



Powertag NSX

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Compact NSX accessories and auxiliaries

Additional measurement module: PowerTag NSX

PowerTag NSX is a Compact NSX wireless-communication modules for 3P and 3P+N electrical networks, mounted directly on the bottom side of the circuit breaker or the Vigi add-on. PowerTag NSX provides capability to measure energy, monitor voltage loss, and trigger alarms. It then delivers useful data for monitoring and diagnosis of the associated circuit breaker through Smartlink concentrator.

In combination with PowerTag Acti9, you can take advantage of a full wireless class 1 solution to monitor energy and to be aware in case of voltage loss or alarming at any level of a distribution panel, being able to take immediately the right actions in case of electrical issue. In addition to monitoring and alarming, PowerTag solution provides a complete knowledge of real time electrical values with a rich and accurate data transfer every 5 seconds.

PowerTag energy sensors can be quickly and easily installed in new or existing panels at any time. Compared to traditional metering solutions, installation time and commissioning are much shorter with no wiring, hence an error proof high density solution and a built-in class 1 accuracy.



PowerTag NSX.

Functions

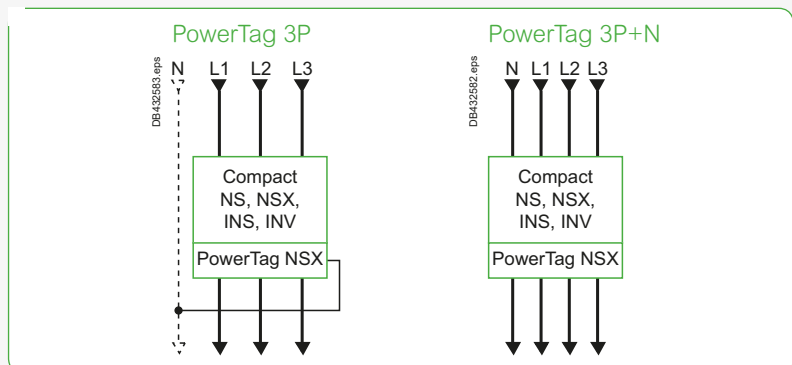
PowerTag NSX energy sensor measures the following values in accordance with the IEC 61557-12 standard:

- Energy (4 quadrants):
 - Active energy (kWh): total and partial, delivered and received.
 - Active energy per phase (kWh): total.
 - Reactive energy (VARh): partial, delivered and received.
- Power:
 - Active power (W): total and per phase
 - Reactive power (VAR): total
 - Apparent power (VA): total.
- Voltages (V): phase-to-phase (U12, U23, U31) and phase-to-neutral (V1N, V2N, V3N)
- Currents (A): per phase (I1, I2, I3)
- Frequency
- Power factor
- Voltage loss alarm:
 - PowerTag energy sensor sends a "voltage loss" alarm and the current-per-phase value before being de-energized,
 - At "voltage loss", PowerTag adds an overload alarm if the current is higher than the rated current of the associated protective device.

Installation

The module is self-powered and is installed directly on the bottom side of the circuit breaker or Vigi add-on terminals. It communicates wirelessly to SmartLink which can concentrate data for up to 20 PowerTag in the same panel.

PowerTag NSX 3P has to be used with 3P devices, and an external neutral voltage tap is provided in case of the installation has a neutral to provide phase-to-neutral voltages, active energy per phase and power per phase. PowerTag 3P+N has to be used with 4P devices.



PowerTag NSX modules are compatible with Compact NSX100/160/250, Compact NSX400/630, Compact INS250-100A to 250A, Compact INS320/400/500/630, Compact INV100/160/200/250, Compact INV320/400/500/630, Compact NS100/160/250 and Compact NS400/630. In case of retrofit, following points have to be checked:

- Clearance to be able to add PowerTag module (see dimensions in chapter E) and to respect bending radius of cables
- Condition of power connectors: to be replaced if damaged
- Tightening torques depending of the connector used

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Integration in Smartlink

Smartlink concentrate wirelessly data from PowerTag and make them available over Ethernet:

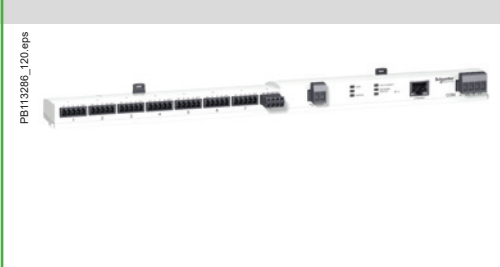
For Commercial & Building applications

Acti9 Smartlink SI D (Monitoring)



A9XMWA20

Acti9 Smartlink SI B (Monitoring & Control)



A9XMZA08

For Small Business applications

Acti9 Smartlink EL D (Monitoring)



A9XELC10

Smartlink embedded web pages allow:

- to do commissioning
- to display measured values
- to set and display alarms and pre-alarms.

