

# Product datasheet

Specifications



## line differential protection relay, PowerLogic P5L30 24-48V 3CT 2Io 4VT 9DI-9DO MM 2km

REL50507

EAN Code: 3606487097020

### Main

|                                |  |
|--------------------------------|--|
| Range of product               | PowerLogic P5  |
| Product or component type      | Protection and control relay   |
| Relay application              | Line differential  |
| product reference              | P5L30-AADD-LEAAA-BAEA  |
| Mounting case size             | 30TE   |
| Device mounting                | Flush  |
| Mounting mode                  | Withdrawable   |
| power supply                   | 24...48 V DC   |
| measuring inputs               | : 1/5 A CT phase current 3<br>: 1 A CT 1<br>: 1/5 A CT residual current 1<br>: voltage input VT voltage 4  |
| Number of sensors              | 0 temperature sensor(s)  |
| number of Digital Inputs (DI)  | 9  |
| number of analogue inputs      | 0  |
| number of Digital Outputs (DO) | 8 DO<br>1 watchdog   |
| number of analogue outputs     | 0  |
| communication ports            | USB port 2 front<br>LC 2 rear  |
| communication protocols        | SDLC   |
| Cybersecurity                  | Password protection<br>Port hardening<br>Firmware signature<br>Client IP address filter<br>Secured communication with associated tools<br>Role-based access control<br>Security policy management<br>Security log<br>LDAP<br>RADIUS based user authentication<br>IEC 62443-4-2 SL1 |

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

|                             |   |
|-----------------------------|---|
| <b>protection functions</b> | Phase overcurrent 50/51<br>Line differential 87L 2<br>Directional phase overcurrent 67<br>Earth fault overcurrent 50N/51N<br>Directional earth fault 67N<br>Transient earth fault 67NI<br>Neutral admittance 21YN<br>Earth fault wattmetric 32N<br>Restricted earth fault 64REF<br>Thermal overload protection 49F<br>Broken conductor 46 I2/I1<br>Cold load pick-up<br>Switch ON to fault (SOTF)<br>H2 detection<br>H5 detection<br>Breaker failure 50BF<br>Directional active underpower 37P<br>Fault locator 21FL<br>Recloser 79<br>Negative sequence overcurrent 46<br>Overvoltage 59<br>Undervoltage 27<br>Earth fault overvoltage 59N<br>Underfrequency 81/81N<br>Rate of change of frequency 81R<br>Synchro-check 25<br>Lockout relay 86<br>CT supervision<br>VT supervision<br>Programmable stages 99<br>Programmable curve<br>Programmable logic |
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|                             |    |
|-----------------------------|----|
| <b>Arc flash protection</b> | No |
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|                              |  |
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| <b>measurement functions</b> | Phase current differential mode<br>Phase current bias<br>Current 3-phase<br>Current zero sequence<br>Current positive sequence<br>Current negative sequence<br>Current ratio of negative and positive<br>Current phasor diagram view<br>Current 2nd, 15th harmonics with THD<br>Voltage single voltage<br>Voltage residual<br>Frequency bias |
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| <b>control functions</b> | Switchgear control and monitoring<br>Programmable switchgear interlocking<br>Local/remote control |
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|--|------------------------------------|
| <b>controllable switchgear devices</b> | 6 controlled + 2 monitored objects |
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|                                 |   |
|---------------------------------|---|
| <b>number of setting groups</b> | 4 |
|---------------------------------|---|

|                             |  |
|-----------------------------|--|
| <b>monitoring functions</b> | Trip circuit supervision 74<br>Circuit breaker monitoring<br>Relay self-monitoring |
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| <b>logs and records</b> | Disturbance recording<br>Event recording<br>Trip context information<br>Relay maintenance |
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| <b>Connections - terminals</b> | Pin (digital input/output)<br>Ring terminal (voltage transformer)<br>Ring terminal (current transformer) |
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## Complementary

|   |   |
|---|---|
| <b>Digital inputs nominal operation voltage</b> | Digital input: 24...240 V DC<br>Digital input: 100...230 V AC |
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|                                      |      |
|--------------------------------------|------|
| <b>Time synchronisation protocol</b> | SNTP |
|--------------------------------------|------|

|                      |   |
|----------------------|---|
| <b>Software name</b> | ESetup Easergy Pro: virtual simulation test |
|----------------------|---|

|                         |   |
|-------------------------|---|
| <b>Display type</b>     | LCD 480 x 272 pixels with single line diagram             |
| <b>Number of key</b>    | 7 customizable  |
| <b>Local signalling</b> | 4 x LED device status<br>10 x LED tri-colour programmable |
| <b>Height</b>           | 176 mm  |
| <b>Width</b>            | 152 mm  |
| <b>Depth</b>            | 219 mm  |
| <b>Net weight</b>       | 3.5 kg  |

