



**FOCUS ON
ENERGY
MONITORING**

NEW LoRaWAN COMMUNICATION MODULE



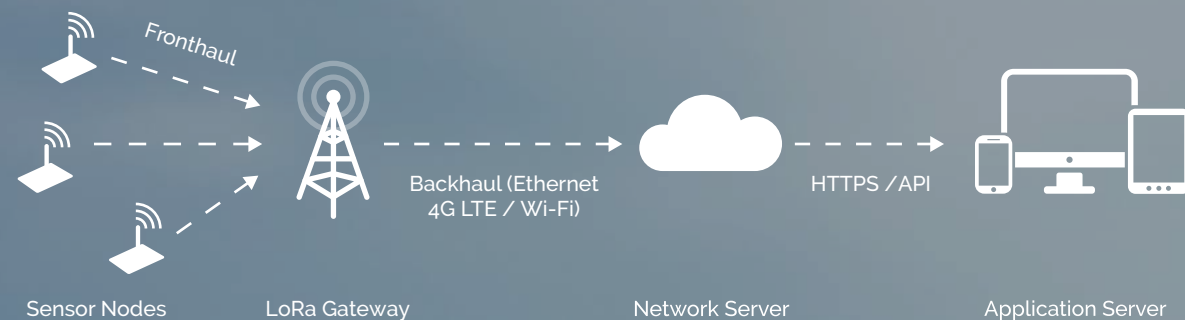
LoRaWAN is the abbreviation for **Long Range Wide Area Network** which uses open-source technology and transmits over unlicensed frequency bands.

LoRaWAN technology provides a far longer range than WiFi or Bluetooth and is especially indicated for applications in remote areas with low network coverage. It can transmit data at a far distance (up to 15 km) using a very low power consumption comparable to the one of a common gate opener remote control.

Thanks to the LoRa Alliance members, the number of edge devices, sensors, gateways and operators is continually growing guaranteeing a rich ecosystem.

Herholdt Controls is a proud member of the LoRa Alliance and our communication module is a certified Class A LoRaWAN device.

A perfect solution to receive fast and easily the readings from all our energy meters and ideal for energy management and cost split.



BUILDINGS ENERGY MANAGEMENT

NEW M3PRO 80 IP MID



Our new **three-phase TCP/IP** is compatible with many of your products and usages.

Thanks to its native Ethernet connection, it provides Modbus TCP/IP communication used in many industrial systems like:

- Supervisory Control and Data Acquisition: SCADA;
- Digital Security Controls: DSC;
- Industrial Control System: ICS;
- And others...

As high end meter is the ideal product for storage systems, heat pumps, EVCS, etc.

Its accurate measurement is Single & Three phases MID certified, applicable also for exacting Home Energy Management systems.

Finally, its systems and its configuration HMI is 100% customizable with your needs, brand and colors.

To ensure the security of the transmitted data, our meter has the possibility to provide a secure Modbus TCP/IP TLS Server using an additional protocol layer (TLS) that adds security to communications. The messages between the client and server are end-to-end encrypted.



ENERGY STORAGE



HEATING & COOLING



EV CHARGING STATIONS

M1PRO ENERGY METERS | SINGLE-PHASE



Model	M1PRO 40	M1PRO 40 MID	M1PRO 40 M-Bus MID	M1PRO 40 Modbus MID
Connection (Amp.)	40	40	40	40
Built-in communication	So	So	M-Bus	Modbus
MID Certification	-	✓	✓	✓
Accuracy class Active Energy (EN 50470-3)	B	B	B	B
Accuracy class Reactive Energy (IEC 620532)	2	2	2	2
Current range (Istart to Imax)	0.015 to 40A	0.015 to 40A	0.015 to 40A	0.015 to 40A
Tariffs	1	1	1	1
Operating temperature	-25 to 55 °C	-25 to 55 °C	-25 to 55 °C	-25 to 55 °C
Storage temperature	-25 to 70 °C	-25 to 70 °C	-25 to 70 °C	-25 to 70 °C
Housing modules (DIN 43880)	1	1	1	1
Backlight LCD	-	-	-	-
Lateral add-on communication	✓	✓	-	-



Model	M1PRO 80 MID	M1PRO 80 M-Bus MID	M1PRO 80 Modbus MID	M1PRO 80 70C Modbus MID
Connection (Amp.)	80	80	80	80
Built-in communication	So	M-Bus	Modbus	Modbus
MID Certification	✓	✓	✓	✓
Accuracy class Active Energy (EN 50470-3)	B	B	B	B
Accuracy class Reactive Energy (IEC 620532)	2	2	2	2
Current range (Istart to Imax)	0.015 to 80A	0.015 to 80A	0.015 to 80A	0.015 to 80A
Tariffs	2	2	2	2
Operating temperature	-25 to 55 °C	-25 to 55 °C	-25 to 55 °C	-25 to 70 °C
Storage temperature	-25 to 70 °C	-25 to 70 °C	-25 to 70 °C	-25 to 80 °C
Housing modules (DIN 43880)	2	2	2	2
Backlight LCD	✓	✓	✓	✓
Lateral add-on communication	✓	✓	✓	✓

