

ET

Технические характеристики

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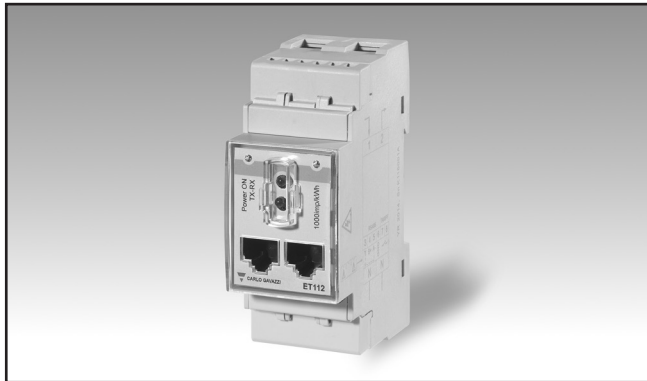
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Energy Management Energy Transducer Type ET112

CARLO GAVAZZI



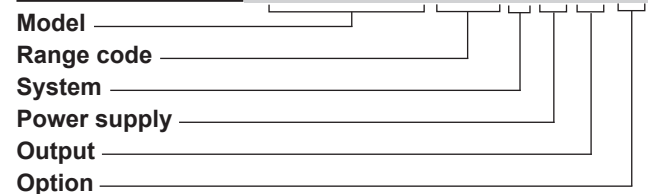
- Single phase energy transducer
- Class 1 (kWh) according to EN62053-21
- Accuracy $\pm 0.5\%$ RDG (current/voltage)
- Direct current measurement up to 100AAC
- Energy measurement: kWh and kvarh (imported/exported); kWh+ by 2 tariffs
- System variables, kW, kvar, V, A, PF, Hz, kWdmd, kWdmd peak
- Self power supply
- Dimensions: 2-DIN module
- Protection degree (front): IP20
- RS485 Modbus port (screw terminals and RJ45 connection)
- Optical port
- Digital input (for tariff management)
- Easy connection or wrong current direction detection
- Run hour meter

Product description

Single-phase energy transducer. Particularly indicated for active energy metering and for cost allocation in applications up to 100 A (direct connection), with dual tariff management availability. It can measure imported and exported energy or be programmed to consider only the imported one. Housing

for DIN-rail mounting, with IP20 front degree protection. The transducer is provided with RS485 Modbus port (available through screw terminals, dual RJ45 connectors or optical infrared communication port). A run-hour meter is available to link the energy to the relevant working hours.

How to order ET112-DIN AV0 1 X S1 X



Type Selection

Range code	System	Power supply	Output
AV0: 230VLN AC - 5(100)A (Direct connection)	1: 1-phase 2-wire	X: Self power supply -30% +20% of the rated measuring input voltage, 45 to 65Hz	S1: RS485 Modbus port
AV1: 120VLN AC - 5(100)A (Direct connection). Available on request (MOQ 100 pcs).			

Option

X: none

Input specifications

Rated Inputs		Memory energy storage	
Current type	1-phase loads, direct connection	Energy	10 ¹⁰ cycles. Energy value is saved every time the less significant digit increases.
Current range	5(100)A	Programming parameters	10 ¹⁰ cycles. When a parameter is modified, only the relevant memory cell is overwritten
Nominal voltage	230VLN AC (AV0 option), 120 VLN (AV1 option)		
Accuracy (@25°C ±5°C, R.H. ≤60%, 45 to 65 Hz)		LEDs	
AV1	I _{min} =0.25A; I _b : 5A, I _{max} : 100A; U _n : 120VLN -30% +30%	Right LED	Flashing red light pulses according to EN62052-11, 1000 pulse per kWh (min. period: 90ms)
AV0	I _{min} =0.25A; I _b : 5A, I _{max} : 100A; U _n : 230VLN -30% +20%	Left LED	Fix green light: power-on Blinking red light: power-on and communication in progress
Energies		Current overloads	
Active energy	Class 1 according to EN62053-21	Continuous	100A, @ 50Hz
Reactive energy	Class 2 according to EN62053-23	For 10ms	3000 A
Start-up current:	40mA (AV0, AV1), positive or negative Self-consumption is not measured.	Voltage Overloads	
Start-up voltage	84VLN (AV1), 161VLN (AV0)	Continuous	1.2 U _n
		For 500ms	2 U _n
Resolution (via serial port)		Input impedance	
Current	0.001 A	Voltage input 230VL-N	1.2Mohm
Voltage	0.1 V	Voltage input 120VL-N	1.2Mohm
Power	0.1 W or var	Current inputs: 5(100) A	< 1.25VA
Frequency	0.1Hz		
PF	0.001		
Energies (positive)	0.1 kWh or kvarh		
Energies (negative)	0.1 kWh or kvarh		
Run hour meter	0.01 h		
Energy additional errors			
Influence quantities	According to EN62053-21		
Temperature drift	≤200ppm/°C		
Sampling rate	4096 samples/s @ 50Hz 4096 samples/s @ 60Hz		
Max. and Min. data values			
Energies	Max. 99 999 999 Min. 0.01		
Variables	Max. 9999 Min. 0.01		
Run hour meter	Max 999 999.99 Min 0.01		



Digital input specifications

Digital inputs	Free of voltage contact	Overload	In case a voltage is erroneously applied to the digital input, the input is not damaged up to 30 VAC/DC.
Function	Tariff management (switch between t1-t2)		
Number of inputs	1		
Contact measurement voltage	5 V		
Contact resistance	100kohm, open contact		
Input impedance	1kohm		

Output specifications

RS485 serial port	RS485 by screw connection or RS485 by standard female RJ45 connectors (not shielded).	Baud rate	9.6, 19.2 kbaud, even or no parity
Function	For communication of measured data, programming parameters	Address	1
Protocol	ModBus RTU (slave function)	Data refresh time	1 sec
Baud rate	9.6, 19.2, 38.4, 57.6, 115.2 kbaud, even or no parity,	Read command	50 words available in 1 read command
Address	1 to 247 (default: 01)	Optical port LEDs	6.5 mm
Driver input capability	1/8 unit load. Maximum 247 transceivers on the same bus.	LED axial distance	- Upper LED is a receiver (from the master to the transducer
Data refresh time	1sec	LED function	- Lower LED is a transmitter (from the transducer to the master).
Read command	50 words available in 1 read command		
RJ45 pin-out	According to Modbus standard: A- (pin5), B+ (pin4), GND (pin8)		
Other ports	All the Modbus ports (screw terminals, two RJ45) are in parallel. Only one port at a time can be used.		
Optical port			
Description	Frontal bi-directional infrared optical coupling with CG optical reader device "Opto-prog"		
Function	For remote communication of measured data and setting of programming parameters		
Protocol	ModBus RTU (slave function)		

