

Smart Manager

LITE, Basic

Art. Nr.: 095425, 095427



■ Article description

The Smart Manager is an industrially-suited mini computer, which makes it possible to implement complex tasks within control technology or building automation.

Thanks to the available "Basic" and "LITE" variants, as well as the modular design, the Smart Manager can be adapted even more efficiently to individual requirements.

The wide supply voltage range of 12 V to 30 V allows easy integration into existing and newly planned applications.

The Broadcom® processor of the Raspberry Pi Compute Module CM3+ with its four cores and 1.2 GHz clock frequency offers sufficient computing power, even for demanding tasks.

Up to two Ethernet ports, four USB 2.0 connections and two terminable RS-485 interfaces offer all possibilities for data communication. Thanks to the innovative STV mounting rail bus, available expansion modules can be directly attached to the Smart Manager Basic. This ensures a compact design, minimises the wiring effort and at the same time offers the highest possible flexibility in the control cabinet.

The programming of the Smart Manager is freely selectable: CoDeSys, NodeRed, Node.js, C or C++ offer solutions for all application areas. FHEM, openHAB or Mosquitto can also be easily installed.

■ Characteristics

□ Supply voltage:	24 V _{DC (nom.)}	
□ Processor:	Broadcom SoC Quad-Core 64-bit	
□ RAM:	1 GB SDRAM	
	LITE	Basic
□ Flash-memory:	8 GB eMMC	32 GB eMMC
□ Interfaces:	1x HDMI 1.3a 1x Ethernet 10/100 Mbit/s 2x USB 2.0 Hi-Speed 1x Micro-USB (eMMC Image-Transfer) 1x RS-485, galvanically isolated	1x HDMI 1.3a 2x Ethernet 10/100 Mbit/s 4x USB 2.0 Hi-Speed 1x Micro-USB (eMMC Image-Transfer) 1x RS-485, galvanically isolated 1x RS-485 / RS-232, galv. isolated Mounting rail bus system
□ Functions:	Power-LED and Status-LED (freely programmable) 1x Button (freely programmable)	
□ Operating system:	Debian-Linux (modified)	
□ Long term availability:	10 years (compatible device version)	

■ Technical Data

□ Supply voltage:

Supply voltage	+24 V _{DC}
Supply voltage range	+12 V _{DC} (min.) bis +30 V _{DC} (max.)
Power consumption (max.) at nominal supply voltage without USB load device	approx. 10 W

□ System-On-Module (SOM):

	Raspberry Pi Compute Module 3+	
System-On-Chip (SOC)	Broadcom BCM2837B0	
CPU Type	Arm Cortex-A53	
CPU architecture	Armv8-A (64-bit)	
CPU cores / clock speed	4 / 1,2 GHz	
RAM	1024 MB LPDDR2-SDRAM	
GPU Type	Broadcom Dual Core VideoCore IV	
GPU clock speed	400 MHz	
Video output	HDMI 1.3a, OpenGL-ES 2.0	
Non volatile memory	LITE: 8 GB eMMC	Basic: 32 GB eMMC

□ Software:

Operating system	Debian-Linux (Raspberry Pi OS, modified)
Coding	CoDeSys NodeRed Node.js C / C++ [...]
Message-Broker ^[1]	FHEM openHAB Mosquitto ioBroker [...]

[1] additional software installations through the package-management system may be required

■ Technical Data

(continued)

□ Interface: USB 2.0

Number of USB interfaces	LITE: 2	Basic: 4
Type of connector	USB 2.0 type A, socket	
Data rate ^[2]	Hi-Speed (480 Mbps), Full Speed (12 Mbps) and Low Speed (1.5 Mbps) compatible	
Supply voltage	5 V _{DC (nom.)}	
Supply current ^[3]	500 mA	

□ Interface: Micro-USB ^[4]

Type of connector	LITE: <input checked="" type="checkbox"/>	Basic: <input checked="" type="checkbox"/>
	Micro-USB 2.0 type AB, socket	

□ Interface : HDMI

Number of HDMI interfaces	LITE: <input checked="" type="checkbox"/>	Basic: <input checked="" type="checkbox"/>
HDMI Standard	HDMI 1.3a	
Type of connector	HDMI standard type A, socket	
Video resolution _(max)	Full HD, 1080p30	

