Powertag

Application Guide & Catalogue
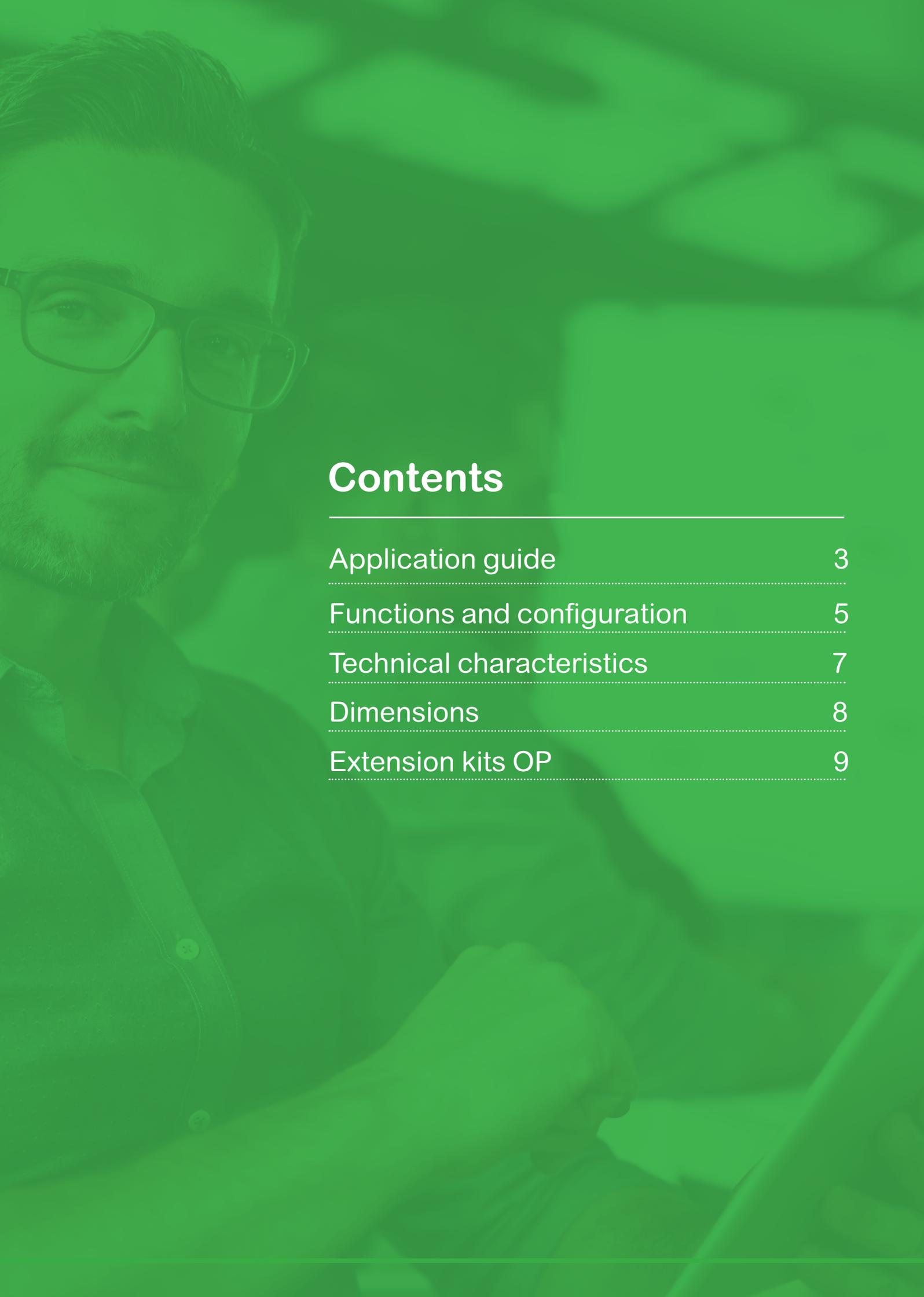
The worlds smallest wireless energy sensor