General specifications

Operating temperature	-25 to +65 °C, indoor, (R.H. from 0 to 90% non-condensing @ 40°C)	Standard compliance	EN62052-11 EN62053-21
Storage temperature	-30°C to +80°C (R.H. < 90% noncondensing @ 40°C)	Approvals	CE
Overvoltage category	Cat. III	Connections	Measuring inputs: max. 25 mm ² , min. 5 mm ² with/without metallic cable ferrule; Max. screw tightening torque: 2.8 Nm 1.5 mm ² , Min./Max. screws tightening torque: 0.5 Nm
Insulation (for 1 minute)	4000 VAC RMS between measuring inputs and digital/serial output (see table) 4000 VAC RMS	Other terminals	
Dielectric strength	4000 VAC RMS for 1 minute	Housing	35 x 63 x 90 mm Noryl, self-extinguishing: UL 94 V-0 Included
EMC	According to EN62052-11 15kV air discharge;	Dimensions (WxHxD)	
Electrostatic discharges	Test with current: 10V/m from 80 to 2000MHz;	Material	DIN-rail
Immunity to irradiated electromagnetic fields	Test without any current: 30V/m from 80 to 2000MHz;	Sealing covers	
Burst	On current and voltage measuring inputs circuit: 4kV	Mounting	IP20 IP20
Immunity to conducted disturbances	10V/m from 150KHz to 80MHz	Protection degree	
Surge	On current and voltage measuring inputs circuit: 4kV;	Front	Approx. 160 g (packing included)
Radio frequency	According to CISPR 22	Screw terminals (cable inputs)	
		Weight	

Power supply specifications

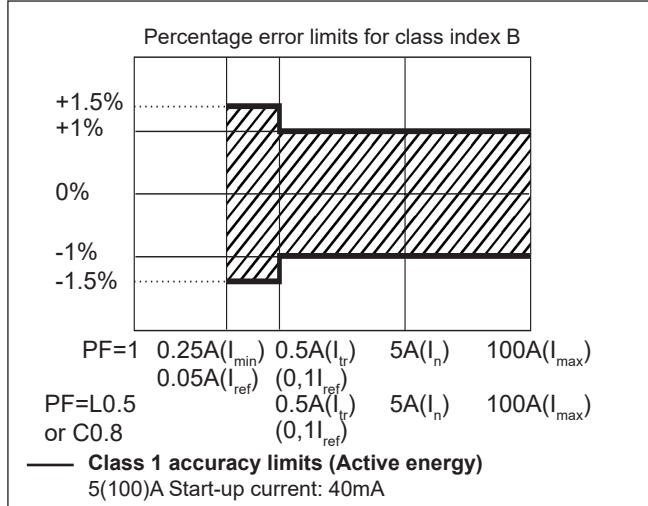
Self power supply	230VAC VL-N, -30% +20% 50/60Hz 120VAC VL-N, -30% +30% 50/60Hz	Power consumption	≤ 1.0W, ≤ 8VA
AV0			
AV1			

Insulation (for 1 minute) between inputs and outputs

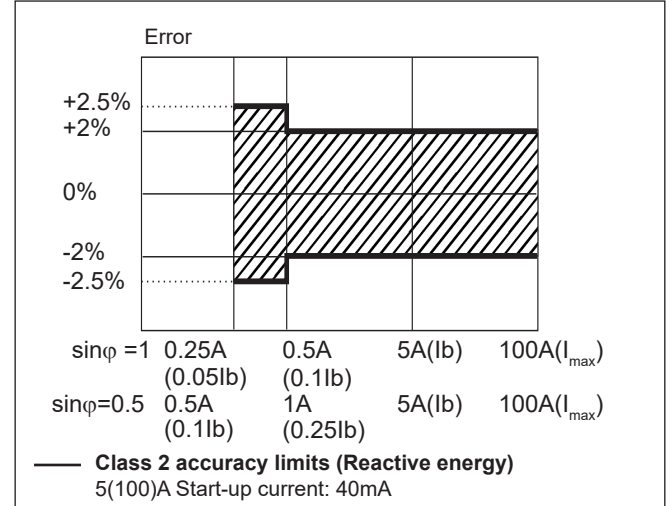
	Measuring input	Serial output	Digital input
Measuring input	-	4 kV	4 kV
Serial output	4 kV	-	0 kV
Digital input	4 kV	0 kV	-

Accuracy (according to 62053-21 and EN62053-23)

kWh, accuracy (RDG) depending on the current



kvarh, accuracy (RDG) depending on the current



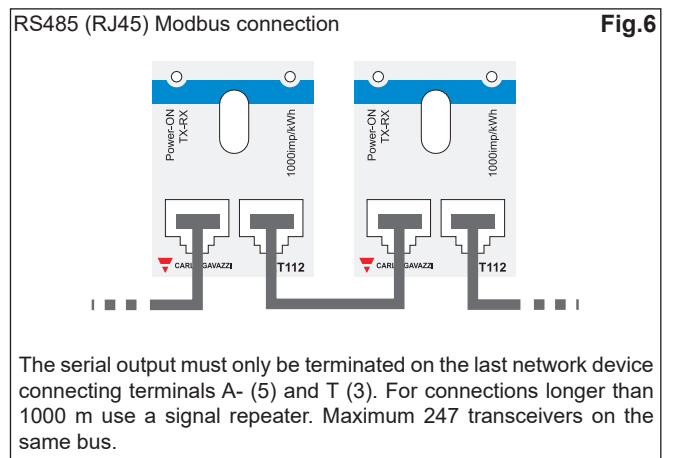
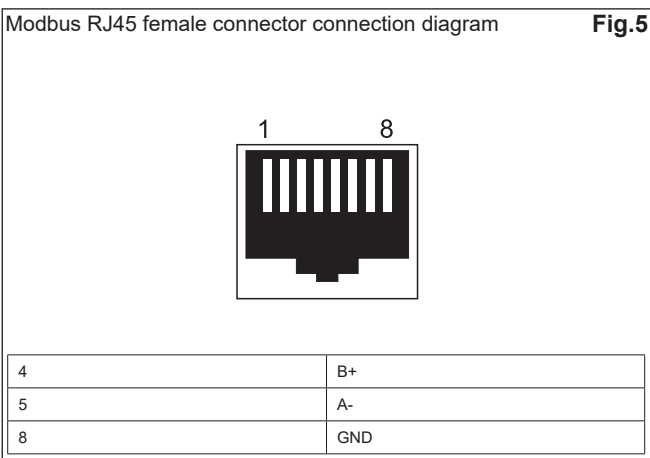
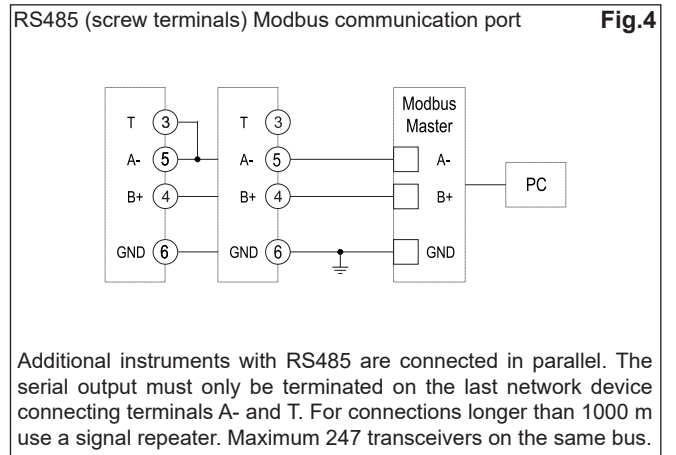
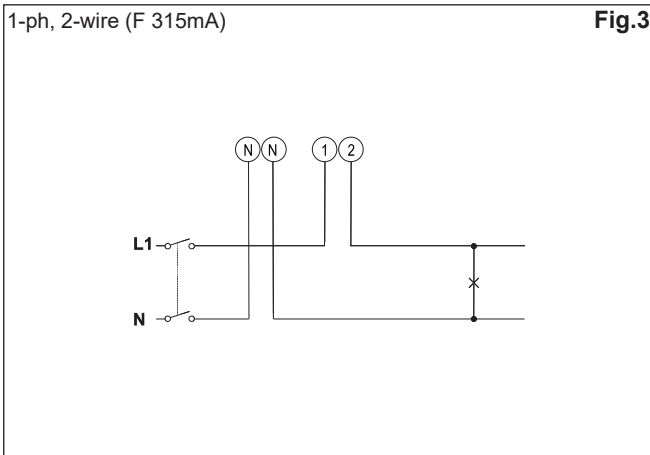
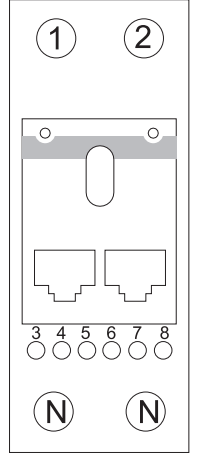
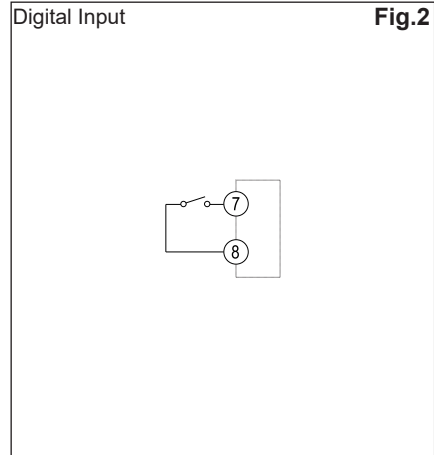
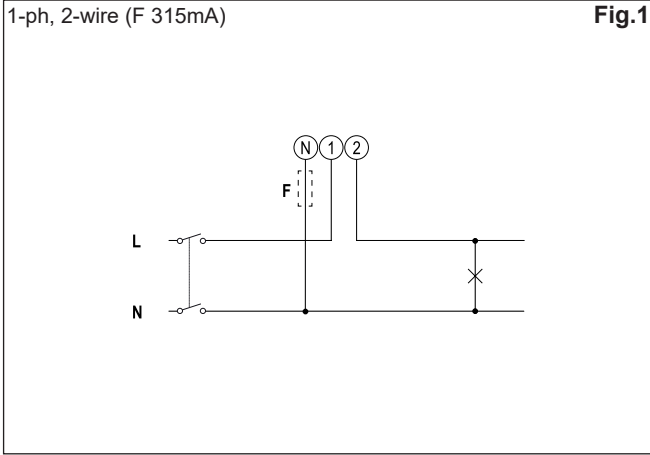
Available variables