M3PRO ENERGY METERS | THREE-PHASE



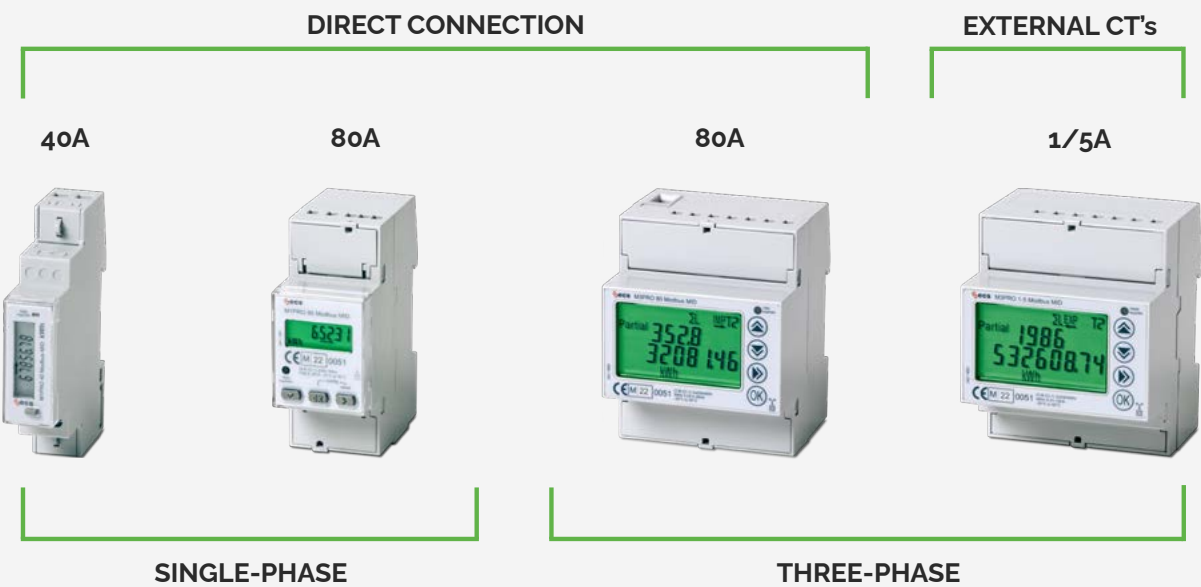
Model	M3PRO 1-5 MID	M3PRO 1-5 M-Bus MID	M3PRO 1-5 Modbus MID	NEW M3PRO 1-5 CANBUS MID	M3PRO 80 MID
Connection (Amp.)	CT (../1A or ../5A)	CT (../1A or ../5A)	CT (../1A or ../5A)	CT (../1A or ../5A)	80
Built-in communication	So	M-Bus	Modbus	CAN or CANopen	So
MID Certification	✓	✓	✓	✓	✓
Accuracy class Active Energy (EN 50470-3)	B	B	B	B	B
Accuracy class Reactive Energy (IEC 620532)	2	2	2	2	2
Current range (Istart to I _{max})	0.002 to 6A	0.002 to 6A	0.002 to 6A	0.002 to 6A	0.015 to 80A
Tariffs	2	2	2	2	2
Operating temperature	-25 to 55 °C	-25 to 55 °C	-25 to 55 °C	-25 to 55 °C	-25 to 55 °C
Storage temperature	-25 to 70 °C	-25 to 70 °C	-25 to 70 °C	-25 to 70 °C	-25 to 70 °C
Housing modules (DIN 43880)	4	4	4	4	4
Backlight LCD	✓	✓	✓	✓	✓
Lateral add-on communication	✓	✓	✓	✓	✓

M3PRO 80 M-Bus MID	M3PRO 80 Modbus MID	M3PRO 80 70C Modbus MID	M3PRO 80 CANBUS MID	M3PRO 80 CANBUS (24V aux supply)	NEW M3PRO 80 IP MID
80	80	80	80	80	80
M-Bus	Modbus	Modbus	CAN or CANopen	CAN or CANopen	TCP/IP
✓	✓	✓	✓	-	✓
B	B	B	B	B	B
2	2	2	2	2	2
0.015 to 80A	0.015 to 80A	0.015 to 80A	0.015 to 80A	0.015 to 80A	0.015 to 80A
2	2	2	2	2	2*
-25 to 55 °C	-25 to 55 °C	-25 to 70 °C	-25 to 55 °C	-25 to 55 °C	-25 to 70 °C
-25 to 70 °C	-25 to 70 °C	-25 to 80 °C	-25 to 70 °C	-25 to 70 °C	-25 to 80 °C
4	4	4	4	4	4
✓	✓	✓	✓	✓	✓
✓	✓	✓	✓	✓	✓

* through communication

GREAT ADVANTAGES AND TAILORMADE SOLUTIONS

The wide range of energy meters will allow Herholdt Controls customers to adapt to different markets and needs, being future oriented to energy and environmental challenges.



MEASUREMENTS FROM 40A TO 80A

Single-phase and three-phase meters direct connected and with external current transformers are suitable for most applications in all countries with European standards.

MID CERTIFIED

The MID certification allows to install the meters for billing purposes according to Measuring Instruments Directive 2014/32/EU.

COMMUNICATION

Beside the available built-in communications (M-Bus, Modbus, Modbus TCP/IP, CAN, CANopen), Herholdt Controls offers also modular communication modules that can be combined via IR interface with the meter (KNX, LAN TCP/ IP, Wireless M-Bus, Modbus, M-Bus and LoRaWAN).

FUTURE ORIENTED

With the CAN and CANopen communication, the extended temperature range meters (up to 70°C) and the new DC meter, Herholdt Controls focuses on up to date applications trends like Energy Storage, Local Electricity Production, Heating & Cooling and E-mobility.

CUSTOMIZABLE

The Herholdt Controls team is willing to offer to its customers the opportunity to customize almost 100% of the meters. See the dedicated page for customization.

GREAT ADVANTAGES AND TAILORMADE SOLUTIONS

FROM BASIC FUNCTIONALITIES TO HIGH PERFORMANCE



Tariffs Inputs

A link to the grid is made with
Tariff management (T1 & T2)

2x Configurable Pulse Outputs

They can report: import & export energy,
active & reactive energy or T1 & T2

Integrated Resistor for Modbus

120 Ω integrated resistor to activate the termination on
the last meter of a Modbus network

Permanent Backlighted Display

On the new meter with extended temperature range (70°C),
the display is always readable in dark conditions (EVCS)

Large Backlighted Display

The most important measures are always displayed

Ideal for Local Energy Production

The meters measure imported & exported energy

Password Setting

Administrator can protect meter settings with a password

Measurements

The meters measure active & reactive energy, power, voltage, current....