schneider-electric.co.uk

Life Is On | Schneider Electric

Contents

PowerTag   Application guide

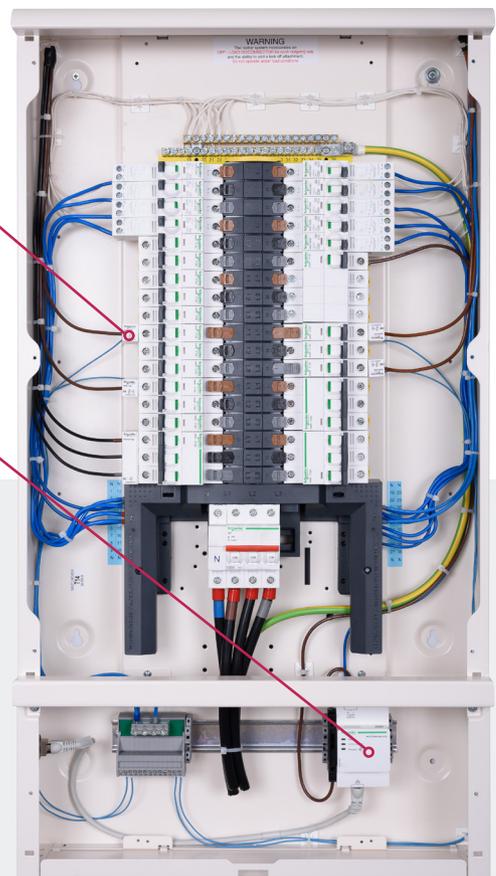## PowerTag - Wireless energy sensors on outgoers

- U, I, V, P values
- Active energy partial and total values, class 1 accuracy
- Wireless communication
- Voltage loss alarm
- Load balance
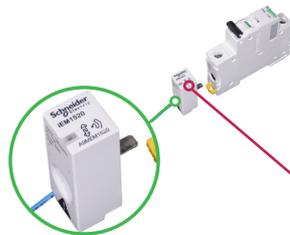
Acti 9 Smartlink Si D - Wireless access point

- Concentrates PowerTag sensors
- Ethernet connection (Modbus TCP/IP)
- 230 V AC power supply, 54 mm wide

Your need

A solution with the smallest footprint, a low investment to match energy regulations and monitor main circuits.

Our solution

PowerTag wireless energy sensors for <63 outgoers monitoring.

Benefits

- The right level of monitoring at the right place
- Class 1 energy measurement
- Wiring reduced to the essential
- Smallest footprint, fitting in existing panels
- Standalone system with no additional software required
- Open system compatible with your BMS/EMS

Preferred application

- Office buildings
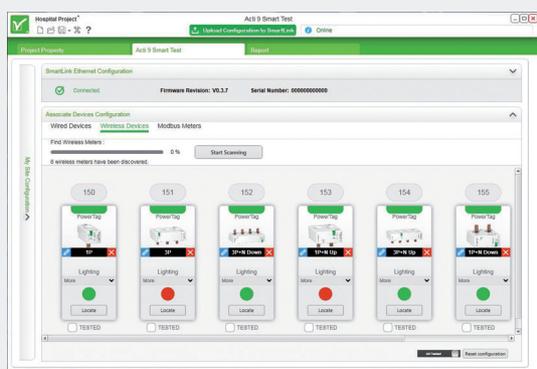- Administration
- Healthcare

- Hotels
- Education

Implement your simple solution in a few steps

Installation

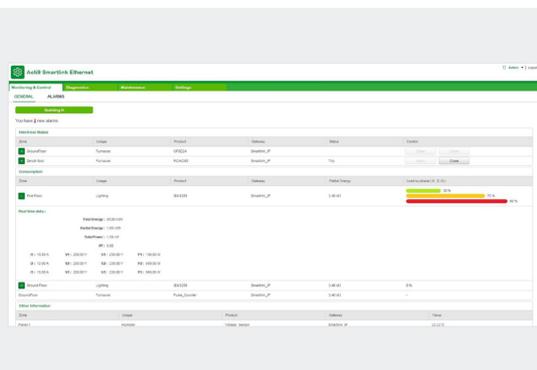**Outgoer energy sensor**

- PowerTag sensors can be installed with no space lost inside the distribution board
- Wireless communication with Smartlink Si D simplify the wiring

