the relay trips).
- Integrated RS-485 (Modbus) communications
- Pre-alarm relay
- Event log
- Remote control input.

Applications

Earth leakage protection or monitoring of single-phase or three-phase electrical loads in alternating current with continuous components, with frequencies up to 2 kHz, such as:

- Variable speed drives
- UPS
- Photovoltaic Installations
- Electric Vehicle Charging
- Active filters.

Technical specifications

| | | |
|-------------------------------|---|---|
| Protection and monitoring | Type | B (IEC 60755) |
| | Sensitivity range $I_{\Delta n}$ | 0.03... 3A |
| | Delay t_{Δ} | INS, SEL, 0.02... 10s |
| | Transformer type | External, WGB series |
| | Test and Reset | By means of buttons |
| | Remote control | Possibility of remote testing and reset |
| | LED indication | Supply voltage, Leakage trip, Pre-alarm |
| | Display visualisation | Leakage current (instantaneous value) |
| | | Trip current (Display in red) |
| | | Parameter programming |
| | | Transformer disconnection of WGB events |
| Electrical features | Reading display | Full scale 10% |
| | Remote signalling | Alarm, Pre-alarm |
| | Auxiliary power supply | 85...264 Vca (50-60 Hz) / 120...370 Vcc |
| | Consumption | 15 VA |
| Timing response | Installation category | Cat III 300 V |
| | Response time for $1 \times I_{\Delta n}$ | ≤ 180 ms |
| Relay Outputs | Response time for $5 \times I_{\Delta n}^*$ | ≤ 30 ms |
| | Quantity | 4 |
| | Maximum open contact voltage | 230 Vca |
| Digital outputs | Maximum current | 6 A |
| | Maximum switching capacity | 1.5 VA |
| | Type | Opto-insulated |
| Digital input | Maximum voltage | 230 Vca |
| | Maximum current | 0.1 A |
| RS-485 Communications | Type | Potential free contact |
| | Insulation | 5.3 kV |
| | Communications protocol | Modbus RTU |
| | Speed | 9600 - 19200 - 38400 - 57600 - 115200 bps |
| Mechanical Features | Data bits / Stop bits | 8/11 - 2 |
| | Parity | Without-even-odd |
| | Fixing | DIN 46277 Rail (EN 50022) Panel: Using accessory (M5ZZF0000E3) |
| | Dimensions | 52.5 x 118 x 70 mm (3 modules) |
| | Weight | 300 g |
| | Transformer connection | RJ-45 connector |
| | Protection degree | IP 30 Terminals, front panel IP 40 |
| | Enclosure | V0 self-extinguishing plastic |
| Environmental characteristics | Humidity (without condensation) | 5...95% |
| | Maximum altitude | 2000 m |
| | Operating temperature | -10...+55 °C |
| Standards | IEC 62020, IEC 60755, IEC 60947-2-M | |

* The CBS-400B + WGB set guarantees a time ≤ 30 ms for $5 \times I_{\Delta n}$, so that in combination with the circuit breaker it must guarantee a time ≤ 40 ms to comply with IEC-60947-2-M.

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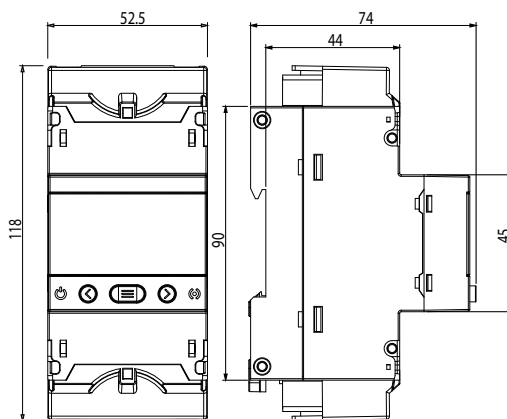
References

| Type | Code | $I_{\Delta n}$ | Delay | Power supply | Communications |
|---------------------------------------|--------------|----------------|-------------------------|--------------|----------------|
| CBS-400B | P12721. | 0.03... 3 A | 0.02 ... 10 s, INS, SEL | 230 Vca | RS-485 |
| ADP.CVM-E3-MINI/ RGU-100B/CBS-400B | M5ZZF00000E3 | - | - | - | - |

Transformer references

| Type | Code | Useful section | $I_{\Delta n}$ | Weight |
|---------|---------|----------------|----------------|--------|
| WGB-35 | P11B52. | 35 | 0.03... 3 A | 230 g |
| WGB-55 | P11B53. | 55 | 0.03... 3 A | 360 g |
| WGB-80 | P11B54. | 80 | 0.03... 3 A | 570 g |
| WGB-110 | P11B55. | 110 | 0.03... 3 A | 750 g |

Dimensions



Connections