Refer to the concentrator catalogue for more information.

Commissioning

Commissioning can be done very easily:

- for Smartlink EL: with a smartphone
- for Smartlink SI: with embedded webpages or with Ecoreach which provides a test report for system integration with all the Modbus registers, including bits and descriptions associated



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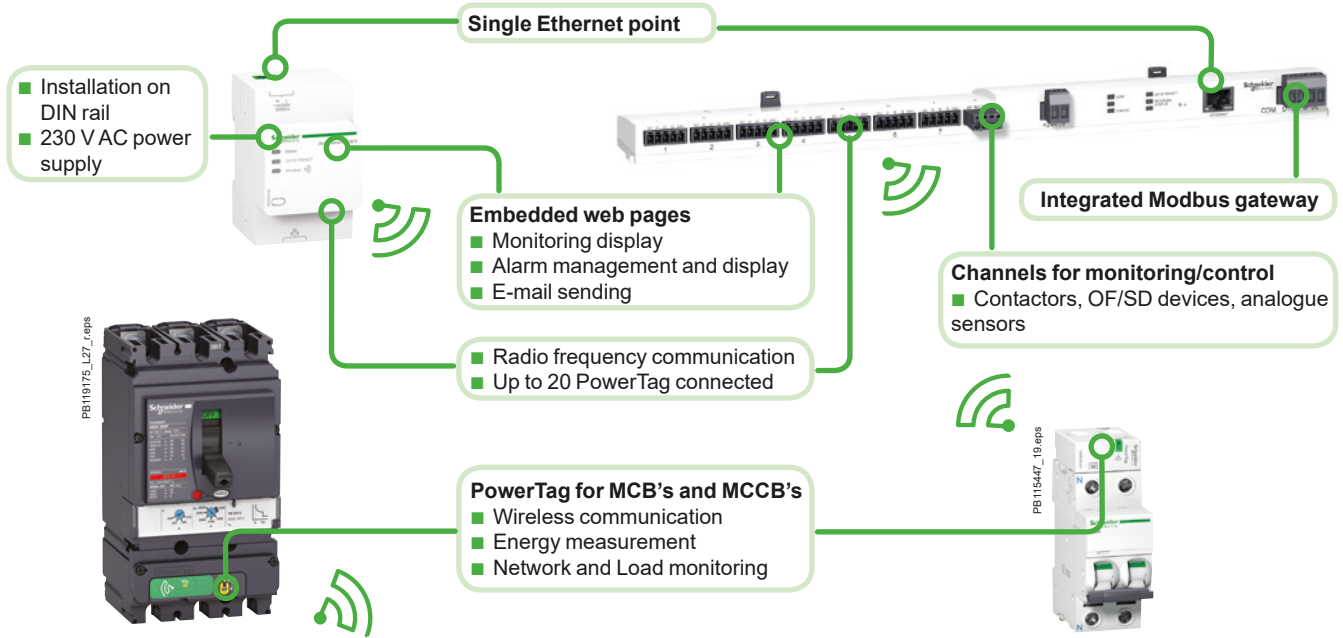
Additional measurement module: PowerTag NSX

Metering and monitoring

Acti 9 Smartlink SI D (Ethernet)

Metering, monitoring and control

Acti 9 Smartlink SI B (Ethernet)