Commissioning

- Free commissioning software for PowerTags
- Easy to use communication test report

Operation

- Email 25 different alarms:
    1. Overload 50% or 80%
    2. Voltage loss and
    3. Specific thresholds of U,I,V,P,PF
- Instant values of U,I,V,P,PF,E available on web pages
- Class 1 accuracy to identify precisely where to save energy

Product	Description	Cat. no.
PowerTag	Energy sensor - 3P	A9MEM1540
PowerTag	Energy sensor - 1P with neutral lead	A9MEM1520
Top or Bottom Extension kit	Acti 9 Smartlink Si D, terminal block, communication & power cables	A9PTGEXTNP
or Side extension kit	Acti 9 Smartlink Si D, terminal block, communication & power cables	A9PTGRK

A9MEM1520-18
A9MEM1520

A9MEM1521-18
A9MEM1521

A9MEM1540-18
A9MEM1540

A9MEM1522-18
A9MEM1522

A9MEM1541-18
A9MEM1541

A9MEM1542-18
A9MEM1542

DB405140

Test software: Acti 9 Smart Test

■ Electrical continuity test
(cabling of connected devices)
■ Communication Testing of wired,
wireless devices, analog and Modbus devices..
■ Editing of a complete test report (Excel, pdf) with the
Modbus communication registers for easy integration
into a supervision system
■ Windows XP, Windows 7, Windows 8 and Windows
10 compatible
■ Downloadable from: schneider-electric.com

IEC 61557-12 PMD/DD/K55/1

PowerTags are energy sensor modules for 1P, 1P+N, 3P and 3P+N networks.
They are mounted directly on equipment of the Acti 9 or Multi 9 range at intervals of
18 mm up to 63 A.

Functions

**Combined with Acti 9 Smartlink SI B (Ethernet) or Acti 9 Smartlink SI D
(Ethernet) by radio-frequency communication, PowerTag sensors measure the
following values in accordance with the IEC 61557-12 standard**
■ Cumulative active energy, total and partial (kWh).
■ Rms values:
□ phase-to-neutral and phase-to-phase voltages (V),
□ currents per phase (A),
□ total active power and active power per phase (W),
□ power factor.
**Installed upstream or downstream of a protective device, they measure useful
data for diagnosis of the associated circuit.**
■ Class 1 measurement accuracy of energy and current, and class 0.5 of voltage

Configuration
■ Recognition of the device in the Acti 9 Smart Test configuration software: the
product flashes in the switchboard during configuration for easy recognition.
■ Addition of context-related information to Acti 9 Smart Test (name of the load,
energy usage, single-line circuit label).
■ Partial energy counter can be reset or preset to a special value via the software.

Integration in Acti 9 Smartlink
■ Use of a wireless concentrator to report data:
□ Acti 9 Smartlink SI B (Ethernet) for a complete metering, monitoring and control
solution,
□ Acti 9 Smartlink SI D (Ethernet) for a metering and monitoring solution only.
■ Native display, in Smartlink's embedded web pages, of the quantities measured
by the PowerTag sensors.
■ Load monitoring
□ alarm sent by the sensor in the event of a voltage loss,
□ pre-alarms on predefined thresholds (50 %, 80 %) or customized thresholds
(thresholds on currents, power, voltages and cumulative energies).
■ Alarm management on current/voltage/load level thresholds by e-mail.
■ Display of alarms and pre-alarms on Smartlink embedded web pages.
■ Easy integration into system with Com'X200, Com'X 510 and other Schneider
Electric software and third-party Building Management Systems (BMS's) thanks to
the Acti 9 Smart Test report in Excel format. This report provides dynamically all the
Modbus registers, including bits and meanings associated, for an easy integration
into the software.
■ Remote metering possible using the Smartlink monitoring page.

