

# Product datasheet

Specifications



generator protection relay,  
PowerLogic P3G32 6CT 3Io ringlug  
4VT 12DI 14DO 110-230V DI110V  
RS485 RJ45 ANSI

REL53040

## Main

|                                |                                                                                                                                                                |
|--------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Range of product               | PowerLogic P3                                                                                                                                                  |
| Product or component type      | Protection relay                                                                                                                                               |
| Relay application              | Generator                                                                                                                                                      |
| product reference              | P3G32-CGG1A-AA1FA-BAAAB                                                                                                                                        |
| Mounting case size             | 30TE                                                                                                                                                           |
| Device mounting                | Flush                                                                                                                                                          |
| Mounting mode                  | Flush mounting                                                                                                                                                 |
| power supply                   | 48...230 V AC/DC                                                                                                                                               |
| measuring inputs               | : 1/5 A CT phase current 6<br>: 5/1 A CT residual current 2<br>: 1/0.2 A CT residual current 1<br>: 100 V/110 V VT voltage 4                                   |
| Number of sensors              | 0 temperature sensor(s)<br>0 arc sensor(s)                                                                                                                     |
| number of Digital Inputs (DI)  | 12                                                                                                                                                             |
| number of analogue inputs      | 0                                                                                                                                                              |
| number of Digital Outputs (DO) | 14 DO<br>1 watchdog                                                                                                                                            |
| number of analogue outputs     | 0                                                                                                                                                              |
| communication ports            | USB port 1 front<br>RS485 1 rear<br>RJ45 1 rear                                                                                                                |
| communication protocols        | IEC 61850 ed. 1<br>IEC 61850 ed. 2<br>IEC 60870-5-101<br>DNP3 TCP<br>Modbus TCP<br>EtherNet/IP<br>IEC 60870-5-103<br>DNP3<br>Modbus RTU<br>DeviceNet<br>SPABus |
| Cybersecurity                  | Password protection<br>Port hardening                                                                                                                          |

Disclaimer: This documentation is not intended as a substitute for and is not to be used for determining suitability or reliability of these products for specific user applications

|                       |                                             |
|-----------------------|---------------------------------------------|
| protection functions  | Underimpedance 21G                          |
|                       | Overfluxing (V/Hz) 24                       |
|                       | Synchro-check 25                            |
|                       | Undervoltage 27                             |
|                       | Positive sequence undervoltage 27P          |
|                       | Directional active underpower 32            |
|                       | Field loss (underimpedance) 40              |
|                       | Under reactance 21/40                       |
|                       | Negative sequence overcurrent 46            |
|                       | Thermal overload protection 49              |
|                       | Earth fault overcurrent 50N/51N             |
|                       | Phase overcurrent 50/51                     |
|                       | Breaker failure 50BF                        |
|                       | Switch ON to fault (SOTF) 21G               |
|                       | Switch ON to fault (SOTF) 50N/51N           |
|                       | Capacitor bank unbalance 51C                |
|                       | Voltage-restrained overcurrent 51V          |
|                       | Overvoltage 59                              |
|                       | Earth fault overvoltage 59N                 |
|                       | Restricted earth fault 64REF                |
|                       | Stator earth fault 64S                      |
|                       | Directional phase overcurrent 67            |
|                       | Directional earth fault 67N                 |
|                       | Magnetising inrush detection 68F2           |
|                       | H5 detection 68H5                           |
|                       | Pole slip 78PS                              |
|                       | Underfrequency 81/81N                       |
|                       | Rate of change of frequency 81R             |
|                       | Lockout relay 86                            |
|                       | Machine differential 87M                    |
|                       | Programmable stages 99 8                    |
|                       | Programmable curve 87M                      |
|                       | Cold load pick-up 99 8                      |
|                       | CT supervision 60                           |
|                       | VT supervision 60FL                         |
| Arc flash protection  | No                                          |
| Relay type            | Differential current relay                  |
| measurement functions | Current 3-phase                             |
|                       | Current zero sequence                       |
|                       | Current positive sequence                   |
|                       | Current negative sequence                   |
|                       | Current ratio of negative and positive      |
|                       | Voltage phase to earth                      |
|                       | Voltage phase to phase                      |
|                       | Voltage zero sequence                       |
|                       | Voltage positive sequence                   |
|                       | Voltage negative sequence                   |
|                       | Voltage ratio of negative and positive      |
|                       | Short circuit fault reactance 3-phase       |
|                       | Fault location current zero sequence        |
|                       | Earth fault reactance positive sequence     |
|                       | Frequency phase to earth                    |
|                       | Active power phase to phase                 |
|                       | RMS active power                            |
|                       | Reactive power                              |
|                       | RMS reactive power                          |
|                       | Apparent power                              |
|                       | RMS apparent power                          |
|                       | Earth fault reactance zero sequence         |
|                       | Active energy                               |
|                       | Reactive energy                             |
|                       | Frequency negative sequence                 |
|                       | Cos φ                                       |
|                       | Tan φ                                       |
|                       | Power angle                                 |
|                       | Power factor                                |
|                       | Voltage phasor diagram view                 |
|                       | Current phasor diagram view                 |
|                       | Current 2nd, 15th harmonics with THD        |
|                       | Active power ratio of negative and positive |
|                       | Voltage 2nd, 15th harmonics with THD        |
|                       | Condition monitoring CB wear                |
|                       | Voltage interruption                        |