□ Interface: Ethernet

Number of Ethernet interfaces	LITE: 1	Basic: 2
Type of connector	RJ-45	
Data rate ^[2]	10 / 100 Mbit/s	
Features	10 BASE-T / 100 BASE-TX support IEEE802.3 / 802.3u Compliant Independent MAC addresses Auto-negotiation, HP Auto-MDIX	

[2] Data rate dependent on bus system load

[3] Per USB connection, sum of currents max. 3A

[4] The micro-USB connection is used exclusively for firmware image transfer

■ Technical Data

(continued)

□ Interface: RS-485

Interface
Data rate
Input impedance
Termination
Protection of interface

LITE: <input checked="" type="checkbox"/>	Basic: <input checked="" type="checkbox"/>
RS-485 (TIA/EIA-485-A)	
115.200 Bd (max.), half-duplex	
48 k Ω ($\frac{1}{4}$ Unit Load)	
optionally via jumper, 120 Ω + fail-safe biasing	
Galvanic isolation (reinforced) 3.000 V _{RMS} , according to DIN VDE 0884-11	
ESD interference immunity ± 15 kV, acc. to IEC 61000-4-2	

□ Interface: RS-485 / RS-232

(switchable)

Interface RS-485
Data rate RS-485
Input impedance RS-485

Interface RS-232
Data rate RS-232
Input impedance RS-232
Termination
Protection of interface

LITE: <input checked="" type="checkbox"/>	Basic: <input checked="" type="checkbox"/>
RS-485 (TIA/EIA-485-A)	
115.200 Bd (max.), half-duplex	
125 k Ω ($\frac{1}{8}$ Unit Load)	
RS-232 (TIA/EIA-232)	
1 Mbps (Fast Mode) / 250 kpbs	
5 k Ω (nom.)	
optionally via jumper, 120 Ω + fail-safe biasing	
Galvanic isolation (reinforced) 3.000 V _{RMS} , according to DIN VDE 0884-11	
ESD interference immunity ± 26 kV, HBM (Human Body Model)	

□ Mounting rail bus system

Connectivity
Supply voltage
Interfaces

LITE: <input checked="" type="checkbox"/>	Basic: <input checked="" type="checkbox"/>
Mounting rail bus connector Number of positions: 16, Grid: 2,54mm	
24 V _{DC} (max. 500 mA), 5 V _{DC} (max. 250 mA)	
1x RS-485, 2x UART, Enable-Signal, Error-Signal	

■ Connection details

Supply voltage:

Type of connection	Push-in spring connection, pusher
Conductor cross-section of solid conductors	0,25 .. 0,75 mm ² / 24 .. 19 AWG
Conductor cross-section of stranded conductors	0,25 .. 0,75 mm ² / 24 .. 19 AWG
Conductor cross-section stranded conductors with sleeve	0,25 .. 0,5 mm ² / 24 .. 20 AWG
Stripping length	9 mm

Interface RS-485 / RS-232:

Type of connection	Push-in spring connection, pusher
Conductor cross-section of solid conductors	0,25 .. 0,75 mm ² / 24 .. 19 AWG
Conductor cross-section of stranded conductors	0,25 .. 0,75 mm ² / 24 .. 19 AWG
Conductor cross-section stranded conductors with sleeve	0,25 .. 0,5 mm ² / 24 .. 20 AWG
Stripping length	9 mm

■ Environmental conditions

Ambient temperature (storage)	-40 °C to +65 °C
Ambient temperature (mounting)	-5 °C to +65 °C
Ambient temperature (operational)	-40 °C to +55 °C
Relative humidity	max. 93 % (without condensation)

■ Standards and regulations

Conformity marking	CE
EMC interference immunity	acc. to DIN EN 55024
EMC interference emission	acc. to DIN EN 55032
Elektromagnetic compatibility	acc. to DIN EN IEC 61000-6-2

