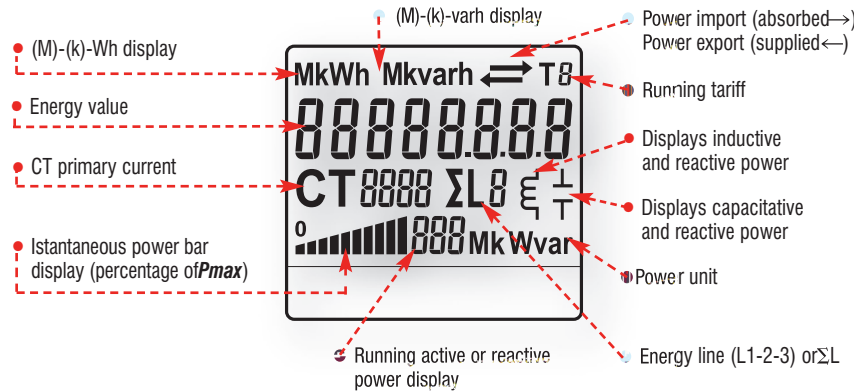


Digital active and reactive energy-meters with measurement of active and reactive instantaneous power, by IR side set up communication

Display

Liquid crystal display with illuminated green background

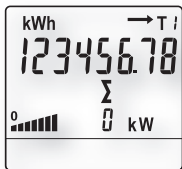


Optical interfaces (Optional)

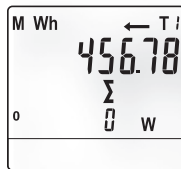
- IR IR-optical readout in accordance with EN 62056-21



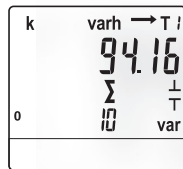
Main Pages



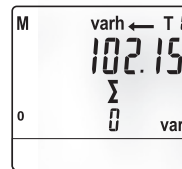
- Import \rightarrow Active Energy T1



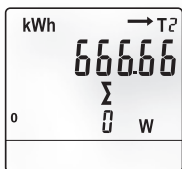
- Export \leftarrow Active Energy T1



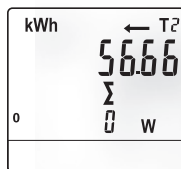
- Import \rightarrow Reactive Energy T1



- Export \leftarrow Reactive Energy T1



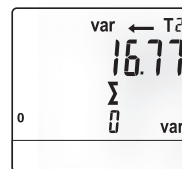
- Import \rightarrow Active Energy T2



- Export \leftarrow Active Energy T2



- Import \rightarrow Reactive Energy T2

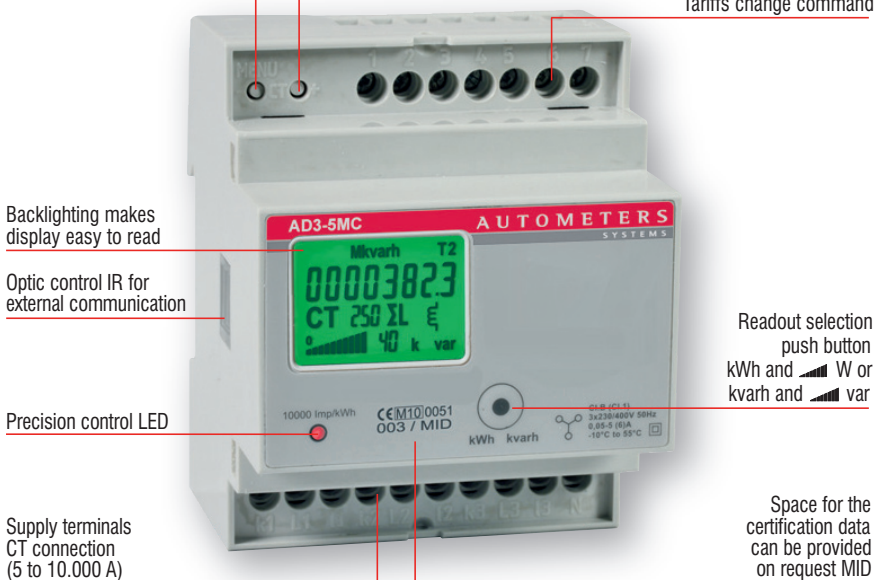


- Export \leftarrow Reactive Energy T2

4 standard module housing, suitable for DIN rail mounting Connection through CT .../5 A till 10.000/5 A