Infrared Port

A lateral connection for modular communication modules

M1PRO

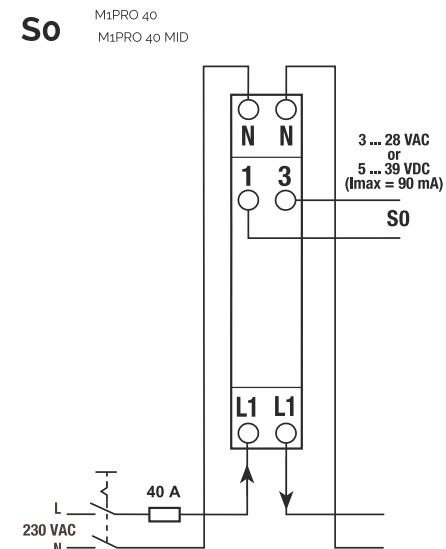
SINGLE-PHASE ENERGY METERS

Model		M1PRO 40	M1PRO 40	M1PRO 40
Communication link		So	So	M-Bus
Current Range		40A	40A	40A
Certification		-	MID	MID
Housing width (DIN modules)		1	1	1
Operating voltage range	VAC	184 ... 276	184 ... 276	184 ... 276
Certified voltage VAC	VAC	1 x 230	1 x 230	1 x 230
Operating frequency range	Hz	45 ... 65	45 ... 65	45 ... 65
Certified frequency	Hz	50	50	50
Starting current (Ist)	mA	15	15	15
Reference current (Iref)	A	5	5	5
Main supply	VAC	Self	Self	Self
Electrical Connection	(wires)	Direct (2)	Direct (2)	Direct (2)
Display	(available digits)	LCD (7)	LCD (7)	LCD (7)
Backlight display		-	-	-
Main terminals	max mm2	16	16	16
Operating temperature	°C	-25° to +55°C	-25° to +55°C	-25° to +55°C
Pulse output So	n°	1	1	-
Measuring accuracy	V-I-P (reading)	±1%	±1%	±1%
	PF (4 quadrants)	±0.05	±0.05	±0.05
	Hz	±0.1	±0.1	±0.1
	EN 50470-1-3 active energy class B	B (1%)	B (1%)	B (1%)
	EN 62053-23 reactive energy class 2	-	-	-
Voltage	L	A, C	A, C	A, B
Current	L	A, C	A, C	A, B
Power factor	L	A, C	A, C	A, B
Frequency	L	A, C	A, C	A, B
Active power	L	A, C	A, C	A, B
Reactive power	L	-	-	B
Apparent power	L	-	-	B
Import active energy		A, C	A, C	A, B
Export active energy		A, C	A, C	A, B
Import active energy	Total (T1+T2)	-	-	-
	Tariff 1 and Tariff 2	-	-	-
Export active energy	Total (T1+T2)	-	-	-
	Tariff 1 and Tariff 2	-	-	-
Import reactive energy	Total (T1+T2)	-	-	-
	Tariff 1 and Tariff 2	-	-	-
Export reactive energy	Total (T1+T2)	-	-	-
	Tariff 1 and Tariff 2	-	-	-
Partial active energy	Tariff 1 and Tariff 2	-	-	-
IR side communication		✓	✓	-

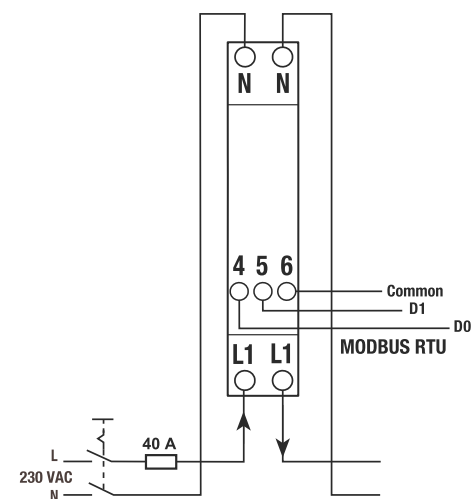
M1PRO 40	M1PRO 80	M1PRO 80	M1PRO 80	M1PRO 80 70C
Modbus	So	M-Bus	Modbus	Modbus
40A	80A	80A	80A	80A
MID	MID	MID	MID	MID
1	2	2	2	2
92 ... 276	92 ... 276	92 ... 276	92 ... 276	92 ... 276
1 x 230	1 x 230	1 x 230	1 x 230	1 x 230
45 ... 65	45 ... 65	45 ... 65	45 ... 65	45 ... 65
50	50	50	50	50
15	15	15	15	15
5	5	5	5	5
Self	Self	Self	Self	Self
Direct (2)	Direct (2)	Direct (2)	Direct (2)	Direct (2)
LCD (7)	LCD (8)	LCD (8)	LCD (8)	LCD (8)
-	✓	✓	✓	✓ (always)
16	35	35	35	35
-25° to +55°C	-25° to +55°C	-25° to +55°C	-25° to +55°C	-25° to +70°C
-	2	-	-	-
±1%	±0.5%	±0.5%	±0.5%	±0.5%
±0.05	±0.03	±0.03	±0.03	±0.03
±0.1	±0.1	±0.1	±0.1	±0.1
B (1%)	B (1%)	B (1%)	B (1%)	B (1%)
-	2%	2%	2%	2%
A, B	A, C	A, B, C	A, B, C	A, B, C
A, B	A, C	A, B, C	A,B,C	A, B, C
A, B	A, C	A, B, C	A, B, C	A, B, C
A, B	A, C	A, B, C	A, B, C	A, B, C
A, B	A, C	A, B, C	A, B, C	A, B, C
B	A, C	A, B, C	A, B, C	A, B, C
B	C	B, C	B, C	B, C
A, B	-	-	-	-
A, B	-	-	-	-
-	A, C	A, B, C	A, B, C	A, B, C
-	A, C	A, B, C	A, B, C	A, B, C
-	A, C	A, B, C	A, B, C	A, B, C
-	A, C	A, B, C	A, B, C	A, B, C
-	A, C	A, B, C	A, B, C	A, B, C
-	A, C	A, B, C	A, C	A, B, C
-	✓	✓	✓	✓

LEGEND: A Measured parameters displayed. B Measured parameters through built-in communication Bus. C Measured parameters through communication interfaces.

M1PRO 40



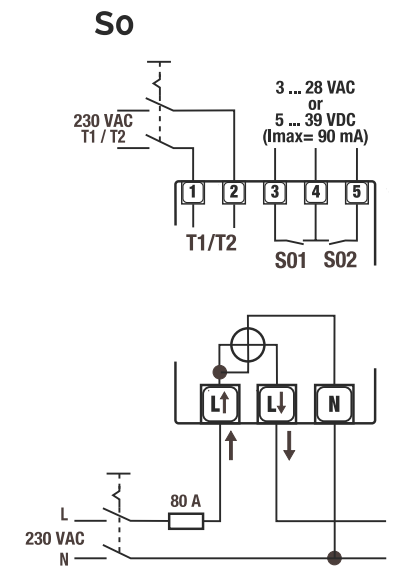
Modbus



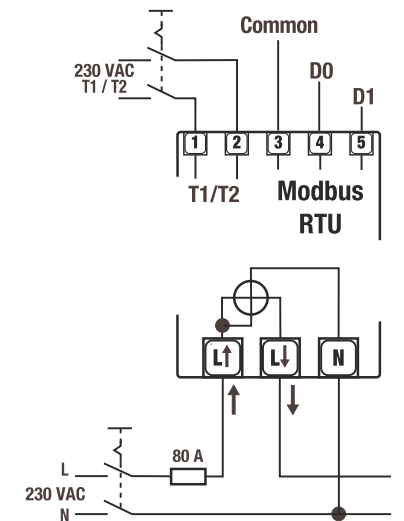
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M1PRO 80



Modbus M1PRO 80 Modbus MID
M1PRO 80 70C Modbus MID



M3PRO

THREE-PHASE ENERGY METERS

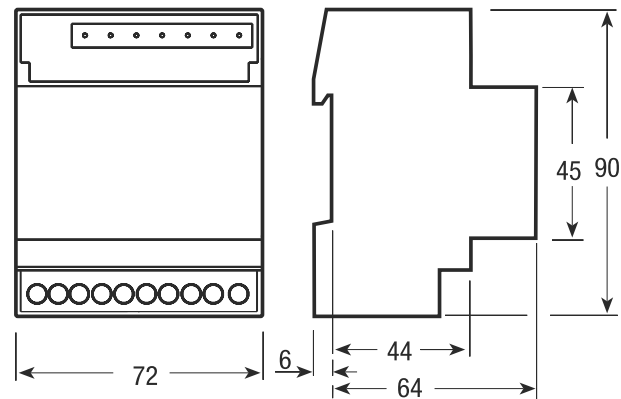
Model	NEW					
	M3PRO 1-5	M3PRO 1-5	M3PRO 1-5	M3PRO 1-5	M3PRO 80	
Communication link		So	M-Bus	Modbus	CAN Open	So
Current Range		.../1-5 A	.../1-5 A	.../1-5 A	.../1-5 A	80 A
Certification		MID	MID	MID	MID	MID
Housing width (DIN modules)		4	4	4	4	4
Operating voltage range	VAC	92 ... 276 / 160 ... 480	92 ... 276 / 160 ... 480	92 ... 276 / 160 ... 480	92 ... 276 / 160 ... 480	92 ... 276 / 160 ... 480
Certified voltage VAC	VAC	3 x 230 / 400	3 x 230 / 400	3 x 230 / 400	3 x 230 / 400	3 x 230 / 400
Operating frequency range	Hz	45 ... 65	45 ... 65	45 ... 65	45 ... 65	45 ... 65
Certified frequency	Hz	50	50	50	50	50
Starting current (Ist)	mA	2	2	2	2	15
Reference current (Iref)	A	1 or 5	1 or 5	1 or 5	1 or 5	5
Main supply	VAC	Self	Self	Self	Self	Self
Electrical Connection	(wires)	Through CT (4)	Through CT (4)	Through CT (4)	Through CT (4)	Direct (2-4)
Display	(available digits)	LCD (9)	LCD (9)	LCD (9)	LCD (9)	LCD (9)
Backlight display	✓	✓	✓	✓	✓	✓
Main terminals	max mm2	6	6	6	6	35
Operating temperature	°C	-25° to +55°C	-25° to +55°C	-25° to +55°C	-25° to +55°C	-25° to +55°C
Pulse output So	n°	2	-	-	-	2
Measuring accuracy	V-I-P (reading)	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%
	PF (4 quadrants)	±0.03	±0.03	±0.03	±0.03	±0.03
	Hz	±0.1	±0.1	±0.1	±0.1	±0.1
	EN 50470-1-3 active energy class B	B (1%)	B (1%)	B (1%)	B (1%)	B (1%)
	EN 62053-23 reactive energy class 2	2%	2%	2%	2%	2%
Voltage	L1, L2, L3	A, C	A, B, C	A, B, C	A,B,C	A,C
	L1-2, L2-3, L3-1	A, C	A, B, C	A, B, C	A,B,C	A,C
Current	L1, L2, L3	A, C	A, B, C	A, B, C	A,B,C	A,C
	N	A	A	A, B	A	A
Power factor	L1, L2, L3	A, C	A, B, C	A, B, C	A,B,C	A,C
	ΣL	A, C	A, B, C	A, B, C	A,B,C	A,C
Frequency	L	A, C	A, B, C	A, B, C	A,B,C	A,C
Active power	L1, L2, L3	A, C	A, B, C	A, B, C	A,B,C	A,C
	ΣL	A, C	A, B, C	A, B, C	A,B,C	A,C
Reactive power	L1, L2, L3	A, C	A, B, C	A, B, C	A,B,C	A,C
	ΣL	A, C	A, B, C	A, B, C	A,B,C	A,C
Apparent power	L1, L2, L3, ΣL	A, C	A, B, C	A, B, C	A,B,C	A,C
	ΣL	A, C	A, B, C	A, B, C	A,B,C	A,C
Import active energy	L1, L2, L3, ΣL	A, C	A, B, C	A, B, C	A,B,C	A,C
	Tariff 1 and Tariff 2	A, C	A, B, C	A, B, C	A,B,C	A,C
Export active energy	L1, L2, L3, ΣL	A, C	A, B, C	A, B, C	A,B,C	A,C
	Tariff 1 and Tariff 2	A, C	A, B, C	A, B, C	A,B,C	A,C
Import reactive energy	L1, L2, L3, ΣL	A, C	A, B, C	A, B, C	A,B,C	A,C
	Tariff 1 and Tariff 2	A, C	A, B, C	A, B, C	A,B,C	A,C
Export reactive energy	L1, L2, L3, ΣL	A, C	A, B, C	A, B, C	A,B,C	A,C
	Tariff 1 and Tariff 2	A, C	A, B, C	A, B, C	A,B,C	A,C
Partial active energy	ΣL	A	A	A, B	A	A
THD% voltage	L1, L2, L3	A	A	A, B	A	A
THD% current	L1, L2, L3	A	A	A, B	A	A
IR side communication		✓	✓	✓	✓	✓

NEW					
M3PRO 80	M3PRO 80	M3PRO 80 70C	M3PRO 80	M3PRO 80	M3PRO 80 IP
M-Bus	Modbus	Modbus 70C	CAN (24V)	CAN Open	TCP/IP
80 A	80 A	80 A	80 A	80 A	80 A
MID	MID	MID	-	MID	MID
4	4	4	4	4	4
92 ... 276 / 160 ... 480	92 ... 276 / 160 ... 480	92 ... 276 / 160 ... 480	92 ... 276 / 160 ... 480	92 ... 276 / 160 ... 480	92 ... 276 / 160 ... 480
3 x 230 / 400	3 x 230 / 400	3 x 230 / 400	3 x 230 / 400	3 x 230 / 400	3 x 230 / 400
45 ... 65	45 ... 65	45 ... 65	45 ... 65	45 ... 65	45 ... 65
50	50	50	50	50	50
15	15	15	15	15	15
5	5	5	5	5	5
Self	Self	Self	Auxiliary (24V)	Self	Self
Direct (2-4)	Direct (2-4)	Direct (2-4)	Direct (2-4)	Direct (2-4)	Direct (2-4)
LCD (9)	LCD (9)	LCD (9)	LCD (9)	LCD (9)	LCD (9)
✓	✓	✓ (always)	✓	✓	✓
35	35	35	35	35	35
-25° to +55°C	-25° to +55°C	-25° to +70°C	-25° to +55°C	-25° to +55°C	-25° to +70°C
-	-	-	-	-	-
±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%
±0.03	±0.03	±0.03	±0.03	±0.03	±0.03
±0.1	±0.1	±0.1	±0.1	±0.1	±0.1
B (1%)	B (1%)	B (1%)	B (1%)	B (1%)	B (1%)
2%	2%	2%	2%	2%	2%
A,B,C	A,B,C	A,B,C	A,B,C	A,B,C	A,B,C
A,B,C	A,B,C	A,B,C	A,B,C	A,B,C	A,B,C
A,B,C	A,B,C	A,B,C	A,B,C	A,B,C	A,B,C
A	A,B	A,B	A	A	A,B
A,B,C	A,B,C	A,B,C	A,B,C	A,B,C	A,B,C
A,B,C	A,B,C	A,B,C	A,B,C	A,B,C	A,B,C
A,B,C	A,B,C	A,B,C	A,B,C	A,B,C	A,B,C
A,B,C	A,B,C	A,B,C	A,B,C	A,B,C	A,B,C
A,B,C	A,B,C	A,B,C	A,B,C	A,B,C	A,B,C
A,B,C	A,B,C	A,B,C	A,B,C	A,B,C	A,B,C
A,B,C	A,B,C	A,B,C	A,B,C	A,B,C	A,B,C
A,B,C	A,B,C	A,B,C	A,B,C	A,B,C	A,B,C
A,B,C	A,B,C	A,B,C	A,B,C	A,B,C	A,B,C
A	A,B	A,B	A,B	A,B	A,B
A	A,B	A,B	A,B	A,B	A,B
A	A,B	A,B	A,B	A,B	A,B
✓	✓	✓	✓	✓	✓

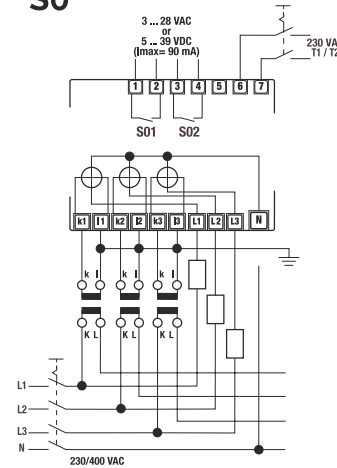
LEGEND: A Measured parameters displayed, B Measured parameters through built-in communication Bus, C Measured parameters through communication interfaces.

M3PRO DIAGRAMS

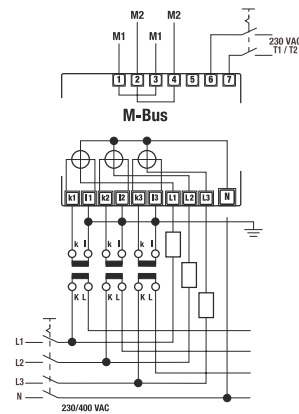
M3PRO 1-5



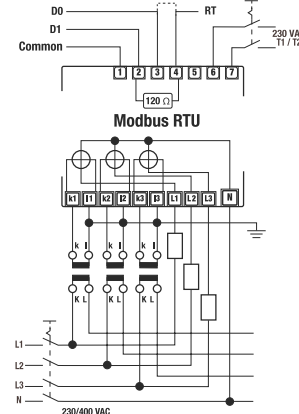
So



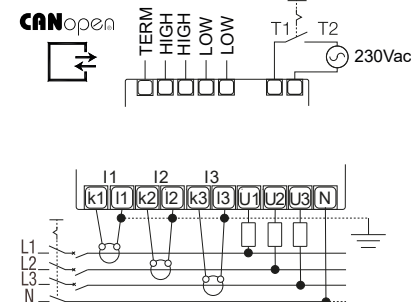
M-Bus



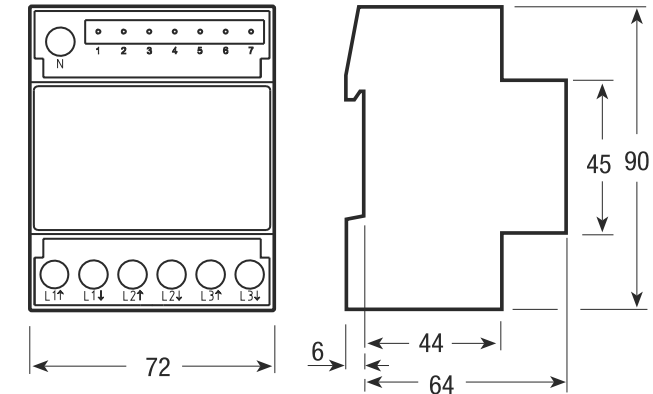
Modbus



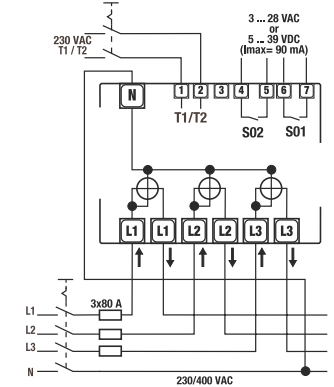
CANbus



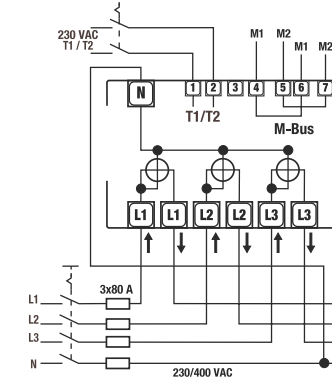
M3PRO 80



So

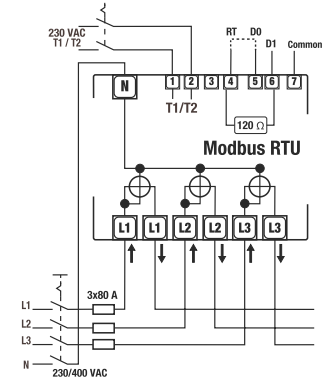


M-Bus

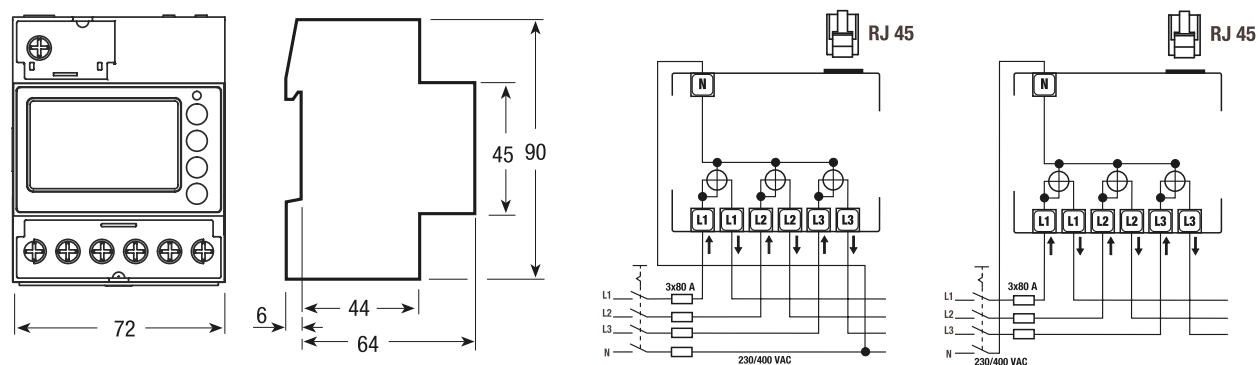


Modbus

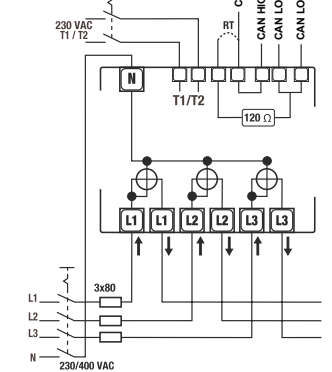
M3PRO 80 Modbus MID
M3PRO 80 70C Modbus MID