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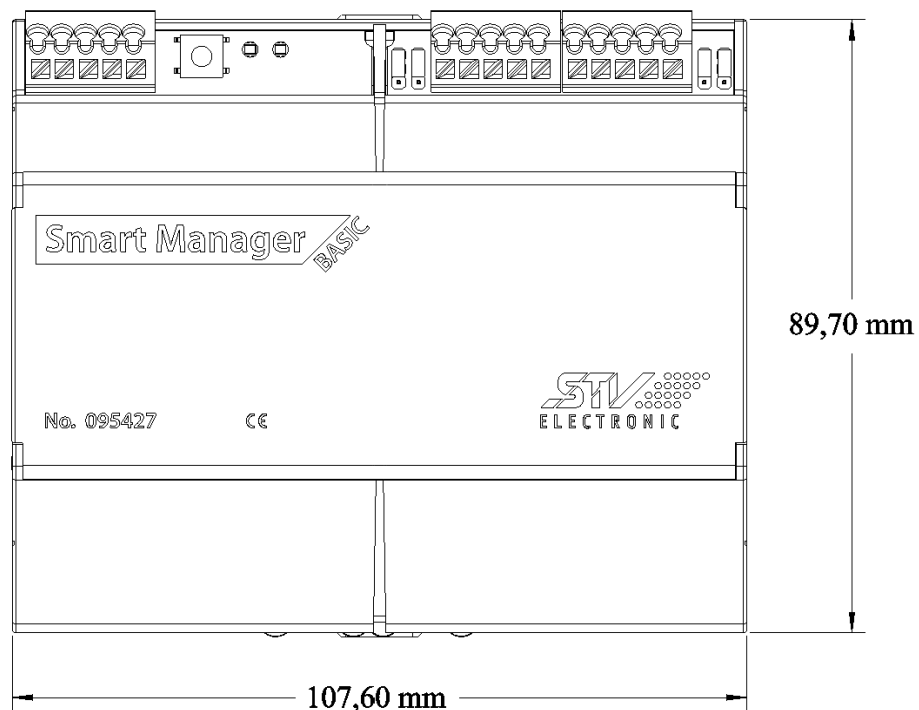


■ Housing data

Type of housing	Installation housing according to DIN 43880
Housing material	Plastic, polycarbonate
Colour	Light grey (RAL 7035), black (RAL 9005)
Flammability category	V0 according to UL 94
Ingress protection	IP 20
Mounting	Mounting rail 35 acc. to DIN EN 50022
Mounting position	parallel to mounting rail