|                                 |                                                                                                                                                                                                                                                                             |
|---------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| control functions               | Switchgear control and monitoring<br>Programmable switchgear interlocking<br>Local control on single-line diagram<br>Local control with I/O keys<br>Local/remote control<br>2 function keys<br>Mobile application with Easergy SmartApp<br>Web-server<br>Programmable logic |
| controllable switchgear devices | 3 controlled + 5 displayed                                                                                                                                                                                                                                                  |
| number of setting groups        | 4                                                                                                                                                                                                                                                                           |
| monitoring functions            | Trip circuit supervision 74<br>Circuit breaker monitoring<br>Relay self-monitoring                                                                                                                                                                                          |
| logs and records                | Event recording<br>Disturbance recording<br>Tripping context                                                                                                                                                                                                                |
| Switchgear diagnosis type       | CT supervision ANSI code: TCS<br>Trip circuit supervision ANSI code: TCS                                                                                                                                                                                                    |
| Connections - terminals         | Screw removable (digital input/output)<br>Pin removable (voltage transformer)<br>Ring lugs fixed (current transformer)                                                                                                                                                      |

## Complementary

|                               |                                                                                         |
|-------------------------------|-----------------------------------------------------------------------------------------|
| Operating threshold           | 24 V AC/DC                                                                              |
| Time synchronisation protocol | SNTP                                                                                    |
| Software name                 | ESetup Easergy Pro: virtual simulation test<br>Easergy SmartApp                         |
| Web server                    | Embedded HTTP server                                                                    |
| Display type                  | LCD 128 x 128 pixels with single line diagram<br>LCD 128 x 128 pixels with ANSI symbols |
| Number of key                 | 2 customizable                                                                          |
| Local signalling              | 2 LEDs<br>16 LEDs programmable                                                          |
| Height                        | 176 mm                                                                                  |
| Width                         | 270 mm                                                                                  |
| Depth                         | 230 mm                                                                                  |
| Net weight                    | 4.2 kg maximum                                                                          |

## Environment

|                       |                                                                                                                                                                                                                                                                                      |
|-----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| climatic withstand    | Exposure to dry heat Bb tests conforming to EN/IEC 60068-2-2<br>Exposure to cold Ad tests conforming to EN/IEC 60068-2-1<br>Exposure to damp heat in service Db tests conforming to EN/IEC 60068-2-30<br>Exposure to damp heat in service Cab tests conforming to EN/IEC 60068-2-78  |
| Mechanical robustness | Vibrations (level: class II) conforming to IEC 60255-21-1<br>Vibrations: Fc conforming to IEC 60068-2-6<br>Shocks (level: class II) conforming to IEC 60255-21-2<br>Shocks: Ea conforming to IEC 60068-2-27<br>Seismic tests method A (level: class II) conforming to IEC 60255-21-3 |