1	kWh+ (imported)
2	kWh- (exported)
3	kWh (t1 and t2)
4	kW
5	kW dmd
6	kW dmd peak
7	kvar
8	kVA
9	V
10	A
11	PF
12	Hz
13	Run hour meter

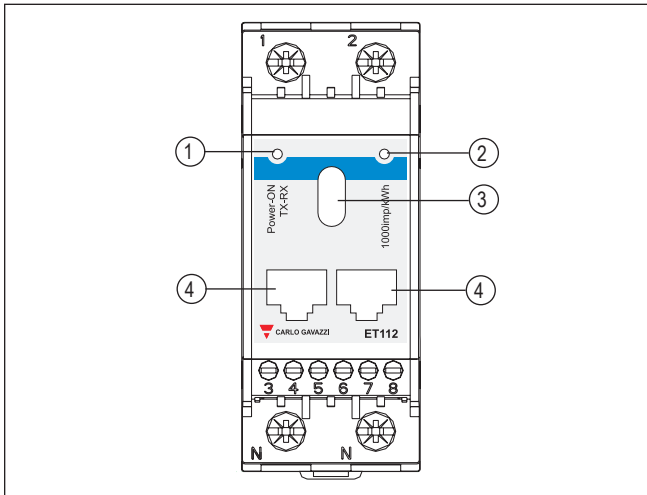
List of programming parameters

Menu name and description		Range	Default setting
Measure	Measurement type (A=easy connection; B=bidirectional, imported and exported energy). Not available in PFA and PFB versions (MID)	A; b	A
P int	Integration time for Wdmd calculation	1 to 30 min	1
Tariff	Tariff enabling	Yes/No	No
Address	Modbus serial address	1 to 247	01
Kbaud	Modbus baud rate	9.6; 19.2; 38.4; 57.6, 115.2 kbps	9.6
ParITY	Modbus parity	No/even	No
RESET	Allow the reset of tariff meters and W dmd peak and of the kWh/kvarh partial meter available only via serial communication	Yes/No	No

Wiring diagrams

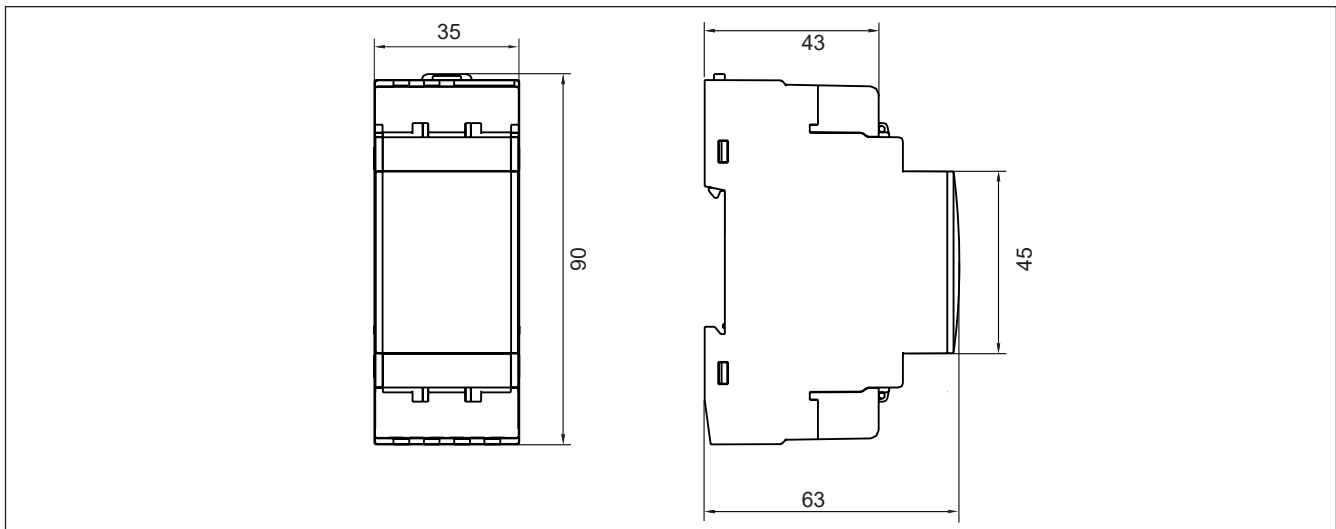


Front panel description



1. **LED**
Power-ON LED with communication indication (when blinking)
2. **LED**
LED proportional to kWh reading
3. **Optical port**
Optical port for data transmission or programming
4. **RJ45 Modbus RTU ports (RS485)**
Modbus ports for fast bus connection. The ports are in parallel. The screw terminals can be used as well (same Modbus port).