CT selection (5 to 10.000/5 A - 5 A step)

Terminals SO pulse outlet and Tariffs change command



Sealable terminal covers



Technical data

Data in compliance with EN 50470-1, EN 50470-3, EN 62053-23 and EN 62053-31			282331-282301 direct connection 80 A	282201-282141 CT connection till 10.000/5 A
Measuring input				
• Frequency		Hz	50	50
• Input waveform		-	sinusoidal	sinusoidal
• Starting current for energy measurement(<i>I_{st}</i>)		mA	15	3
Pulse output SO				
• Pulse output	acc. to EN 62053-31	-	yes	yes
• Quantity pulse output	for act. and react. energy T1 and T2	imp/kWh	500	-
	for direct connection 80 A	imp/kWh	-	100-10-1
	depending on the transf. factor.	ms	30 ± 2 ms	30 ± 2 ms
• Pulse duration		VAC (DC)	5 ... 230 ± 5% (5 ... 300)	5 ... 230 ± 5% (5 ... 300)
• Required voltage	min. (max.)	mA	90	90
• Permissible current	pulse ON (max. 230 V AC/DC)	µA	1	1
• Permissible current	pulse OFF (leak. cur. max. 230 V AC/DC)			
Optical interfaces				
• Front side (<i>accuracy control</i>)	LED	imp/kWh	1000	10.000
Safety acc. to EN 50470-1				
• Indoor meter		-	yes	yes
• Degree of pollution		-	2	2
• Operational voltage		V	300	300
• AC voltage test (EN 50470-3, 7.2)		kV	4	4
• Impulse voltage test		1.2/50 µs-kV	6	6
• Protection class (EN 50470)		class	II	II
• Housing material flame resistance	UL 94	class	V0	V0
• Safety-sealing between upper and lower housing part (mod. 282331-282141)		-	yes	yes
Adaptor for Communication				
• Plug-and-play technology		-	•	•
• LAN (TCP/IP) interface	Ethernet 802.3	-	10/100 Mbps	10/100 Mbps
• Modbus RTU, Ascii interface	RS-485 - 3 wires	-	up to 19.200 bps	up to 19.200 bps
• M-Bus interface	2 wires	-	up to 9.600 bps	up to 9.600 bps
• EIB-KNX interface	EIB-standard	-	up to 9.600 bps	up to 9.600 bps
• SD-Card Datalogger		-	1 to 8 Gigabytes	1 to 8 Gigabytes
Connection terminals				
• Type cage main current paths	screw head Z +/-	POZIDRIV	PZ2	PZ1
• Type cage pulse output	blade for slotted screw	mm	0.8 x 3.5	0.8 x 3.5
• Terminal capacity main current paths	solid wire min. (max.)	mm ²	1.5 (35)	1.5 (6)
	stranded wire with sleeve min. (max.)	mm ²	1.5 (35)	1.5 (6)
• Terminal capacity pulse outlet	solid wire min. (max.)	mm ²	0.14 (2.5)	0.14 (2.5)
	stranded wire with sleeve min. (max.)	mm ²	0.14 (1.5)	0.14 (1.5)
Environmental conditions				
• Mechanical environment		-	M1	M1
• Electromagnetic environment		-	E2	E2
• Operating temperature		°C	-10 ... +55	-10 ... +55
• Limit temperature of transportation and storage		°C	-25 ... +70	-25 ... +70
• Relative humidity (not condensation)		%	≤ 80	≤ 80
• Vibrations	50 Hz sinusoidal vibration amplitude	mm	± 0.075	± 0.075
• Degree protection	housing when mounted in front (term.)	-	IP51(*)/IP20	IP51(*)/IP20

(*) For the installation in a cabinet at least with IP51 protection.