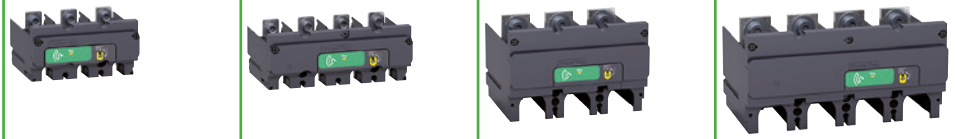
Technical characteristics

| Main characteristics | | | |
|---|-----------------|---------------------------------|---|
| Rated voltage | Un | Phase-to-neutral | 230 VAC ± 20 % |
| | | Phase-to-phase | 400 VAC ± 20 % |
| Frequency | | | 50/60 Hz |
| Operating current | In | | 250 A / 630 A |
| Maximum operating current | | | 1.2 x In |
| Saturation current | | | 2 x In |
| Maximum consumption | | | 3.7 VA |
| Starting current | Ist | | 160 mA / 400 mA |
| Base current | Ib | | 40 A / 100 A |
| Additional characteristics | | | |
| Operating temperature | | | -25 °C to +70 °C |
| Storage temperature | | | -50 °C to +85 °C |
| Overtoltage category | | As per IEC 61010-1 | Cat. IV |
| Measuring category | | As per IEC 61010-2-30 | Cat. III |
| Pollution degree | | | 3 |
| Altitude | | | Up to 2000 m without derating [1] |
| Degree of protection device | | | IP20 IK07 |
| Radio-frequency communication | | | |
| ISM band 2.4 GHz | | | 2.4 GHz to 2.4835 GHz |
| Channels | | As per IEEE 802.15.4 | 11 to 26 |
| Isotropic Radiated Power | | Equivalent (EIRP) | 0 dBm |
| Maximum transmission time | | | < 5 ms |
| Channel occupancy | | For 1 device | messages sent every 5 seconds |
| Characteristics of measuring functions | | | |
| Function | Symbol | Performance as per IEC 61557-12 | Measuring range (250 A / 630 A) |
| Active power (per phase, total) | P | Class 1 | 4 to 250 A / 10 to 630 A |
| Total reactive power | Q _A | 2 | |
| Total apparent power | S _A | 2 | |
| Active Energy (per phase, total, partial) | E _a | 1 | |
| Total reactive Energy | E _{rA} | 2 | |
| Frequency | f | 1 | 45 to 55 Hz |
| Phase current | I | 1 | 8 to 250 A / 20 to 630 A |
| Voltages (Line to Line) | U | 0.5 | Un ± 20 % |
| Power factor (arithmetic) | PF _A | 1 | From 0.5 inductive to 0.8 capacitive |
| | | | 88 W to 416 kW / 221 W to 1048 kW |
| | | | 88 VAR to 416 kVAR / 221 VAR to 1048 kVAR |
| | | | 88 VA to 416 kVA / 221 VA to 1048 kVA |
| | | | 0 to 281.109 kWh |
| | | | 0 to 281.109 kVARh |
| | | | 45 to 65 Hz |
| | | | 160 mA to 500 A / 400 mA to 1260 A |
| | | | 320 to 480 VAC |
| | | | -1 to 1 |

[1] Above 2000 m, please consult us.

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| Products (AC network) | Mounting position | 250 3P | 250 3P+N | 630 3P | 630 3P+N |
|--|-------------------|------------------------------|----------|------------|----------------|
| Compact | | | | | |
| Circuit breakers | | | | | |
| NSX100/160/250 B/F/N/H/S/L/R Fixed | 3P 4P | Bottom Bottom | ☑ - | - ☑ | - - |
| NSX400/630 F/N/H/S/L/R Fixed | 3P 4P | Bottom Bottom | - - | - ☑ | - ☑ |
| NSX100/160/250 B/F/N/H/S/L/R Plug-In (mounted on the base) | 3P 4P | Top / Bottom Top / Bottom | ☑ - | - ☑ [1] | - - |
| NSX400/630 F/N/H/S/L/R Plug-In (mounted on the base) | 3P 4P | Top / Bottom Top / Bottom | - - | ☑ [2] - | - ☑ [1] [2] |
| NS100/160/250 N/SX/H/L Fixed | 3P 4P | Bottom Bottom | ☑ - | - ☑ | - - |
| NS400/630 N/H/L Fixed | 3P 4P | Bottom Bottom | - - | ☑ - | - ☑ |
| NS100/160/250 N/SX/H/L Plug-in | 3P 4P | Top / Bottom Top / Bottom | ☑ - | - ☑ [1] | - - |
| NS400/630 N/H/L Plug-in | 3P 4P | Top / Bottom Top / Bottom | - - | ☑ [2] - | - ☑ [1] [2] |
| Circuit breakers equipped with Vigi block | | | | | |
| NSX100/160/250 B/F/N/H/S/L/R Fixed | 3P 4P | Bottom Bottom | ☑ - | - ☑ | - - |
| NSX400/630 F/N/H/S/L/R Fixed | 3P 4P | Bottom Bottom | - - | ☑ - | - ☑ |
| NSX100/160/250 B/F/N/H/S/L/R Plug-In (mounted on the base) | 3P | Top | ☑ | - | - |
| NSX400/630 F/N/H/S/L/R Plug-In (mounted on the base) | 3P | Top | - | ☑ [2] | - |
| Switches | | | | | |
| INS250/INV - 100/160/200/250 | 3P 4P | Bottom Top / Bottom | - - | ☑ ☑ [1] | - - |
| INS/INV - 320/400/500/630 | 3P 4P | Bottom Top / Bottom | - - | - - | ☑ ☑ [1] |

[1] neutral on the right when mounted on top side

[2] when plate mounted, need to add an intercalary under the PowerTag module with following dimensions:

