Elvaco Edge Data Sheet

Elvaco Edge M-Bus and wM-Bus Gateway

The Elvaco Edge platform delivers a versatile and future-ready M-Bus and wireless M-Bus gateway designed to meet the evolving market needs. With its modular architecture, the solution can be adapted to a wide range of different applications.

The gateway offers multiple power source options, either PSU or battery, and can operate on battery power for up to 16 years. It supports the collection of data from all OMS-compliant M-Bus and wireless M-Bus meters. Meter data delivery and device management use standard protocols such as MQTT-SN and LWM2M for seamless integration into existing systems. Alternatively, meter data can be sent using MQTT or HTTP via Elvaco Cloud.

With included connectivity and support for LTE-M and NB-IoT, Elvaco Edge is connected instantly after activation. It supports remote device management and Firmware-Over-The-Air (FOTA). Thanks to its modularity, the Elvaco Edge can be ordered specifically to meet the needs of your project.

- Ingress protection: IP55 or IP65
- Power supply: Mains (PSU) or battery
- Wired M-Bus capacity: 4 (4T) devices or 128 (128T) devices
- Data collection: Wired M-Bus, or wired M-Bus & wireless M-Bus
- Wireless M-Bus antenna: Internal or external
- Mobile networks antenna: Internal or external

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Technical specification

Elvaco Edge variants

Elvaco Edge always includes a set of core features, regardless of variant. These features include an integrated M-Bus master for up to 4 meters (4T), internal antenna for mobile networks, a connector for attaching an external antenna for mobile networks and built-in connectivity. For more information on the different variants, see below table.

Item number	Internal M-bus master 4T	Bat-tery	CMip21 10	WM PSU 3W3.3V	WM PSU 20W36 V/3.3V	Option Module wM-Bus 868 MHz internal antenna	Option Module wM-Bus 868 MHz external antenna	Option module M-Bus Master 128T	Indoor enclo-sure	Out-door enclo-sure
3000001	X	X							X	
3000002	X		X						X	
3000003	X	X				X			X	
3000004	X		X			X			X	
3000005	X	X					X		X	
3000006	X		X				X		X	
3000010	X	X				X				X
3000011	X			X		X				X
3000012	X	X					X			X
3000013	X			X			X			X
3000014					X			X	X	
3000015					X	X		X	X	
3000016					X		X	X	X	
3000025	X	X								X

Mechanics

Mechanics, indoor enclosure

Type	Indoor enclosure	Comments
Enclosure material	ABS	
Enclosure color	White	
Ingress protection class	IP55	Depending on Elvaco Edge variant.
Dimensions (w x h x d)	165x166x54 mm	
Weight	~550-600 g	Depending on Elvaco Edge variant.
Mounting	Wall mounted	Bayonet mount or tray of the Elvaco Edge. Screws are not included.
Maximum screw diameter	4.5 mm	
Maximum screw head	9 mm	Only applies if mounting the tray of Elvaco Edge directly onto the wall.
Alternative mounting kits	DIN Rail kit (1100516), Pole mount kit (1100517)	Pole mount kit for pole diameter 50-250 mm. Can be ordered seperately.
External antenna connector for mobile networks	MCX-f	External antenna requires configuring Elvaco Edge to this using Elvaco OTC App. External antenna is not included.
External antenna connector for wireless M-Bus	SMA-f	Requires an Elvaco Edge model prepared for external wireless M-Bus an-tenna. External antenna is not included.

Mechanics, outdoor enclosure

Type	Outdoor enclosure	Comments
Enclosure material	PC/ASA	
Enclosure color	RAL 7035 (grey)	
Ingress protection class	IP65	Do not alter the enclosure or hardware, as this may impair the IP65 protection rating.
Dimensions (w x h x d)	165x166x54 mm	

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Type	Outdoor enclosure	Comments
Weight	550-600 g	Depending on Elvaco Edge variant.
Mounting	Wall mounted	Bayonet mount or tray of the Elvaco Edge. Screws are not included.
Maximum screw diameter	4.5 mm	
Maximum screw head	9 mm	Only applies if mounting the tray of Elvaco Edge directly onto the wall.
Alternative mounting kits	DIN Rail kit (1100516), Pole mount kit (1100517)	Pole mount kit for pole diameter 50-250 mm. Can be ordered seperately.
External antenna connector for mobile networks	N/A	
External antenna connector for wireless M-Bus	SMA-f	Requires an Elvaco Edge model prepared for external wireless M-Bus antenna. External antenna is not included.

General

Type	Elvaco Edge	Comments
Real time clock backup	24 h	
Real time clock accuracy	< 2 s/day	Requires network time support.
Firmware update	FOTA (Firmware-over-the-air)	
Meter data delivery	MQTT-SN or LwM2M 1.1	
Meter data delivery (via Elvaco Cloud)	MQTT, HTTP (webhook), FTP & Email	Support for CMe2100/3100 push reports format using the mentioned protocols.