Selection and ordering data

three-phase active and reactive energy-meter with measurement of active and reactive instantaneous power, set up for communication - 4 modules DIN

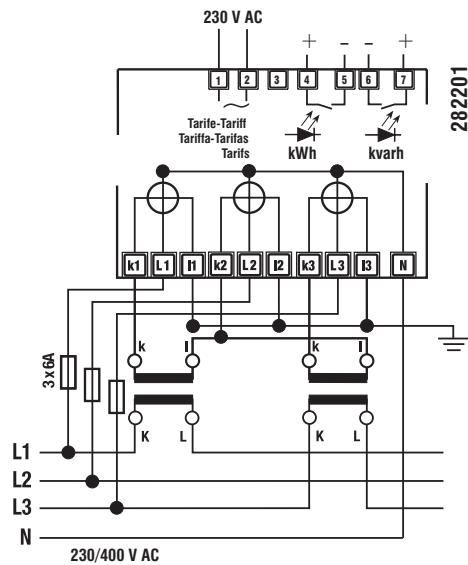
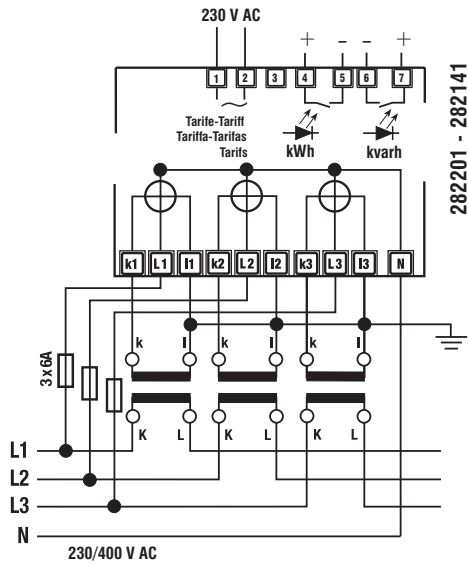
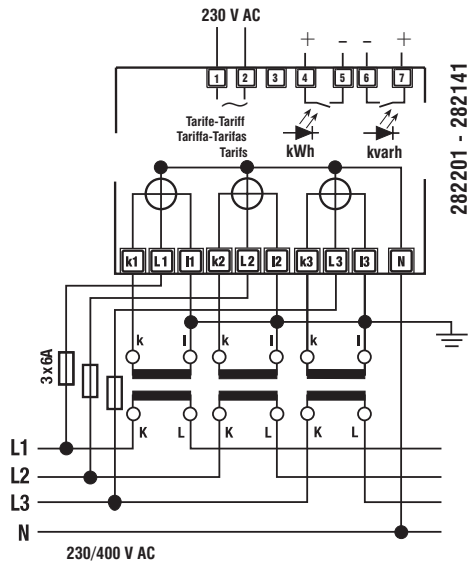
Code	Code	Description
Resettable Energy registers (not MID certified)	Non Resettable Energy registers MID certified	
282331	282301	three-phase digital active and reactive energy-meter with direct connection 0.25-5 (80) A - 2 tariffs - 2 SO
282201	282141	three-phase digital active and reactive energy-meter with connection by CT .../5 A, up to 10.000/5 A - 0.05-5 (6) A - 2 tariffs - 2 SO

Optional - additional communication modules - 1 module DIN

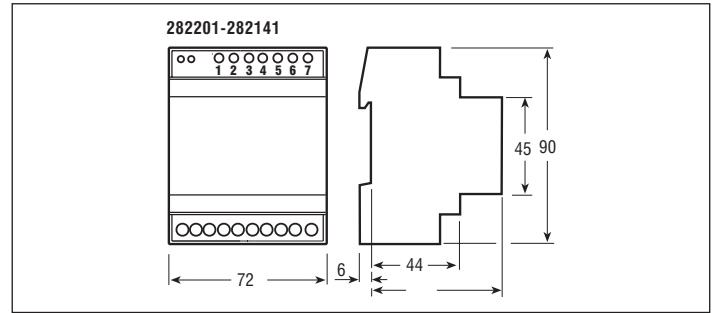
► Connection through CT .../5 A till 10.000/5 A

Circuit diagrams



Wire N needs to be connected to the meter

Overall dimensions



Instructions for the connection of transformer counters

A fuse of 6 A is recommended for the line protection. Current transformers must not be operated with open terminals since dangerous high voltages might occur which may result in personal injuries and property damage. In addition to this, the transformers are exposed to thermal overload.