DB408571

Catalogue numbers

PowerTag		
Type	**Type of mounting**	**Cat. no.**
1P	Top and bottom	**A9MEM1520**
1P+N	Top	**A9MEM1521**
	Bottom	**A9MEM1522**
3P	Top and bottom	**A9MEM1540**
3P+N	Top	**A9MEM1541**
	Bottom	**A9MEM1542**
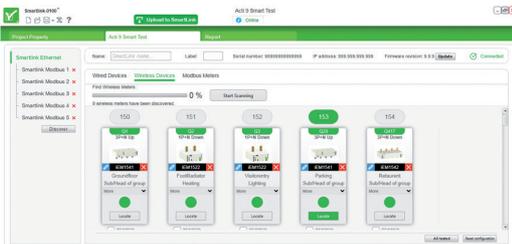
PowerTag
Functions and configuration

Metering and monitoring and control
Acti 9 Smartlink SI B (Ethernet)

Embedded web pages
- Monitoring display
- Alarm management and display
- E-mail sending

Integrated Modbus gateway

Channels for monitoring/control
- Contactors, OF/SD devices, analog sensors

Compatible products

"Single terminal" circuit breakers and switches at intervals of 18 mm, ratings less than or equal to 63 A:
- Acti 9 : iC60/iID/iID K/iSW (< 63 A)/iSW-NA/Reflex iC60/iK60/i65N-K
- Multi9 : C32/C45/C60/K60/ID/ISW/I-NA
- DT60

See catalogue module CA908058

PowerTag
- Radio frequency communication
- Up to 20 sensors connected

Metering and monitoring only
Acti 9 Smartlink SI D (Ethernet)

Embedded web pages
- Monitoring display
- Alarm management and display
- E-mail sending

- Installation on DIN rail
- 230 V AC power supply

PowerTag
- Radio frequency communication
- Up to 20 sensors connected

Compatible products

"Single terminal" circuit breakers and switches at intervals of 18 mm, ratings less than or equal to 63 A:
- Acti 9 : iC60/iID/iID K/iSW (< 63 A)/iSW-NA/Reflex iC60/iK60/i65N-K
- Multi9 : C32/C45/C60/K60/ID/ISW/I-NA
- DT60
- See catalogue module CA908058

Technical characteristics

Main characteristics			
Rated voltage	Un	Phase-to-neutral	230 V AC ± 20 %
		Phase-to-phase	400 V AC ± 20 %
Frequency			50/60 Hz
Maximum operating current	Imax		63 A
Saturation current			130 A
Maximum consumption			≤ 2 VA
Starting current	Ist		40 mA
Base current	Ib		10 A

Additional characteristics		
Operating temperature		-25°C to +60°C
Storage temperature		-40°C to +85°C
Overvoltage category	As per IEC 61010-1	Cat. III
Measuring category	As per IEC 61010-2-30	Cat. III
Pollution degree		3
Altitude		≤ 2000 m
Degree of protection	Device only	IP20
	IK	05

| 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		< 5ms
Channel occupancy	For 1 device	Messages sent every 5 seconds

Characteristics of measuring functions			
Function		Performance category as per IEC 61557-12	
Active power	P	1	9 W to 63 kW
Active energy	Ea	1	Total and partial 0 to 99999999.9 kWh
Current	I	1	2 A to 63 A
Voltage	U	0.5	Un ± 20 %
Power factor	PFA	1	0 to 1

PB115448-40

PowerTag Dimensions

Connection
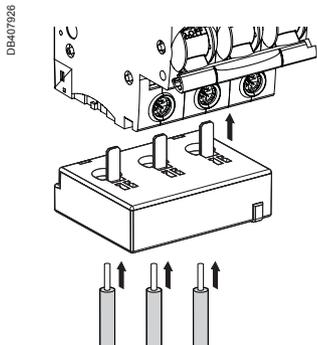
Stripping length	Copper cables					
	Rigid		**Flexible**		**Flexible with ferrule**	
18 mm(*)	1.5 to 16 mm²	2 x 1.5 to 2.5 mm²	1.5 to 16 mm²	2 x 1.5 to 2.5 mm²	-	-
18 mm	-	-	-	-	1.5 to 16 mm²	2 x 1.5 to 2.5 mm²