Dimensions (mm)



Energy Management Energy Transducer Type ET330

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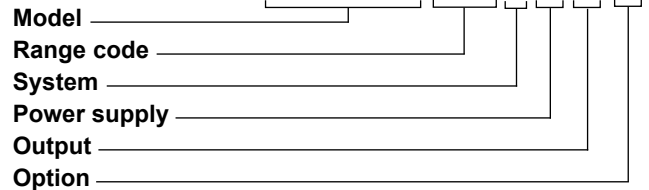


- Three phase energy transducer
- Class 0.5S (kWh) according to EN 62053-22
- Accuracy $\pm 0.5\%$ RDG (current/voltage)
- Current measurement via CT
- Energy measurement: kWh and kvarh (imported/exported); kWh+ by 2 tariffs; kWh per phase
- System variables: kW, kvar, kVA, VLL, VLN, PF, Hz, kWdmd, kWdmd peak
- Phase variables: kW, kvar, kVA, VLL, VLN, A, PF
- Auxiliary power supply
- Dimensions: 3-DIN module
- Protection degree (front): IP20
- RS485 Modbus port
- Run hour meter
- Neutral current calculation
- Digital input (for tariff management)
- Easy connection

Product description

Three-phase energy transducer. Particularly indicated for active energy metering and for cost allocation (CT connection), with dual tariff management availability. It can measure imported and exported energy or be programmed to consider only the imported one. Housing for DIN-rail mounting. The transducer is provided with RS485 Modbus port.

How to order **ET330 DIN AV5 3 H S1 X**



Type Selection

Range code	System	Power supply	Output
AV5: 400 to 480 VLL ac - 5(6) A (CT connection) 230 to 277 VLN ac - 5(6) A (CT connection)	3: 3-phase, 3- or 4-wire; 2-phase 3-wire, 1-phase 2 wire	H: auxiliary power supply 100 to 240V ac/dc	S1: RS485 Modbus port

Option

X: none

Input specifications

Rated Inputs		Memory	
Current type	3-phase loads, CT connection	Energy	10 ¹² cycles. Energy value is saved every time the less significant digit increases.
Current range	5(6)A	Programming parameters	10 ¹² cycles. When a parameter is modified, only the relevant memory cell is overwritten
Nominal voltage	400 to 480 V LL ac		
Max CTxVT	1000		
Accuracy (@23°C ±2°C, 45 to 65 Hz)	0.01In=0.05A (kWh, PF=1) 0.05In=0.25A (kWh, PF=1) In: 5A, I _{max} : 6A; Un: 230 to 277 VLN (400 to 480 VLL)	LEDs	
Current	From 0.04In to 0.2In: ±(0.5%RDG+1DGT) From 0.2In to I _{max} : ±(0.5%RDG)	Flashing red light pulses	Proportional to the product of the CT and VT ratios
Phase-neutral voltage	In the range Un: ±(0.5% RDG)	Weight (pulses/kWh) 1	> 700,1 (CT x VT)
Phase-phase voltage	In the range Un: ±(2% RDG)	Weight (pulses/kWh) 10	70.1–700 (CT x VT)
Frequency	Range: 45 to 65Hz.	Weight (pulses/kWh) 100	7.1–70 (CT x VT)
Active power	From 0.05 In to I _{max} , within Un range, PF=1: ±(1% RDG) From 0.1 In to I _{max} , within Un range, PF=0.5L or 0.8C: ±(1% RDG) ±[0.001+1%(1.000 - "PF RDG")]	Weight (pulses/kWh) 1000	< 7.1 (CT x VT)
Power factor	From 0.05 In to I _{max} , within Un range, sinphi=1: ±(2% RDG)	Duration	90ms
Reactive power	From 0.1 In to I _{max} , within Un range, sinphi=0.5L or 0.8C: ±(2% RDG)	Fix orange light	wrong current direction (with "B" measurement selection)
Energies		Current overloads	
Active energy	Class 0.5S according to EN 62053-22	Continuous	6A, @ 50Hz
Reactive energy	Class 2 according to EN 62053-23	For 500ms	20 I _{max}
Start-up current:	5 mA	Voltage Overloads	
Start-up voltage	90 V LN	Continuous	1.2 Un
Resolution	serial communication	For 500ms	2 Un
Current	0.001 A	Input impedance	
Voltage	0.1 V	230VL-N	2.1 Mohm
Power	0.1 W or var or VA	5(6) A	< 1 VA
Frequency	0.1Hz		
PF	0.001		
Energies (positive)	0.1 kWh or kvarh		
Energies (negative)	0.1 kWh or kvarh		
Run hour	0.01 hour		
Energy additional errors			
Influence quantities	According to EN 62053-22/-23		
Temperature drift	According to EN 62053-22/-23		
Sampling rate	4096 samples/s @ 50Hz 4096 samples/s @ 60Hz		



Digital input specifications

Digital inputs	Free of voltage contact	Overload	In case a voltage is erroneously applied to the digital input, the input is not damaged up to 30 V ac/dc.
Function	Tariff management (switch between t1-t2)		
Number of inputs	1		
Contact measurement voltage	5 V		
Contact resistance	≥100 kohm, open contact		
Input impedance	10 Mohm		

Output specifications

RS485 serial port	RS485 by screw connection or RS485 by standard female RJ45 connectors (not shielded). For communication of measured data, programming parameters	Baud rate	9.6 kbaud, no parity
Function	Modbus RTU (slave function)	Address	1
Protocol	Modbus RTU (slave function)	Data refresh time	1 s
Baud rate	9.6, 19.2, 38.4, 57.6, 115.2 kbaud,	Read command	50 words available in 1 read command
Data format	even or no parity,	Optical port LEDs	
Address	1 to 247 (default: 1)	LED axial distance	6.5 mm
Driver input capability	1/8 unit load. Maximum 247 devices on the same bus.	LED function	- Upper LED is a receiver (from the master to the transducer) - Lower LED is a transmitter (from the transducer to the master).
Data refresh time	1 s		
Read command	50 words available in 1 read command		
RJ45 pin-out	According to Modbus standard: A- (pin5), B+ (pin4), GND (pin8)		
Other ports	All the Modbus ports (screw terminals, two RJ45) are in parallel. Only one port at a time can be used.		
Optical port			
Description	Frontal bi-directional infrared optical coupling with CG optical reader device "Opto-Prog"		
Function	For remote communication of measured data and setting of programming parameters		
Protocol	Modbus RTU (slave function)		

General specifications

Operating temperature	-25 to +65 °C (-13 to 149° F), indoor, (R.H. from 0 to 90% non-condensing @ 40°C)	Housing	
Storage temperature	-30°C to +80°C (-22 to 176° F) (R.H. < 90% non condensing @ 40°C)	Dimensions (WxHxD)	54 x 90 x 63 mm
Overvoltage category	Cat. III	Material	PBT, self-extinguishing: UL 94 V-0
Insulation (for 1 minute)	4000 V ac RMS between measuring inputs and digital/serial output (see table) 4000 V ac RMS	Sealing covers	Included
Dielectric strength	4000 V ac RMS for 1 minute	Mounting	DIN-rail
EMC		Protection degree	
Immunity	According to EN 61000-6-2	Front	IP20
Emission	According to EN 61000-6-3	Screw terminals	IP20
Standard compliance		Weight	Approx. 240 g (packing included)
Safety	EN 61010-1		
Metrology	EN 62053-21		
Approvals	CE, cULus (UL 61010-1)		
Connections			
Voltage inputs	Cable cross-section area: max. 4 mm ² , min. 1 mm ² with/without metallic cable ferrule; Max. screw tightening torque: 0.6 Nm		
Other terminals	Cable cross-section area: 1.5 mm ² , Min./Max. screws tightening torque: 0.4 Nm		

Power supply specifications

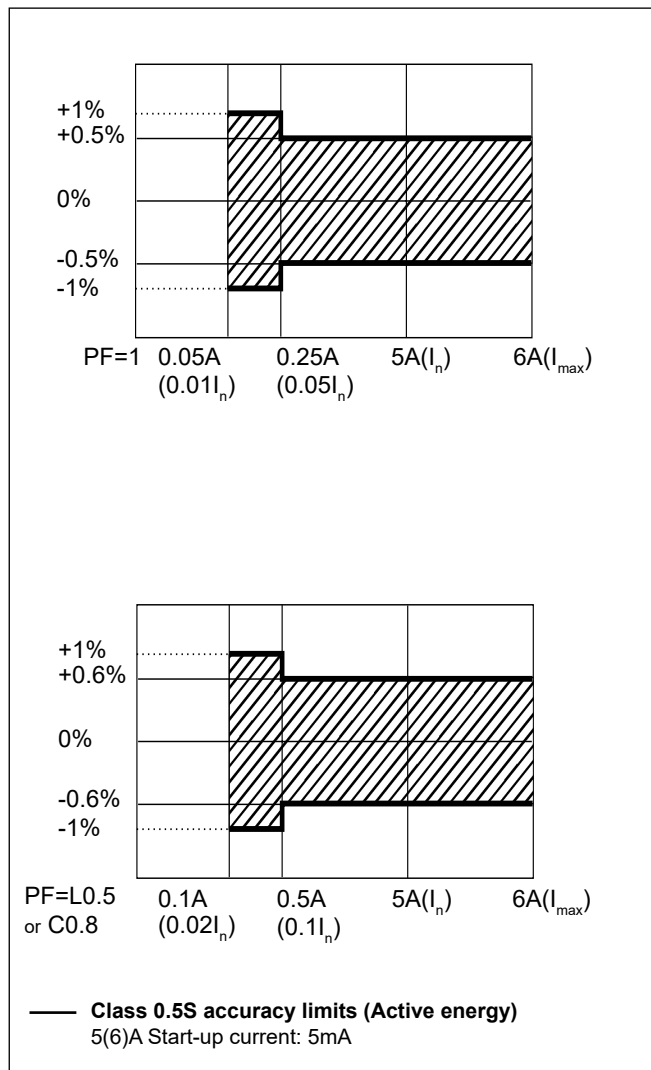
Auxiliary power supply	H: 100 to 240 V ac/dc	Power consumption	≤ 1W, ≤ 8VA
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Insulation (for 1 minute) between inputs and outputs

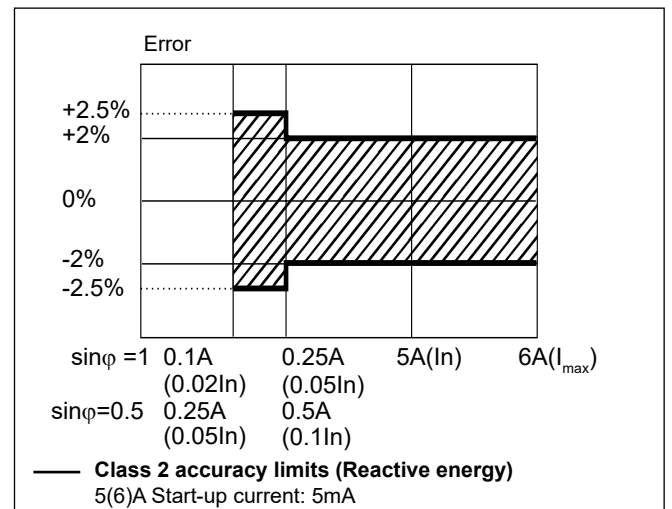
	Measuring input	Serial output	Digital input
Measuring input	-	4 kV	4 kV
Serial output	4 kV	-	0 kV
Digital input	4 kV	0 kV	-

Accuracy (according to EN 62053-22 and EN 62053-23)

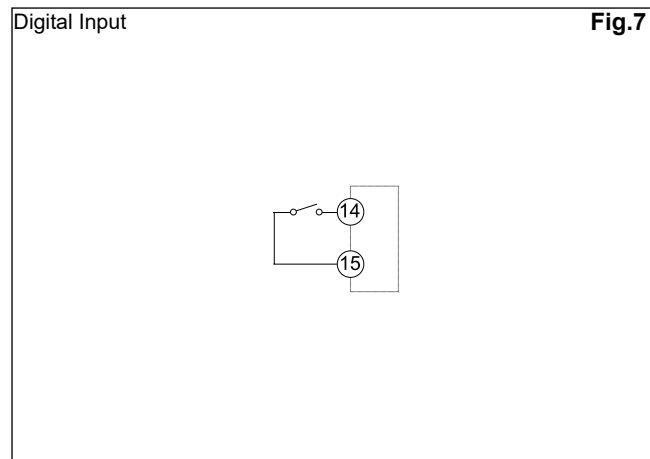
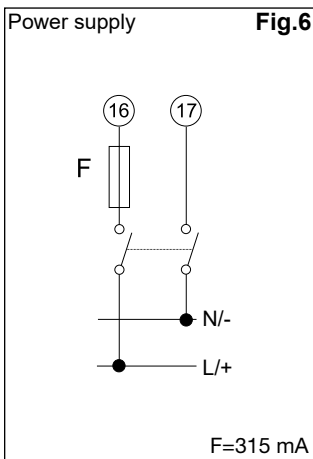
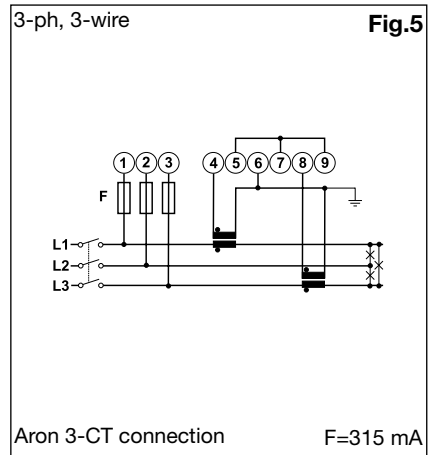
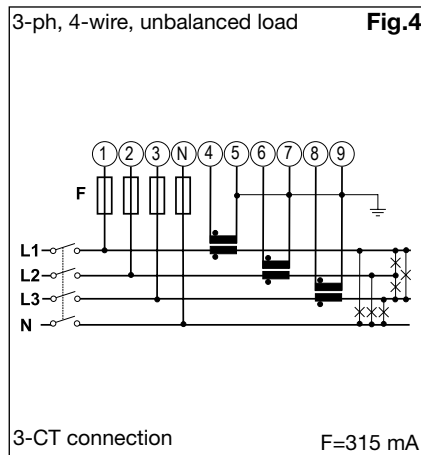
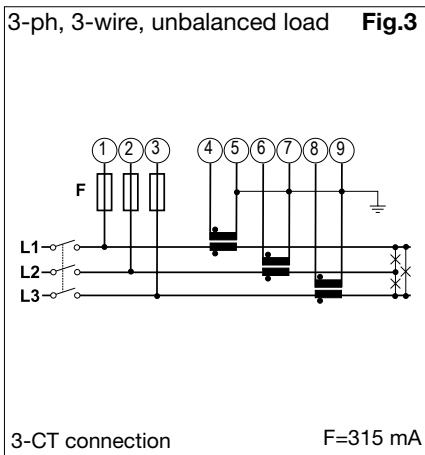
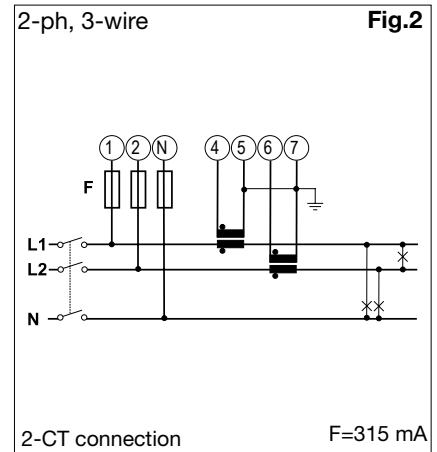
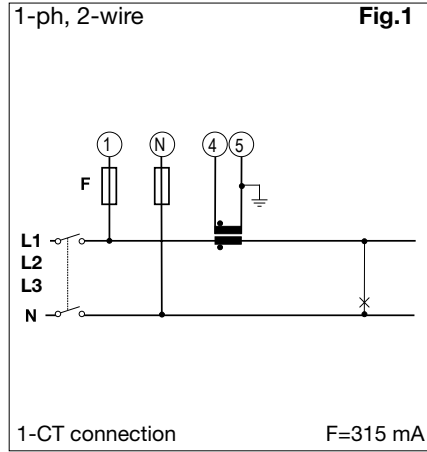
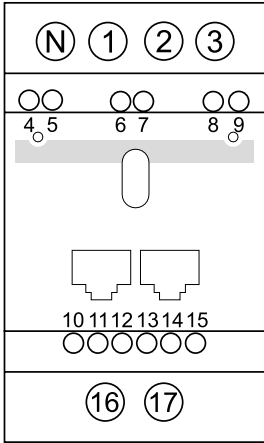
kWh, accuracy (RDG) depending on the current



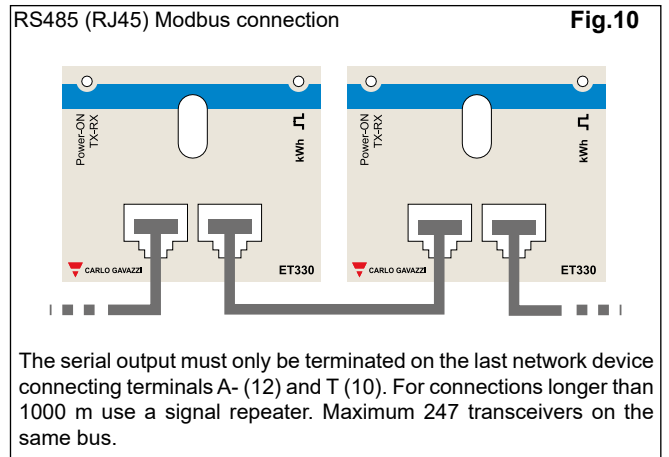
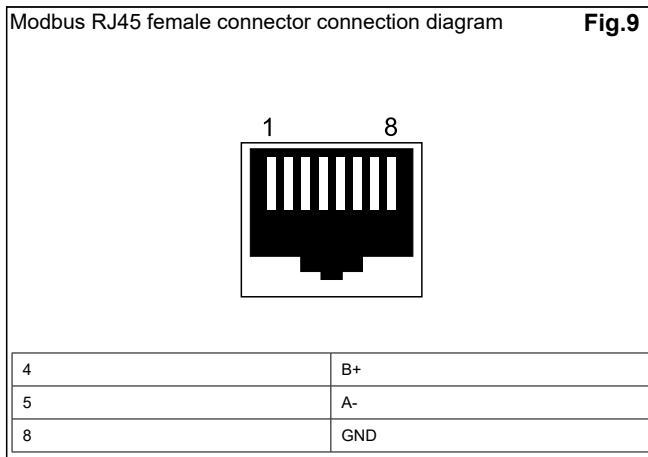
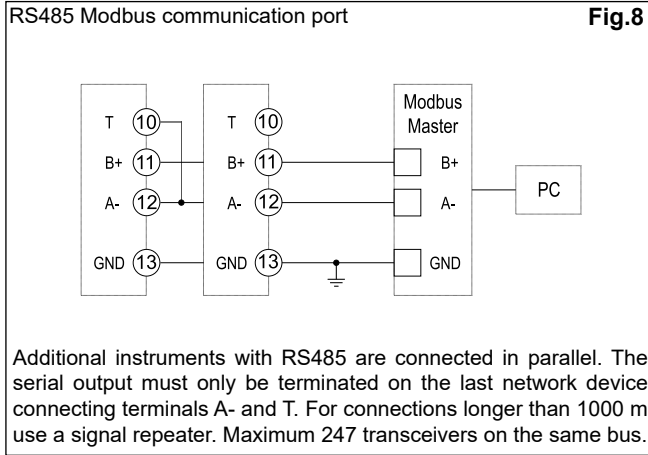
kvarh, accuracy (RDG) depending on the current



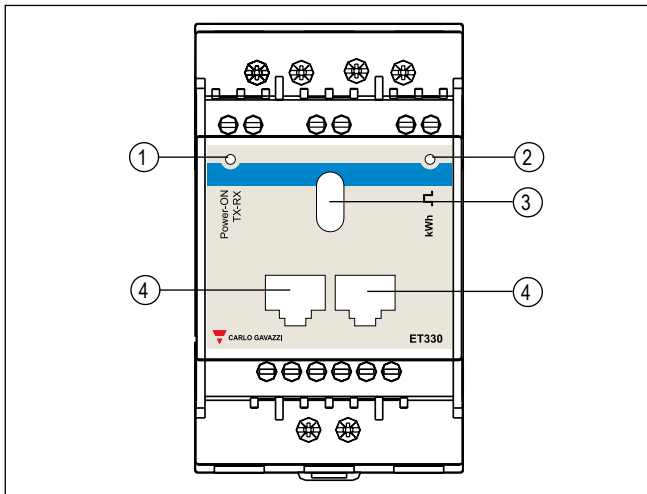
Wiring diagrams



Wiring diagrams (cont.)