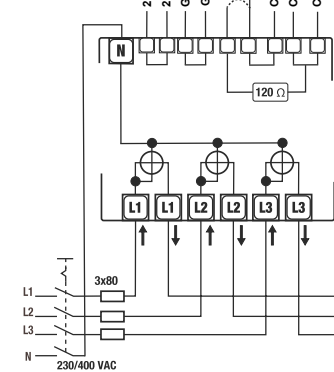
M3PRO 80 IP



CANbus



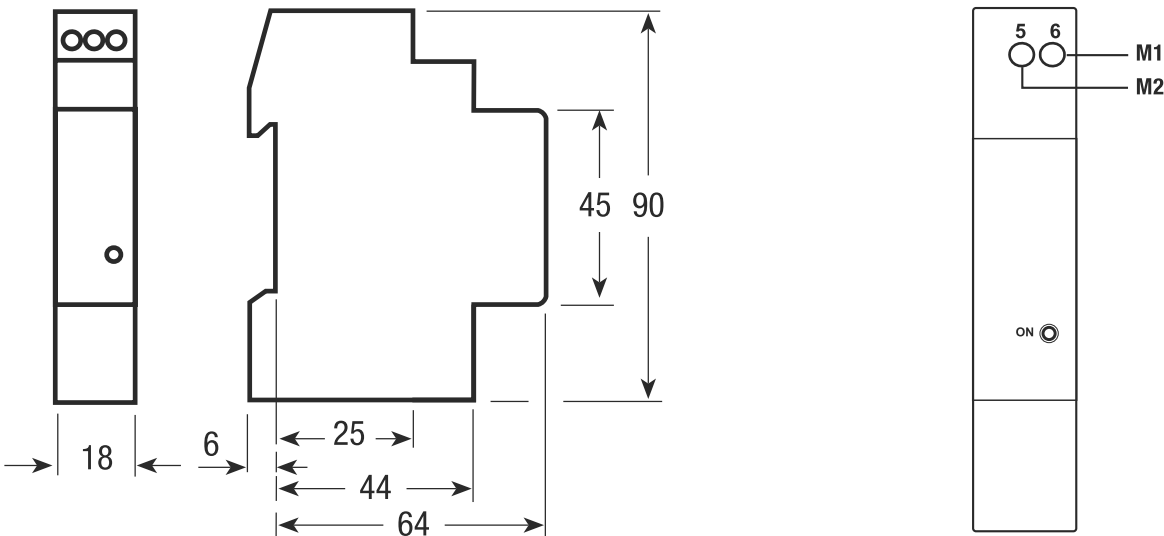
CANbus 24V



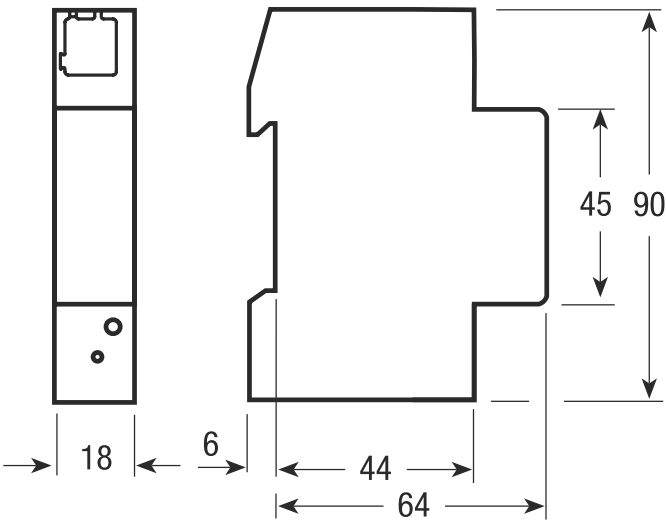
Model		M-Bus	Modbus	KNX	LAN/TCP	Wireless M-Bus		NEW LoRa WAN
Connection with the Meter		IR side interface	IR side interface	IR side interface	IR side interface	IR side interface		IR side interface
Certification	According to	EN 61000 6-2 EN 61000 4-2 EN 60950 EN 13757 -1,-2,-3	EN 61000 6-2 EN 61000 4-2 EN 60950	EN 61000 6-2 EN 61000 4-2 EN 60664-1 EN 50090-2-2	EN 61000 6-2 EN 61000 4-2 EN 60950	EN 300 220 V3.1.1 EN 301 489-1 V2.2.3 EN 62368-1 EN 13757-4		EN300.220 V3.1.1 EN 301 489 EN 62368-1
Housing width (DIN modules)		1	1	1	1	1		1
Power supply	Supply Voltage range	-	230V AC ±20%	-	230V AC ±20%	92 ... 276 VAC		230V AC ±20%
	Supplied by the Bus	✓	-	✓	-	-		-
	Power consumption	-	≤1VA	-	≤1.5VA	≤1.5VA		≤1.5VA
	Supply Frequency range Hz	-	45 ... 65	-	45 ... 65	45 ... 65		45 ... 65
Communication features	Bus - HW interface	M-Bus standard 2 screw terminals	RS-485 3 screw terminals	Black/red connector	Ethernet 100BASE-T RJ45	RF 868 MHz		RF 868 MHz EU863-870
	Bus - SW protocol	acc. EN 13757 -3	Modbus RTU RS-485	KNX - TP1	Modbus TCP / IP	T1	S1- m	LoRaWAN class A
	Bus - Baudrate	300 - 9600	≤ 38400	9600	≤ 100 Mbit/s	100 kcps	32768 cps	250..5470 bit/sec
	Addressing	primary + secondary	1 ... 247	Though ETS	IP address	unique Manufacturer Number		abp or otaa
	User interface for setup and management	-	-	-	W3C HTML 4.01	micro USB 2.0		micro USB 2.0
	Physical interface to the meter	Infrared	Infrared	Infrared	Infrared	Infrared		Infrared
	Infrared data exchange	Tx/Rx	Tx/Rx	Tx/Rx	Tx/Rx	Tx/Rx		Tx/Rx
	Infrared SW protocol	Proprietary	Proprietary	Proprietary	Proprietary	Proprietary		Proprietary
Safety acc. to IEC 60950	Real time clock	-	-	-	✓	-		-
	Pollution degree	2	2	2	2	2		2
	Overvoltage category	II	II	II	II	II		II
Environmental conditions	Working voltage (acc. EN 60950)	40Vrms	300Vrms	40Vrms	300Vrms	300Vrms		300Vrms
	Operating temperature	-10 to 55°C	-10 to 55°C	-10 to 55°C	-25 to 55°C	-10 to 55°C		-25 to 55°C
	Storage temperature	-25 to 70°C	-25 to 70°C	-25 to 70°C	-25 to 70°C	-25 to 70°C		-25 to 70°C
	Vibrations amplitude at 50 Hz	±0.25 mm	±0.25 mm	±0.25 mm	±0.25 mm	±0.25 mm		±0.25 mm
	Protection class	II	II	II	II	II	II	II
Environmental conditions	Degree of protection	IP 20	IP 20	IP 20	IP 20	IP 20	IP 20	IP 20

COMMUNICATION DIAGRAMS

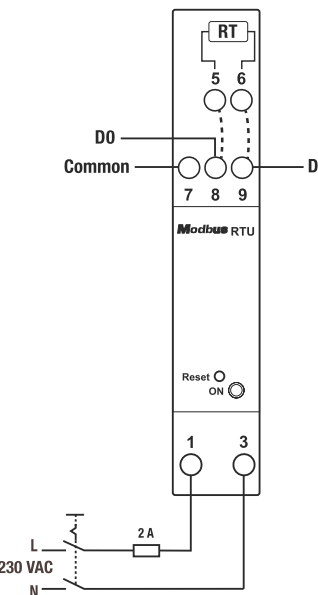
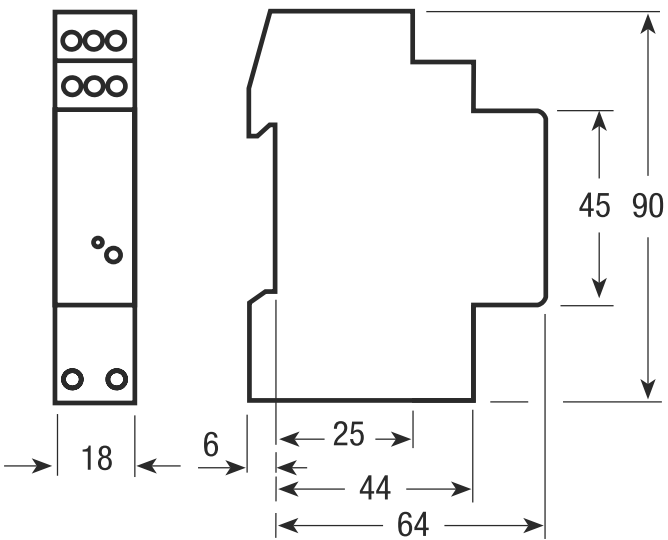
M-Bus



