

DB123430



Country approval pictograms

PB10797-47



DE404902



## IEC/EN 61131-2

Acti 9 Smartlink Modbus Slave and Acti 9 Smartlink Ethernet are used to transfer data from Acti 9 devices to a PLC or monitoring system via the communication system:

- Modbus serial line for Acti 9 Smartlink Modbus Slave
- Modbus Ethernet TCP/IP or http for Acti 9 Smartlink Ethernet.

## Functions

### Data transmission between the network and Acti 9 devices

- Circuit breakers, residual current circuit breakers, residual current devices:
  - open/closed state
  - tripped state
  - number of opening/closing cycles
  - number of tripping actions.
- Contactors, impulse relays:
  - opening control
  - closing control
  - open/closed state
  - number of opening/closing cycles
  - total period of operation of the load (device closed).
- Remote controlled circuit breaker/Reflex iC60:
  - opening control
  - closing control
  - open/closed state
  - tripped state
  - number of opening/closing cycles
  - total period of operation of the load.
- Power meters:
  - number of pulses recorded
  - pulse value setting (e.g. kWh)
  - total consumption recorded
  - estimate of power consumption.
- Analog sensors only for Acti 9 Smartlink Ethernet:
  - temperature sensor
  - humidity sensor,
  - CO<sub>2</sub> detector,
  - optical detector
  - ...

All the data are stored in memory: number of cycles, consumption, period of operation, even in the event of a power failure.

Acti 9 Smartlink can also exchange data with any device having 24 V DC digital inputs/outputs.

No configuration of the connected products is required.

When Acti 9 Smartlink is switched on, communication automatically adjusts to the Modbus Master or Ethernet (PLC, control station) communication parameters.

## Installation

- Mounting in switchboards:
  - width 24 modules per row
  - minimum spacing between rails 150 mm.
- Mounting on
  - DIN rail, with mounting kit **A9XMFA04**
  - Linergy FM 80 A, with locking clips supplied
  - Linergy FM 200 A, with mounting kit **A9XM2B04**.

## Test

- The communication and cabling test for the connected devices can be performed using Acti 9 Smart Test software

DB405140

### Acti 9 Smart Test software

- Electrical continuity test
- Functional testing of the devices
- Report printing
- Printing of a simplified diagram
- Project archiving
- Compatible with Windows XP, Windows 7, Windows 8
- To be download on: Schneider Electric web sites:
  - schneider-electric.com or
  - schneider-electric country web site



DB406513

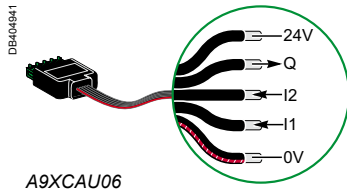




Acti 9 Smartlink Modbus Slave



Acti 9 Smartlink Ethernet



A9XCAU06



PB10794-43

## Catalogue numbers

Acti 9 Smartlink			
Type		Set of	
Acti 9 Smartlink Modbus Slave		1	<b>A9XMSB11</b>
Supplied with	Modbus connector	1	
	24 V DC power supply connector	1	
	Locking clips for mounting on Linergy FM 80	2	
Acti 9 Smartlink Ethernet		1	<b>A9XMEA08</b>
Supplied with	Connector for 4-point analog output	1	
	Modbus connector	1	
	24 V DC power supply connector	1	
	Locking clips for mounting on Linergy FM 80	2	
Accessories			
USB cable link / Modbus for Acti 9 Smartlink test		1	<b>A9XCATM1</b>
Prefabricated cables			
With 2 connectors	Short: 100 mm	6	<b>A9XCAS06</b>
	Medium-sized: 160 mm	6	<b>A9XCAM06</b>
	Long: 870 mm	6	<b>A9XCAL06</b>
With 1 connector	Long: 870 mm	6	<b>A9XCAU06</b>
Connectors	5-pin connectors (Ti24)	12	<b>A9XC2412</b>
Mounting kit	DIN rail (4 feet, 4 straps, 4 adapters)	1	<b>A9XMFA04</b>
	Linergy FM 200 A (4 adapters)	1	<b>A9XM2B04</b>
Spare parts	Lock for Linergy FM 80 A (2 clips)	1	<b>A9XMLA02</b>