■ Physical Data

Width	107,60 mm
Height	89,70 mm
Depth (device)	60,70 mm
Weight	approx. 220 g



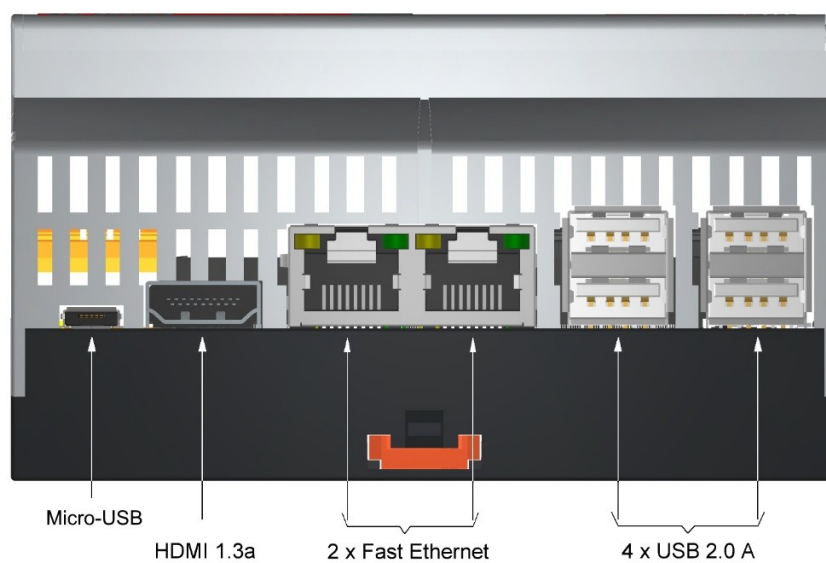
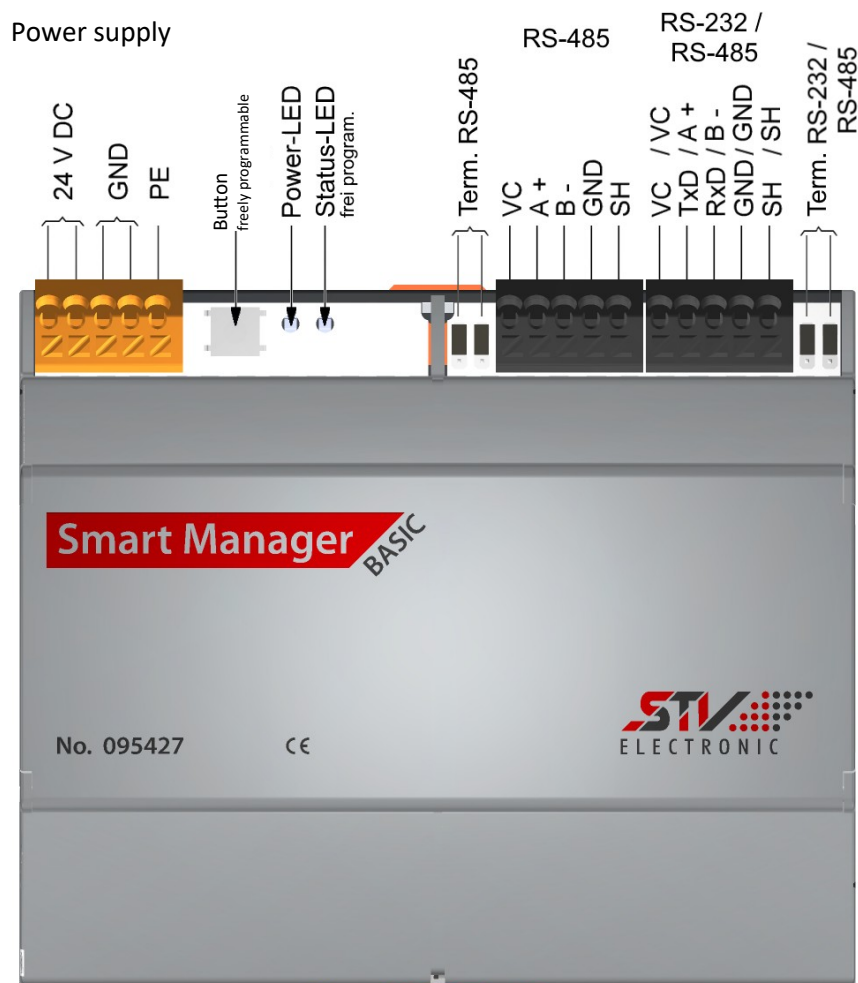
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■ Terminal assignment: type „Basic“



Smart Manager

LITE, Basic

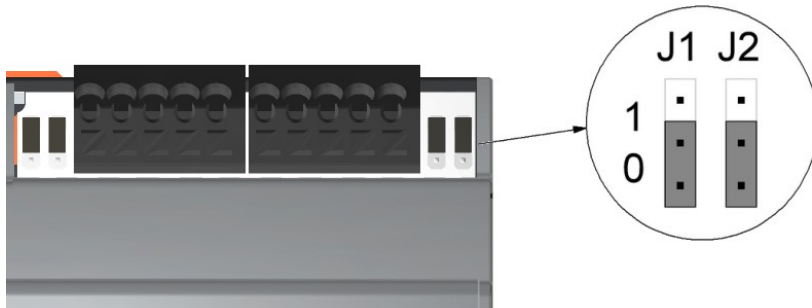
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■ Terminal assignment: type „LITE“



■ Termination



J1 / J2	RS485
POS1	RS485 Termination on
POS0	RS485 Termination off

■ Order details

Article number	Type	Memory	Interfaces
095425	Smart Manager LITE	8 GB eMMC	1x HDMI 1.3a 1x Ethernet 10/100 Mbit/s 2x USB 2.0 Hi-Speed 1x Micro-USB (eMMC Image-Transfer) 1x RS-485, galv. isolated
095427	Smart Manager Basic	32 GB eMMC	1x HDMI 1.3a 2x Ethernet 10/100 Mbit/s 4x USB 2.0 Hi-Speed 1x Micro-USB (eMMC Image-Transfer) 1x RS-485, galv. Isolated 1x RS-485 / RS-232, galv. Isolated Mounting rail system bus ^[5]

[5] necessary article: (Art.-No.: 019265)