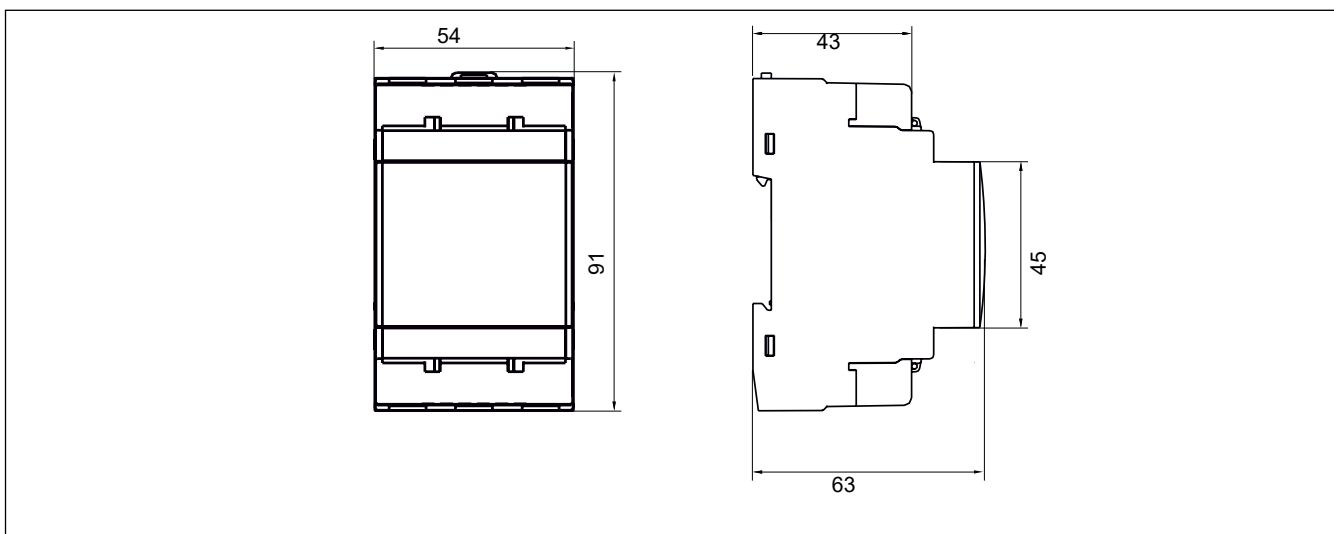


Front panel description



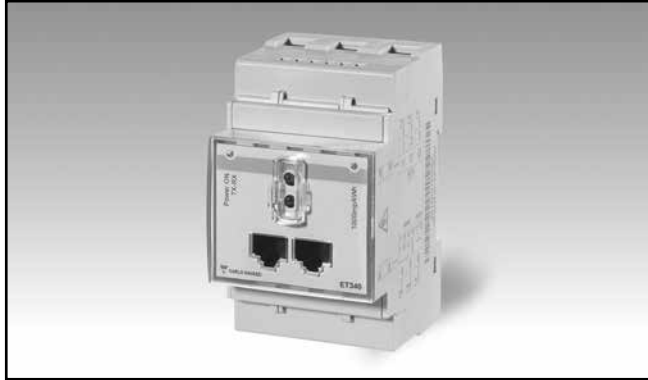
1. **LED**
Power-ON LED with communication indication (when blinking)
2. **LED**
LED proportional to kWh reading
3. **Optical port**
Optical port for data transmission or programming
4. **RJ45 Modbus RTU ports (RS485)**
Modbus ports for fast bus connection. The ports are in parallel. The screw terminals can be used as well (same Modbus port).

Dimensions



Energy Management Energy Transducer Type ET340

CARLO GAVAZZI



- Three phase energy transducer
- Class 1 (kWh) according to EN62053-21
- Accuracy $\pm 0.5\%$ RDG (current/voltage)
- Direct current measurement up to 65AAC
- Energy measurement: kWh and kvarh (imported/exported); kWh+ by 2 tariffs; kWh per phase
- System variables: kW, kvar, kVA, VLL, VLN, PF, Hz, kWdmd, kWdmd peak
- Phase variables: kW, kvar, kVA, VLL, VLN, A, PF
- Self power supply
- Dimensions: 3-DIN module
- Protection degree (front): IP20
- Optical port
- RS485 Modbus port (optional)
- Digital input (for tariff management)
- Run hour meter
- Easy connection or wrong current direction detection

Product description

Three-phase transducer. Particularly indicated for active energy metering and for cost allocation in applications up to 65 A (direct connection), with dual tariff management availability. It can measure imported and exported energy or be programmed to consider only the imported one. Housing for DIN-rail mounting, with IP20 front degree protection. The transducer is provided with RS485 Modbus port.

How to order **ET340-DIN AV2 3 X S1 X**



Type Selection

Range code	System	Power supply	Output
AV2: 208 to 400 VLL AC - 5(65)A (Direct connection)	3: 3-phase, 3- or 4-wire; 2-phase 3-wire	X: self power supply -20% +20% of the rated measuring input voltage, 45 to 65Hz	S1: RS485 Modbus port

Option

X: none

Input specifications

Rated Inputs		Max. and Min. data values	
Current type	3-phase loads, direct connection	Energies	Max. 99 999 999 Min. 0.01
Current range	5(65)A	Variables	Max. 9999 Min. 0.01
Nominal voltage	208 to 400 VLL AC	Run hour meter	0.01 h
Accuracy (@25°C ±5°C, R.H. ≤60%, 45 to 65 Hz)		Memory	
	Imin=0.25A; Ib: 5A, Imax: 65A; Un: 113 to 265VLN (196 to 460VLL) Imin=0.25A; Ib: 5A, Imax: 65A; from 208 to 400 VLL AC	Energy	10 ¹² cycles. Energy value is saved every time the less significant digit increases.
Current	From 0.04Ib to 0.2Ib: ±(0.5%RDG+1DGT) From 0.2Ib to Imax: ±(0.5%RDG)	Programming parameters	10 ¹² cycles. When a parameter is modified, only the relevant memory cell is overwritten
Phase-neutral voltage	In the range Un: ±(0.5% RDG)	LEDs	
Phase-phase voltage	In the range Un: ±(1% RDG)	Right LED	Flashing red light pulses according to EN50470-3, EN62052-11, 1000 pulse per kWh (min. period: 90ms)
Frequency	Range: 45 to 65Hz.	Left LED	Fix green light: power-on Blinking red light: power- on and communication in progress
Active power	From 0.05 In to Imax, within Un range, PF=1: ±(1% RDG) From 0.1 In to Imax, within Un range, PF=0.5L or 0.8C: ±(1% RDG)	Current overloads	
Power factor	±[0.001+1%(1.000 - "PF RDG")]	Continuous	65A, @ 50Hz
Reactive power	From 0.05 In to Imax, within Un range, sinphi=1: ±(2% RDG) From 0.1 In to Imax, within Un range, sinphi=0.5L or 0.8C: ±(2% RDG)	For 10ms	8450 A
		Voltage Overloads	
Energies		Continuous	1.2 Un
Active energy	Class 1 according to EN62053-21	For 500ms	2 Un
Reactive energy	Class 2 according to EN62053-23	Input impedance	
Start-up current:	20mA Self-consumption is not measured.	230VL-N	1.2Mohm
Start-up voltage	90VLN	120VL-N	1.2Mohm
Resolution		5(65) A	< 1.25VA
Current	0.001 A		
Voltage	0.1 V		
Power	0.1 W or var		
Frequency	0.1Hz		
PF	0.001		
Energies (positive)	0.1 kWh or kvarh		
Energies (negative)	0.1 kWh or kvarh		
Run hour meter	0.01 h		
Energy additional errors			
Influence quantities	According to EN62053-21 ≤200ppm/°C		
Temperature drift			
Sampling rate	4096 samples/s @ 50Hz 4096 samples/s @ 60Hz		