## Connectable devices

With Ti24 interface		
Type	Reference	Description
iACT24	A9C15924	Low-level control and indication auxiliary for iCT contactors
iATL24	A9C15424	Low-level control and indication auxiliary for iTL impulse relays
iOF+SD24	A9A26897	Low-level indication auxiliary for iC60, iID, ARA, RCA, iSW-NA
OF+SD24	A9N26899	Low-level indication auxiliary for C60, C120, DPN, RCCB/iD, C60H-DC
RCA	See module CA904011	Remote control with Ti24 interface
Reflex iC60	See module CA904012	Reflex iC60 with Ti24 interface
Without Ti24 interface		
Power meters with pulse output, e.g. IEM2000T		
Impulse meters complying with the IEC 62053-21 standard		
24 V DC indicator lamps, Harmony XVL range		
All loads not exceeding 100 mA, 24 V DC		
Light sensitive switches: example IC2000		
Timers, thermostats, time switches, load shedding devices		
All 24 V DC auxiliary contacts, IEC 61131-2 type 1		
With analog outputs		
Temperature and humidity sensors, with a 0-10 V or 4-20 mA output		
CO <sub>2</sub> and optical detectors, with a 0-10 V or 4-20 mA output		

## Example of an installation

PB11300-94

DB406505



**Ethernet link**  
 ■ 10/100 MB Ethernet, Modbus TCP server



DB406544



DB406506

**1 analog input channel**  
 ■ Example: temperature sensor connection

DB406508



**Prefabricated cables**  
 ■ Simplified cabling  
 ■ Fast and safe

DB406507



**Modbus Communication**  
 ■ Up to 8 Acti 9 Smartlink Modbus Slave or others slaves Modbus connected

## Connection to the Ethernet network

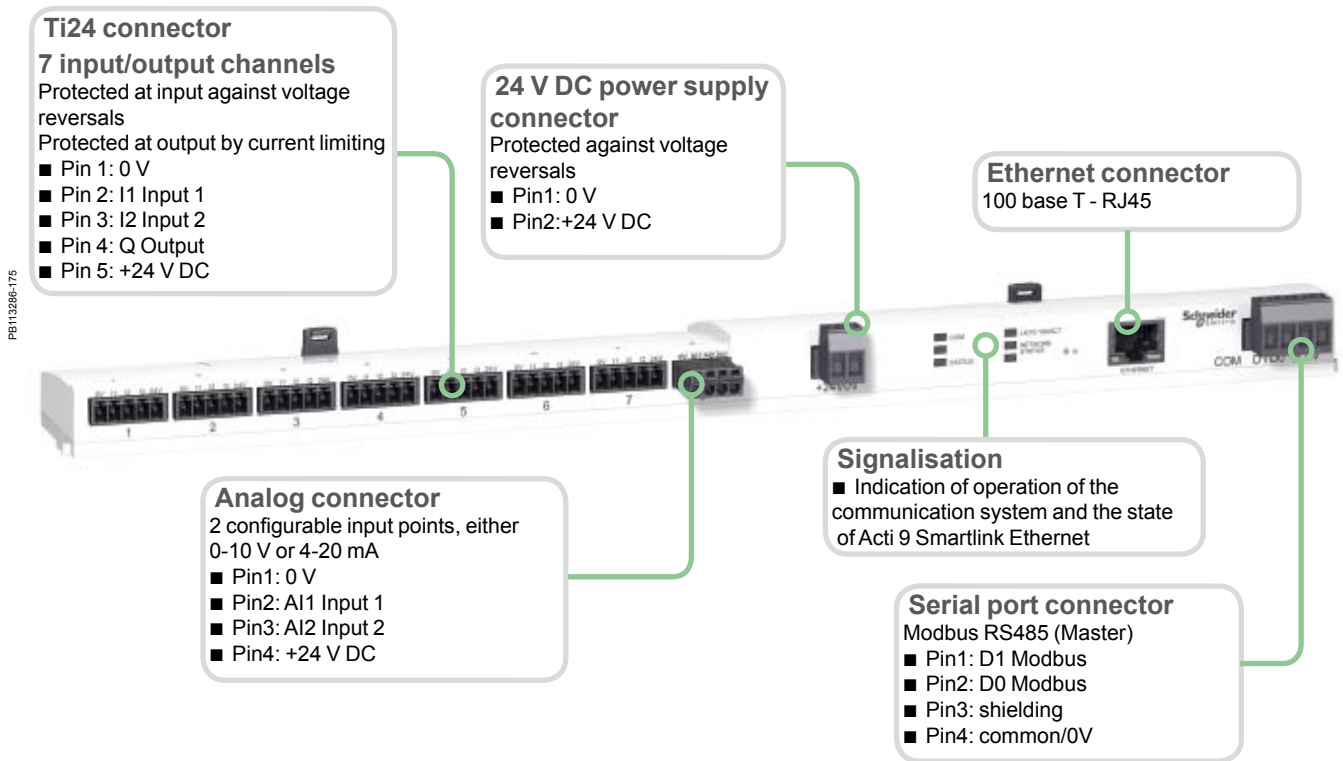
Acti 9 Smartlink Ethernet has an embedded web server that can be used to configure the connection to the Ethernet network