|                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|---------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Electromagnetic compatibility         | Emission tests conforming to IEC/EN 60255-26 ed. 3<br>Emission tests conforming to CISPR 11<br>Emission tests conforming to CISPR 22<br>EMC immunity conforming to IEC/EN 60255-26 ed. 3<br>EMC immunity conforming to EN/IEC 61000-4-18<br>EMC immunity level 4 conforming to EN/IEC 61000-4-2<br>EMC immunity level 3 conforming to EN/IEC 61000-4-3<br>EMC immunity level 4 conforming to EN/IEC 61000-4-4<br>EMC immunity level 3 conforming to EN/IEC 61000-4-5<br>EMC immunity level 3 conforming to EN/IEC 61000-4-6<br>EMC immunity conforming to EN/IEC 61000-4-8<br>EMC immunity level 5 conforming to EN/IEC 61000-4-9<br>EMC immunity conforming to EN/IEC 61000-4-29<br>EMC immunity conforming to EN/IEC 61000-4-11<br>EMC immunity conforming to EN/IEC 61000-4-17<br>EMC immunity conforming to IEC 60255-22-1<br>EMC immunity conforming to IEC 60255-22-2<br>EMC immunity conforming to IEC 60255-22-3<br>EMC immunity conforming to IEC 60255-22-4<br>EMC immunity conforming to IEC 60255-22-5<br>EMC immunity conforming to IEC 60255-22-6<br>EMC immunity conforming to IEC 60255-27<br>EMC immunity class III conforming to IEC 60255-5<br>EMC immunity conforming to EN/IEC 60255-1 |
| Ambient air temperature for operation | -40...65 °C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Ambient air temperature for storage   | -40...70 °C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| IP degree of protection               | IP54 front conforming to IEC 60529                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| maximum operating altitude            | 2000 m                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Protective treatment                  | Conformal coating                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Relative humidity                     | 0...95 %, without condensation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |

## Packing Units

|                              |           |
|------------------------------|-----------|
| Unit Type of Package 1       | PCE       |
| Number of Units in Package 1 | 1         |
| Package 1 Height             | 33.020 cm |
| Package 1 Width              | 33.020 cm |
| Package 1 Length             | 41.910 cm |
| Package 1 Weight             | 5.874 kg  |

## Contractual warranty

|                      |    |
|----------------------|----|
| Warranty (in months) | 24 |
|----------------------|----|



## Environmental Data

Schneider Electric aims to achieve Net Zero status by 2050 through supply chain partnerships, lower impact materials, and circularity via our ongoing “Use Better, Use Longer, Use Again” campaign to extend product lifetimes and recyclability.

[Environmental Data explained >](#)

[How we assess product sustainability >](#)



### Environmental footprint

|                                                        |                                               |
|--------------------------------------------------------|-----------------------------------------------|
| Total lifecycle Carbon footprint                       | 1 259 kg CO2 eq.                              |
| Carbon footprint of the manufacturing phase [A1 to A3] | 185 kg CO2 eq.                                |
| Carbon footprint of the distribution phase [A4]        | 5 kg CO2 eq.                                  |
| Carbon footprint of the installation phase [A5]        | 0.2 kg CO2 eq.                                |
| Carbon footprint of the use phase [B2, B3, B4, B6]     | 1 056 kg CO2 eq.                              |
| Carbon footprint of the end-of-life phase [C1 to C4]   | 12 kg CO2 eq.                                 |
| Environmental Disclosure                               | <a href="#">Product Environmental Profile</a> |

## Use Better



### Materials and Substances

|                                        |                                                                                        |
|----------------------------------------|----------------------------------------------------------------------------------------|
| Packaging made with recycled cardboard | Yes                                                                                    |
| Packaging without single use plastic   | No                                                                                     |
| EU RoHS Directive                      | <a href="#">Compliant By Exemption</a>                                                 |
| REACH Regulation                       | <a href="#">Reference contains Substances of Very High Concern above the threshold</a> |

## Use Longer



### Lifetime extension

|        |    |
|--------|----|
| Repair | No |
|--------|----|

## Use Again



### Repack and remanufacture

|                                 |                                                                                                                                                                                                                 |
|---------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Recyclability potential, in %   | 37                                                                                                                                                                                                              |
| End of life manual availability | <a href="#">End of Life Information</a>                                                                                                                                                                         |
| Take-back                       | No                                                                                                                                                                                                              |
| WEEE Label                      |  The product must be disposed on European Union markets following specific waste collection and never end up in rubbish bins |