## Environment

|  |   |
|--|---|
| <b>climatic withstand</b>                    | <p>Exposure to dry heat conforming to EN/IEC 60068-2-2</p> <p>Exposure to cold conforming to EN/IEC 60068-2-1</p> <p>Exposure to damp heat in service conforming to EN/IEC 60068-2-30</p> <p>Exposure to damp heat in service conforming to EN/IEC 60068-2-78</p> <p>Temperature variation conforming to IEC 60068-2-14</p> <p>Salt mist conforming to IEC 60068-2-52</p> <p>Influence of corrosion/gas test 2 conforming to IEC 60068-2-60</p> <p>Influence of corrosion/gas test 4 conforming to IEC 60068-2-60</p> <p>Influence of corrosion/gas test 2 conforming to IEC 60721-3-3</p> <p>Influence of corrosion/gas test 4 conforming to IEC 60721-3-3</p>   |
| <b>Mechanical robustness</b>                 | <p>Vibrations (level: class 2) conforming to IEC 60255-21-1</p> <p>Vibrations conforming to GOST 17516.1</p> <p>Vibrations conforming to IACS E10</p> <p>Shocks (level: class 2) conforming to IEC 60255-21-2</p> <p>Earthquakes (level: class 2) conforming to IEC 60255-21-3</p>  |
| <b>Electromagnetic compatibility</b>         | <p>Emission tests class A conforming to CISPR 11</p> <p>Emission tests class A conforming to CISPR 32</p> <p>Emission tests conforming to IACS E10</p> <p>EMC immunity class 4 conforming to IEC 61000-4-2</p> <p>EMC immunity level 3 conforming to IEC 61000-4-3</p> <p>EMC immunity level 4 conforming to IEC 61000-4-4</p> <p>EMC immunity level 4 conforming to IEC 61000-4-5</p> <p>EMC immunity level 3 conforming to IEC 61000-4-6</p> <p>EMC immunity level 5 conforming to IEC 61000-4-8</p> <p>EMC immunity level 5 conforming to IEC 61000-4-9</p> <p>EMC immunity level 5 conforming to IEC 61000-4-10</p> <p>EMC immunity conforming to IEC 61000-4-12</p> <p>EMC immunity level 4 conforming to IEC 61000-4-16</p> <p>EMC immunity level 3 conforming to IEC 61000-4-18</p> <p>EMC immunity conforming to ANSI C37.90.1</p> <p>EMC immunity conforming to ANSI C37.90.2</p> <p>EMC immunity class 4 conforming to ANSI C37.90.3</p> <p>EMC immunity conforming to GOST 30804.4.3</p> <p>EMC immunity conforming to GOST 30804.4.12</p> <p>EMC immunity conforming to GOST 32137</p> <p>EMC immunity conforming to IACS E10</p> |
| <b>Ambient air temperature for operation</b> | <p>-40...85 °C ( 16 h )</p> <p>-40...70 °C ( 96 h )</p>   |
| <b>Ambient air temperature for storage</b>   | -40...85 °C   |
| <b>IP degree of protection</b>               | IP54 front conforming to IEC 60529  |
| <b>maximum operating altitude</b>            | 2000 m  |
| <b>Protective treatment</b>                  | <p>Conformal coating conforming to IEC 60068-2-52:Kb/1</p> <p>Conformal coating conforming to IEC 60068-2-60:Ke</p> <p>Conformal coating conforming to IEC 60721-3-3:3C2</p>  |
| <b>Relative humidity</b>                     | <p>0...93 % at 40 °C, without condensation, 56 days</p> <p>93...95 % at 25...55 °C, 6 cycles, 12 + 12 hours</p>   |

## Packing Units

|                                     |     |
|-------------------------------------|-----|
| <b>Unit Type of Package 1</b>       | PCE |
| <b>Number of Units in Package 1</b> | 1   |

|                         |        |
|-------------------------|--------|
| <b>Package 1 Height</b> | 30 cm  |
| <b>Package 1 Width</b>  | 30 cm  |
| <b>Package 1 Length</b> | 40 cm  |
| <b>Package 1 Weight</b> | 4.5 kg |

## Contractual warranty

**Warranty** Up to 10 years extended warranty (Standard warranty 2 years. Please check with your local SE representative for extended warranty availability and conditions)

## 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

|   |            |
|---|------------|
| Carbon footprint (kg.eq.CO2 per CR, Total Life cycle) | <b>651</b> |
|---|------------|

|                          |   |
|--------------------------|---|
| Environmental Disclosure | <a href="#">Product Environmental Profile</a> |
|--------------------------|---|

## Use Better

### Materials and Substances

|  |            |
|--|------------|
| Packaging made with recycled cardboard | <b>Yes</b> |
|--|------------|

|                                      |           |
|--------------------------------------|-----------|
| Packaging without single use plastic | <b>No</b> |
|--------------------------------------|-----------|

|                   |                                  |
|-------------------|----------------------------------|
| EU RoHS Directive | <b>Compliant with Exemptions</b> |
|-------------------|----------------------------------|

|                  |                                   |
|------------------|-----------------------------------|
| REACH Regulation | <a href="#">REACH Declaration</a> |
|------------------|-----------------------------------|

|                       |  |
|-----------------------|--|
| China RoHS Regulation | <a href="#">China RoHS declaration</a> |
|-----------------------|--|

## Use Again

### Repack and remanufacture

|                     |   |
|---------------------|---|
| Circularity Profile | <a href="#">End of Life Information</a> |
|---------------------|---|

|           |           |
|-----------|-----------|
| Take-back | <b>No</b> |
|-----------|-----------|