DB406473

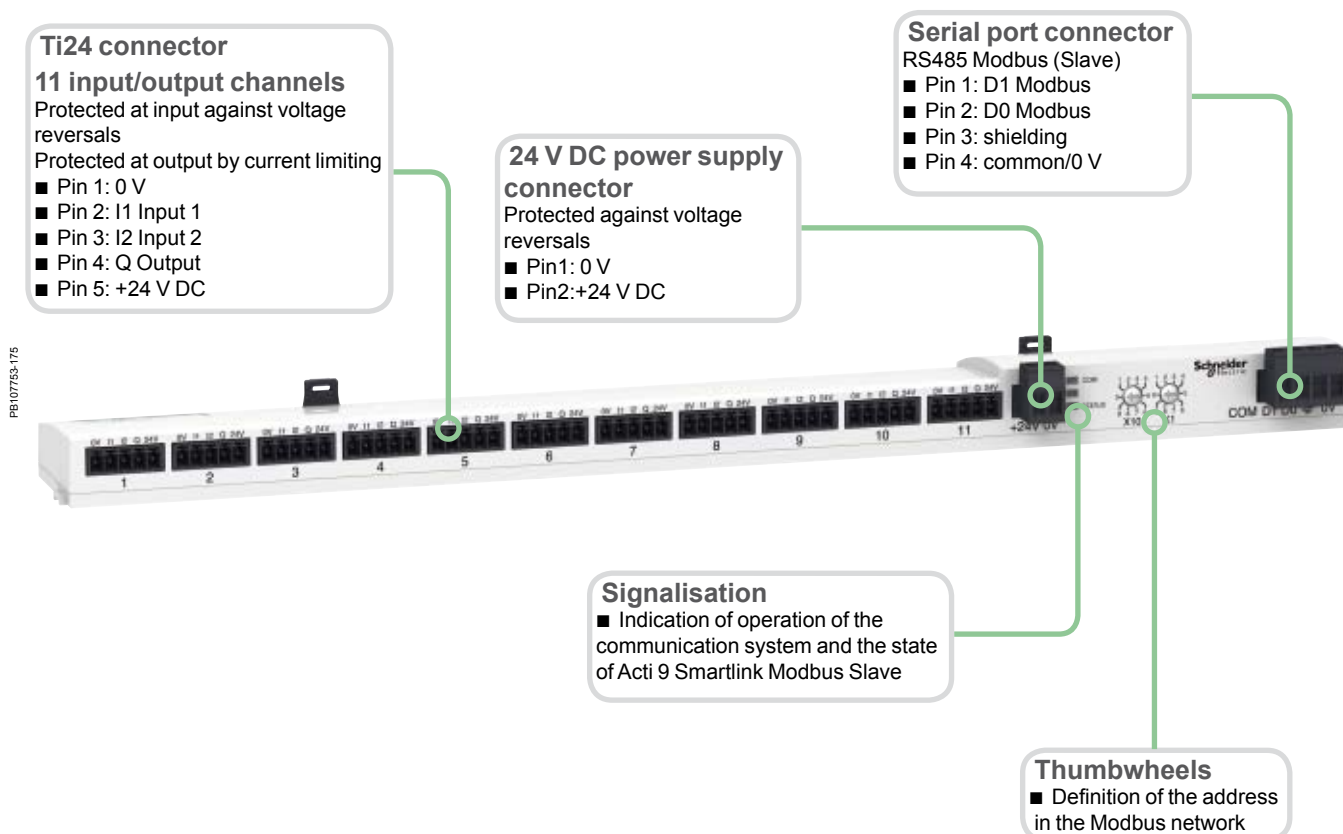


■ Web Page available, to configure Acti 9 Smartlink Ethernet communication Ethernet parameter, to visualize or control data