■ Mounting with 18 mm ferrule recommended.
■ (*) Without ferrule/cable ends, respect the stripping length stated on the associated products.
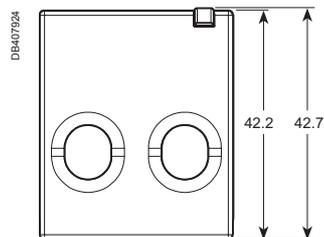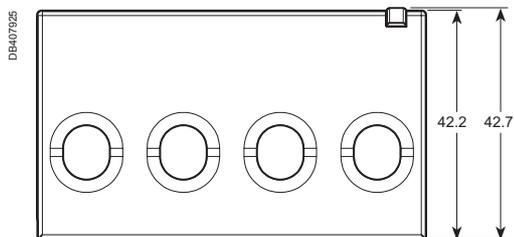
Dimensions (mm)
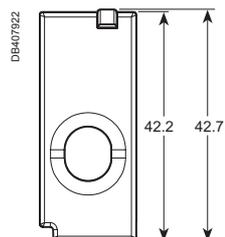
1P
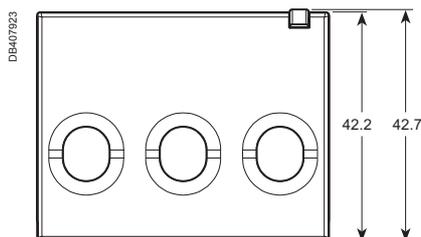
3P

1P+N

3P+N

Weight (g)

PowerTag	
Type	
1P	16.4
1P+N	17.5
3P	28
3P+N	35

PowerTag Extension kits OP

Top/bottom extension kit for Acti9 Isobar type B boards

Main characteristics	
Cat. no	A9PTGEXTNP
Height (mm)	185
Width (mm)	490
Depth (mm)	115

Major components Include:

■ 230V AC Acti 9 Smartlink SID: A9XMWA20
■ Distribution block fitted for neutral connection of 1P with neutral wire PowerTags (1P+N, 3P & 3P+N PowerTags do not have neutral connection)
■ RJ45 industrial Ethernet connector fitted for quick and easy connection

Side Extension kit for Acti9 Isobar type B boards

Main characteristics	
Cat. no	A9PTGRK
Height (mm)	340
Width (mm)	135
Depth (mm)	115

Major components Includes:

■ 230V AC Acti 9 Smartlink SID: A9XMWA20
■ Distribution block fitted for neutral connection of 1P with neutral wire PowerTags (1P+N, 3P & 3P+N PowerTags do not have neutral connection)
■ RJ45 industrial Ethernet connector fitted for quick and easy connection

230V AC Smartlink SID

Distribution block

RJ45 Industrial Ethernet connector

Notes

Life Is On

Life Is On | **Schneider Electric**

About Schneider Electric

Schneider Electric is the global specialist in energy management and automation. With revenues of €27 billion in FY2015, our 160,000+ employees serve customers in over 100 countries, helping them to manage their energy and process in ways that are safe, reliable, efficient and sustainable. From the simplest of switches to complex operational systems, our technology, software and services improve the way our customers manage and automate their operations. Our connected technologies reshape industries, transform cities and enrich lives.

At Schneider Electric, we call this Life Is On.

Schneider Electric

United Kingdom
Stafford Park 5,
Telford
Shropshire
TF3 3BL
Tel: 0870 608 8 608
Fax: 0870 608 8 606

Ireland
Head office, Block A
Maynooth Business Campus
Maynooth, Co. Kildare
W23 Y7X0
Tel: 1 800 805 800
Fax: (01) 601 2201

www.schneider-electric.co.uk   **www.schneider-electric.com/ie**