Mobile network

Type	Elvaco Edge	Comments
Mobile network	LTE-M and NB-IoT	LTE-M as default
Supported radio bands	3, 8 & 20	
SIM card size	Nano (4FF)	Slide to insert

Electrical characteristics

Electrical characteristics, Battery

Type	Battery	Comments
Supply voltage	38000 mAh 3.6 V	
Battery type	2x D-Cells	
Battery weight	220 g	
Battery lifetime	Up to 16 years	Battery lifetime is dependant on gateway settings and radio environment
Mounting of battery	Internally	The battery is replaceable with an Elvaco recommended battery.

Electrical characteristics, PSU

Type	CMip2110	Comments
Mains power supply	Premounted cable	
Nominal voltage	100-240 (+/- 10%) VAC	
Frequency	50/60 Hz	
Power consumption (Max)	3.8 W	
Power consumption (Nom)	1 W	
Overvoltage category	OVC II	
Max fuse rating	10 A	
Pollution degree	Degree II	

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Electrical characteristics, PSU

Type	WM PSU 3W3.3V	Comments
Mains power supply	Spring terminal (0.75-1.5 mm^2)	
Nominal voltage	100-240 (+/- 10%) VAC	
Frequency	50/60 Hz	
Power consumption (Max)	4.7 W	
Power consumption (Nom)	0.5 W	
Overvoltage category	OVC III	
Max fuse rating	10 A	
Pollution degree	Degree II	

Electrical characteristics, PSU

Type	WM PSU 20W36V/3.3V	Comments
Mains power supply	Spring terminal (0.75-1.5 mm^2)	
Nominal voltage	100-240 (+/- 10%) VAC	
Frequency	50/60 Hz	
Power consumption (Max)	25 W	
Power consumption (Nom)	7.5 W	Power consumption at 128T.
Overvoltage category	OVC III	
Max fuse rating	10 A	
Pollution degree	Degree II	

Environmental specifications

Type	Elvaco Edge	Comments
Operating temperature	-20 to +55 ºC	
Operating humidity max.	5 to 90 %	No condensation.
Operating altitude range	0 - 2000 m	
Pollution degree	Degree 3	
Storage temperature	-20 to +60 ºC	Prolonged exposure to high temperature reduces battery capacity.

User interface

Type	Elvaco Edge	Comments
LEDs	6 RGB LEDs	
Push button	Activation, deactivation, reg update, re-start device	
Remote configuration	LwM2M 1.1	
Local configuration	Elvaco OTC App (via NFC)	ISO/IEC 15693 NFC tag containing NDEF compliant information.

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Integrated wired M-Bus master

Type	M-Bus Master 4T	Comments
Interfaces	M-Bus Master	Screw terminal block (A-B)
M-Bus standard	EN 13757	
Maximum unit loads (internal M-Bus master)	4T/6mA	Can be extended with CMeX20 and an M-Bus Master from CMeX10-13S series or by buying a pre-assembled Elvaco Wired M-Bus Repeater.
Maximum number of wired M-Bus devices	256*	*Supports up to 256 wired M-Bus meters if connecting an external M-Bus master, see Elvaco Wired M-Bus Repeater on www.elvaco.se.
M-Bus baud rate	300, 2400, 9600 bit/s	
Nominal voltage	26.5 V	
M-Bus search modes	Primary, secondary	
Maximum cable length	50 m	
M-Bus Master port (screw terminal)	Cable area 0.25-1.5 mm^2	*N.b! For maintaining IP65 compliance on Elvaco Edge Outdoor, the M-Bus cable must be routed through protective cable gland with an increased outer diameter of 3-6 mm.

Option modules

Option module, Wireless M-Bus 868 MHz

Type	wM-Bus 868MHz	Comments
M-Bus standard	EN 13757-4	
Supported modes	T1, C1, S1	
Frequency bands	868 MHz	434 MHz available for testing.
Maximum number of wireless M-Bus devices	Over 1000 meters	
OMS compliant	Yes	OMS v.4

Option module, M-Bus Master 128T

Type	M-Bus Master 128T	Comments
Interfaces	M-Bus Master	Screw terminal block (C-D)
M-Bus standard	EN 13757-4	
Maximum unit loads (internal M-Bus master)	128T/192mA	
Maximum number of wired M-Bus devices	256*	*Supports up to 256 wired M-Bus meters if connecting an external M-Bus master, see Elvaco Wired M-Bus Repeater at www.elvaco.se.
M-Bus baud rate	300, 2400, 9600 bit/s	
Nominal voltage	36 V	
M-Bus search modes	Primary, secondary	
Maximum cable length	5 km (max 90 Ohm)	
M-Bus master port (screw terminal)	Cable area 0.25-1.5 mm^2	

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Compliance

Type	Value	Comments
RoHS Directive	2011/65/EU	
Electromagnetic Compatibility Directive (EMC)	2014/30/EU	
Low Voltage Directive (LVD)	2014/35/EU	
Radio Equipment Directive (RED)	2014/53/EU	
Environmental	IEC 60529:2013 (Ed 2.2) EN 60529:2014 IEC 62368-1 EN 60950-22:2017	