## Acti 9 Smartlink Ethernet



## Acti 9 Smartlink Modbus Slave



## Common technical characteristics

Power supply		
Rated		24 V DC $\pm$ 20 %
Maximum input current		1.5 A
Maximum inrush current		3 A
Meter		
Capacity		2 <sup>32</sup> pulses per input
Input characteristics		
Number of channels	Acti 9 Smartlink Modbus Slave	11 of 2-input channels
	Acti 9 Smartlink Ethernet	7 of 2-input channels
Type of input		Current collector Type 1 IEC 61131-2
Maximum cable length		500 m
Rated voltage		24 V DC
Voltage limits		24 V DC $\pm$ 20 %
Rated current		2.5 mA
Maximum current		5 mA
Filtering time	In state 1	2 ms
	In state 0	2 ms
Isolation		No isolation between channels
Negative sequence voltage protection		Yes
Output characteristics		
Number of output channels	Acti 9 Smartlink Modbus Slave	11
	Acti 9 Smartlink Ethernet	7
Type of output		24 V DC 0.1 A current source
Maximum cable length		500 m
Rated voltage	Voltage	24 V DC
	Maximum current	100 mA
Filtering time	In state 1	2 ms
	In state 0	2 ms
Voltage drop (voltage in state 1)		1 V max
Maximum inrush current		500 mA
Leakage current		0.1 mA
Overvoltage protection		33 V DC
Environmental characteristics		
Temperature	Operating	-25°C ... +60°C (if vertical mounting, limited to 50°C)
	Storage	-40°C...+80°C
Tropicalization		Treatment 2 (relative humidity of 93% at 40°C)
Resistance to voltage dips		10 ms, class 3 as per IEC 61000-4-29
Degree of protection		IP20
Pollution degree		3
Altitude	Operating	0 ... 2000 m
Vibration resistance	As per IEC 60068.2.6	1 g / $\pm$ 3.5 mm - 5 Hz to 300 Hz - 10 cycles
Shock resistance	As per IEC 60068.2.2 7	15 g / 11 ms
Immunity to electrostatic discharge	As per IEC 61000-4-2	Air: 8 kV Contact: 4 kV
Immunity to radiated magnetic fields	As per IEC 61000-4-3	10 V/m - 80 MHz to 3 GHz
Immunity to fast transients	As per IEC 61000-4-4	1 kV for inputs/outputs and Modbus communication. 2 kV for 24 DC power supply - 5 kHz - 100 kHz
Immunity to conducted magnetic fields	As per IEC 61000-4-6	10 V from 150 kHz to 80 MHz
Immunity to magnetic fields at mains frequency	As per IEC 61000-4-8	30 A/m
Resistance to corrosive atmospheres	As per IEC 60721-3-3	Level 3C2 on H <sub>2</sub> S / SO <sub>2</sub> / NO <sub>2</sub> / Cl <sub>2</sub>
Fire resistance	For live parts	At 960°C 30 s / 30 s as per IEC 60 695-2-10 and IEC 60 695-2-11
	For other parts	At 650°C 30 s / 30 s as per IEC 60 695-2-10 and IEC 60 695-2-11
Salt spray test	As per IEC 60068.2.52	Severity 2
Environment		In compliance with the RoHS directive
Additional characteristics		
Duration of saving memory		10 years
Prefabricated cables characteristics		
Dielectric resistance		1 kV / 5 min
Minimum draw-out resistance		20 N

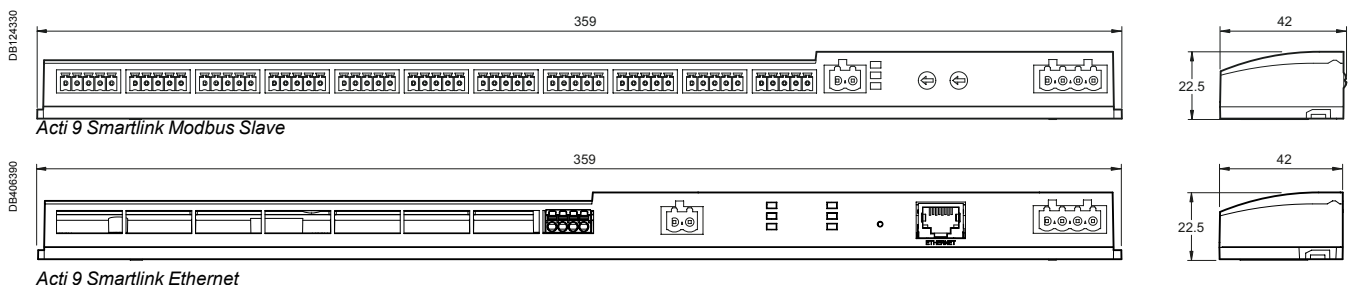
## Acti 9 Smartlink Modbus Slave technical characteristics

Characteristics of the Modbus link		
Link	Modbus, RTU, RS485 serial connection	
Transmission	Transfer rate	9600 baud ... 19200 baud, self-adaptable
	Medium	Shielded cable, double twisted pair
Protocol	Master/Slave	
Type of device	Slave	
Modbus addressing range	1 to 99	
Maximum length of the bus	1000 m	
Type of bus connector	4-pin connector	