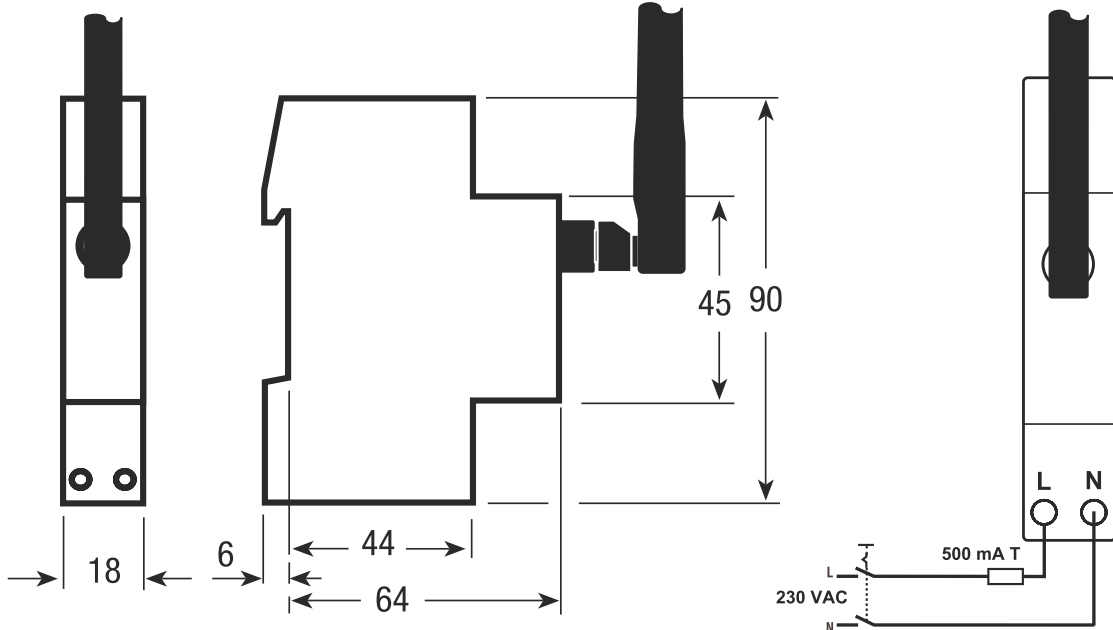
KNX



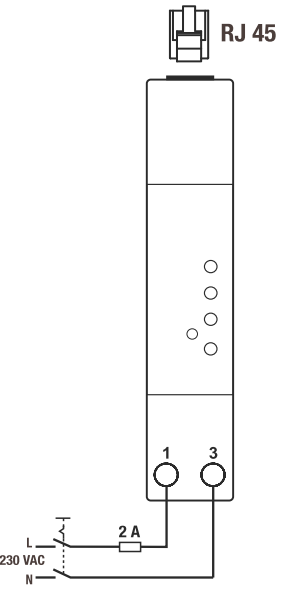
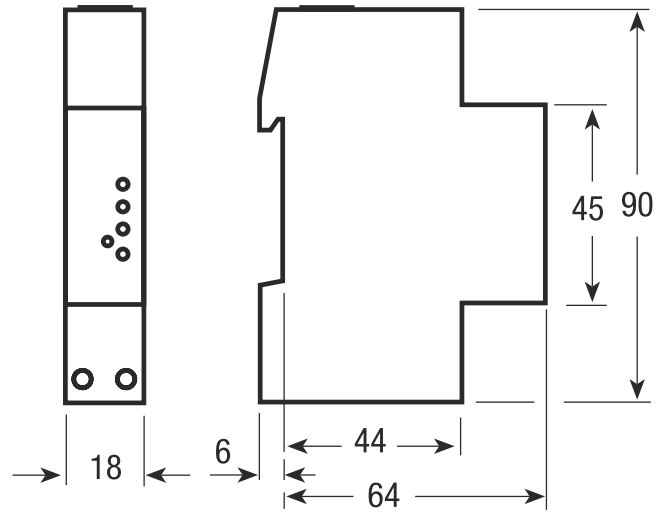
Modbus



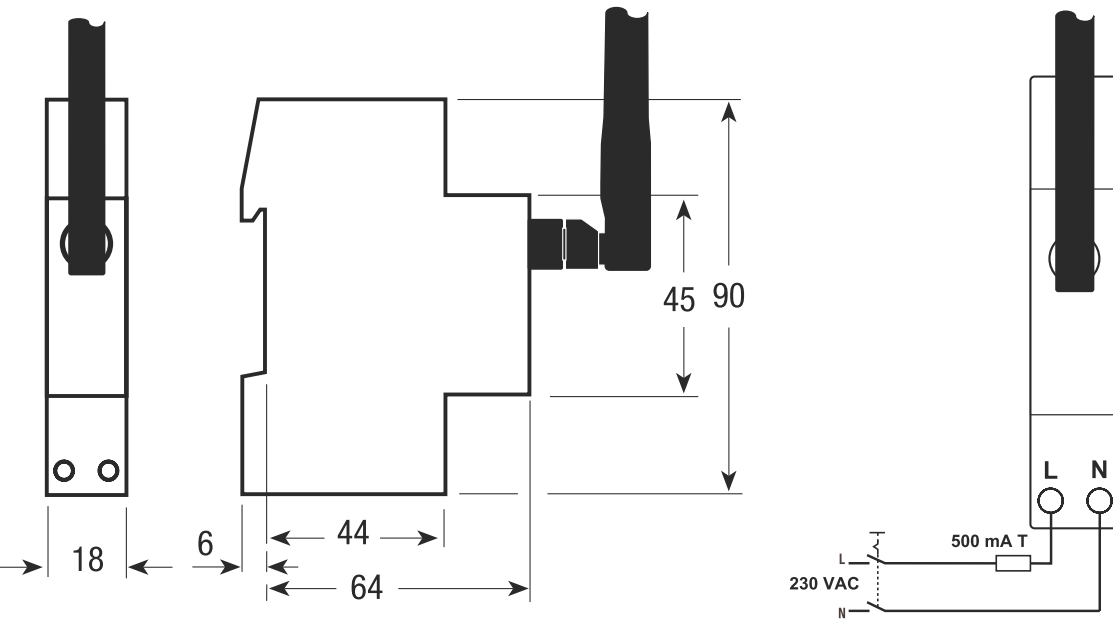
Wireless M-Bus



LAN/TCP



LoRa WAN





30
YEARS