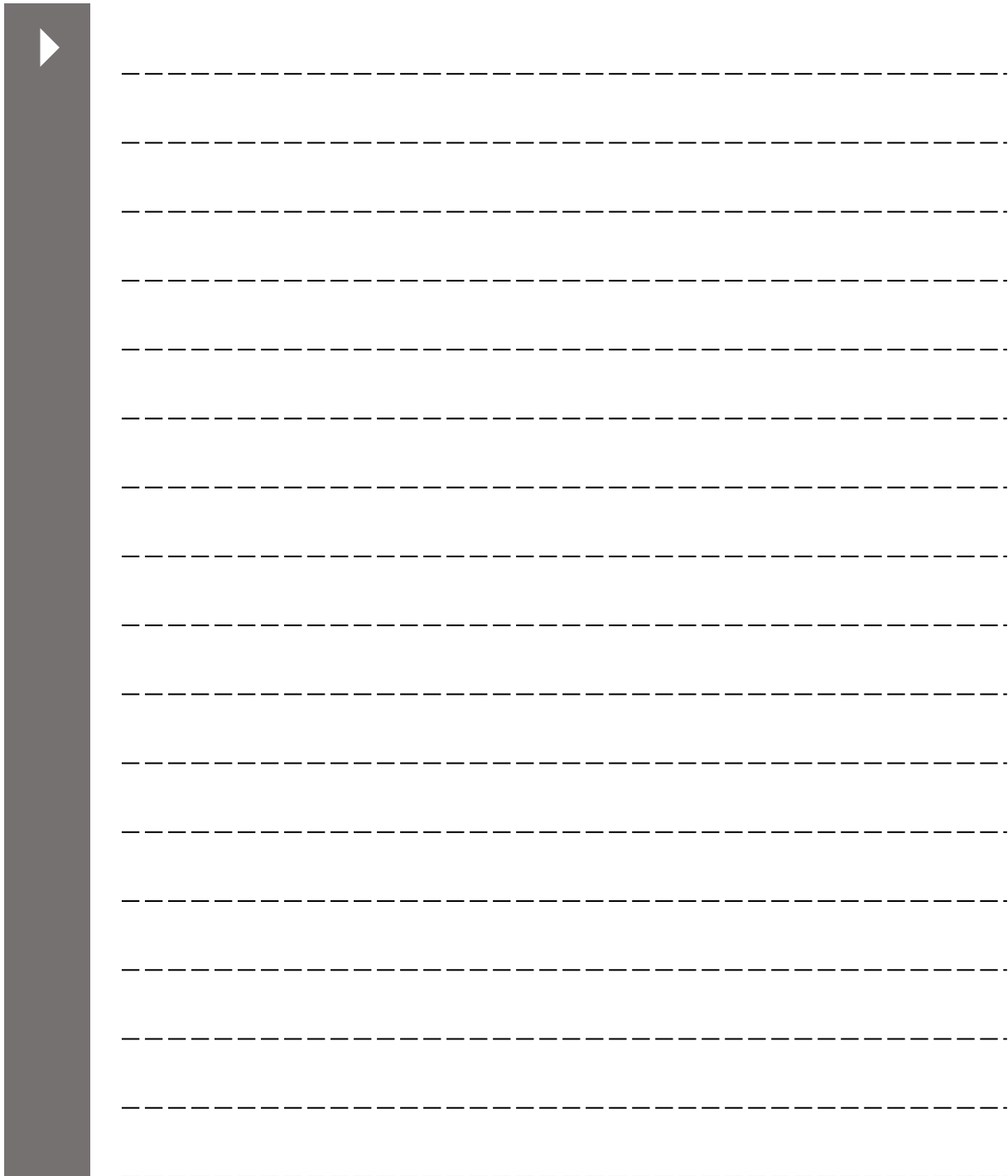
■ Device internal extensions

Article number	Type	Description
095435	Erweiterung RTC (<i>extension</i>)	Real-Time Clock (RTC) with battery buffer
095436	Erweiterung OLED-Panel (<i>extension</i>)	OLED-Display

■ Modular accessories

Article number	Type	Description
019265	Busverbinder 107,6-16P (<i>bus connector</i>)	Bus connector for use with the mounting rail system bus
095430	IO Module 16	I/O-extension with 16 digital In- / Output
095432	AIO Module	I/O-extension with 6 analogue In- / Output
095410	Module LON-FTT	LON Free Topology extension for Smart Manager
095411	Module LON-PLT	LON Powerline extension for Smart Manager

■ Your notes:

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