## Acti 9 Smartlink Ethernet technical characteristics

Characteristics of the Ethernet link		
Link	10/100 MB Ethernet	
Protocol	Modbus TCP server http (Web pages)	
Address mode	Static and dynamic (supplied, by default, in dynamic mode)	
Characteristics of Gateway		
Protocol	Modbus TCP/IP -> Modbus SL	
Modbus slave number	8	
Modbus addressing range	1 to 247	
Characteristics of the Modbus Master link		
Link	Modbus serial connection, RTU, RS485	
Transmission	Transfer rate	9600 baud ... 19200 baud, self-adaptable
	Support	Shielded cable, double twisted pair
Maximum length of the bus	1000 m	
Type of bus connector	4-pin connector	
Characteristics of the analog inputs		
Number	2	
Type	Separate configuration for each input, either 0-10 V or 4-20 mA	
Measuring accuracy	1/100 full scale	
Resolution	12 bits	
Acquisition time	500 ms	
Isolation	No isolation between channels	
Power supply	0-24 V DC	
Type of cable	Shielded cable, double twisted pair	
Maximum cable length	30 m	
Protection	Short-circuit protection	

## Dimensions (mm)

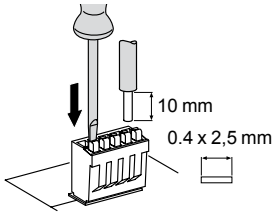


## Weight (g)

Acti 9 Smartlink	
Type	
Acti 9 Smartlink Modbus Slave	195
Acti 9 Smartlink Ethernet	180

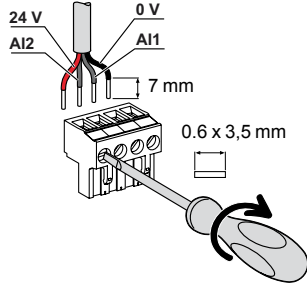
## Connection

DB123560

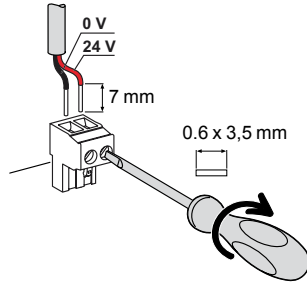


Connector cat. no: A9XC2412

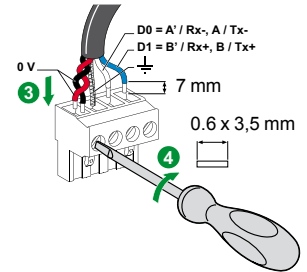
DB406517



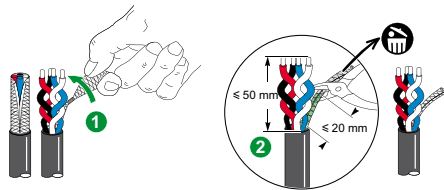
DB124331



DB405141



DB405142



Terminal	Tightening torque	Copper cables		
		Rigid	Flexible	Flexible with ferrule
Ti24 interface	Spring loaded terminal	DB123545 	DB123553 	DB123554 
Analog connector	0.8 N.m	0.1 to 1.5 mm <sup>2</sup>	0.1 to 1.5 mm <sup>2</sup>	0.1 to 1.5 mm <sup>2</sup>
Power supply connector	0.8 N.m	0.2 to 1.5 mm <sup>2</sup>	0.2 to 1.5 mm <sup>2</sup>	0.2 to 1.5 mm <sup>2</sup>
Modbus connector	0.8 N.m	0.25 mm <sup>2</sup>	0.25 mm <sup>2</sup>	0.25 mm <sup>2</sup>



1.7	2/09/2013	Add Acti 9 Smartlink Ethernet	Sedoc
1.6	10/07/2013	Replaced Multiclip by Linergy FM and Distribloc by Linergy DX. Changed Input/Output: Maximun cable length (20 m to 500 m).	Sedoc
1.5	2/04/2012	Deleted cat. no. TCSMCNAM3M002P page 2 - Add picto+text page 3, 4, 6 - Changed Modbus drawings page 5	Sedoc
1.4	28/02/2012	Changed connector photo page 2 and Test software text page 3	Sedoc
1.3	17/02/2012	Changed Accessories name page 2 and Technical data page 6	Sedoc
1.2	2/12/2011	Change photos	Sedoc
1.1	21/10/2011	Change OF+SD24 cat. no. to A9N26899	Sedoc
1.0	19/08/2011	Creation	Sedoc
<b>Indice</b>	<b>Date</b>	<b>Modification</b>	<b>Name</b>