Digital input specifications

Digital inputs Function Number of inputs Contact measurement voltage Input impedance Contact resistance	Free of voltage contact Tariff management (switch between t1-t2) 1 5 V 1kohm ≤1kohm, close contact ≥100kohm, open contact	Overload	In case a voltage is erroneously applied to the digital input, the input is not damaged up to 30 VAC/DC.
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Output specifications

RS485 serial port Function Protocol Baud rate Data format Address Driver input capability Data refresh time Read command RJ45 pin-out Other ports	RS485 by screw connection or RS485 by standard female RJ45 connectors (not shielded). For communication of measured data, programming parameters ModBus RTU (slave function) 9.6, 19.2, 38.4, 57.6, 115.2 kbaud, even or no parity, 1 to 247 (default: 01) 1/8 unit load. Maximum 247 devices on the same bus. 1sec 50 words available in 1 read command According to Modbus standard: A- (pin5), B+ (pin4), GND (pin8) All the Modbus ports (screw terminals, two RJ45) are in parallel. Only one port at a time can be used.	Optical port Description Function Protocol Baud rate Address Data refresh time Read command Optical port LEDs LED axial distance LED function	Frontal bi-directional infrared optical coupling with CG optical reader device "Opto-prog" For remote communication of measured data and setting of programming parameters ModBus RTU (slave function) 9.6, 19.2 kbaud, even or no parity 1 1 sec 50 words available in 1 read command 6.5 mm - Upper LED is a receiver (from the master to the transducer) - Lower LED is a transmitter (from the transducer to the master).
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General specifications

Operating temperature	-20 to +65 °C, indoor, (R.H. from 0 to 90% non-condensing @ 40°C)	Standard compliance	
Storage temperature	-30°C to +80°C (R.H. < 90% noncondensing @ 40°C)	Safety	EN62052-11
Overvoltage category	Cat. III	Metrology	EN62053-21
Insulation (for 1 minute)	4000 VAC RMS between measuring inputs and digital/serial output (see table) 4000 VAC RMS	Approvals	CE
Dielectric strength	4000 VAC RMS for 1 minute	Connections	
EMC	According to EN62052-11	Cable cross-section area	Measuring inputs: max. 16 mm ² , min. 2.5 mm ² with/without metallic cable ferrule; Max. screw tightening torque: 2.8 Nm 1.5 mm ² , Min./Max. screws tightening torque: 0.4 Nm
Electrostatic discharges	15kV air discharge;	Other terminals	
Immunity to irradiated electromagnetic fields	Test with current: 10V/m from 80 to 2000MHz;	Housing	
Electromagnetic fields	Test without any current: 30V/m from 80 to 2000MHz;	Dimensions (WxHxD)	54 x 90 x 63 mm
Burst	On current and voltage measuring inputs circuit: 4kV	Material	Noryl, self-extinguishing: UL 94 V-0
Immunity to conducted disturbances	10V/m from 150KHz to 80MHz	Sealing covers	Included
Surge	On current and voltage measuring inputs circuit: 4kV;	Mounting	DIN-rail
Radio frequency	According to CISPR 22	Protection degree	
		Front	IP20
		Screw terminals	IP20
		Weight	Approx. 240 g (packing included)

Power supply specifications

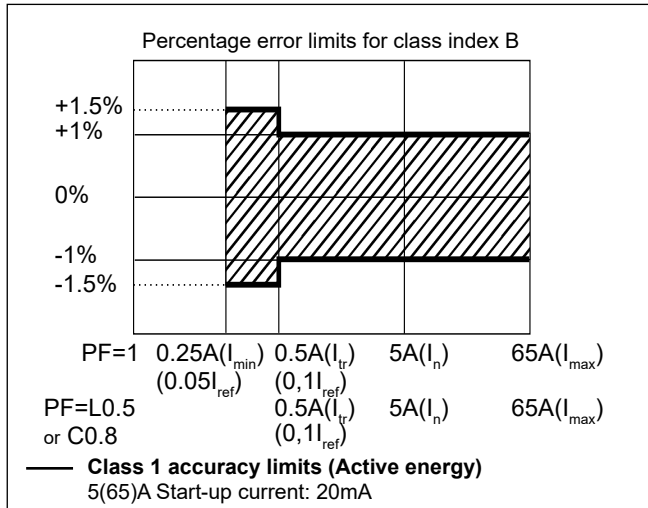
Self power supply	208 to 400VAC VLL, -20% +20% 50/60Hz	Power consumption	≤ 1W, ≤ 10VA
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Insulation (for 1 minute) between inputs and outputs

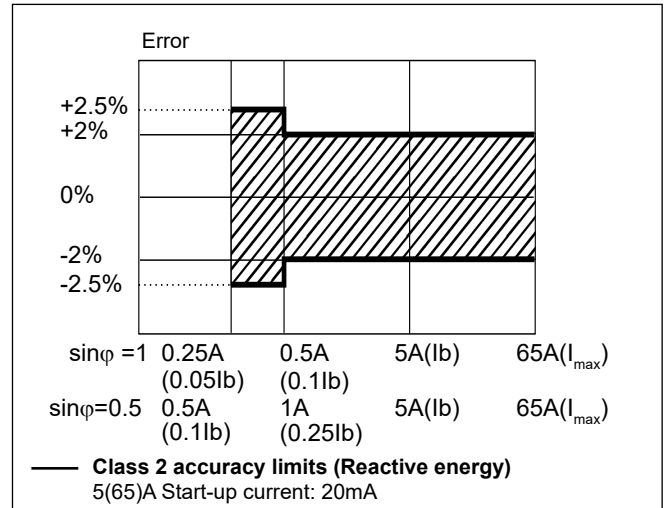
	Measuring input	Serial output	Digital input
Measuring input	-	4 kV	4 kV
Serial output	4 kV	-	0 kV
Digital input	4 kV	0 kV	-

Accuracy (according to EN62053-21 and EN62053-23)

kWh, accuracy (RDG) depending on the current



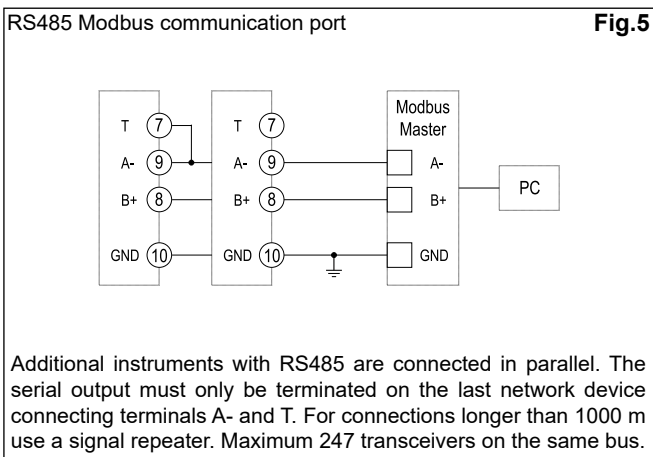
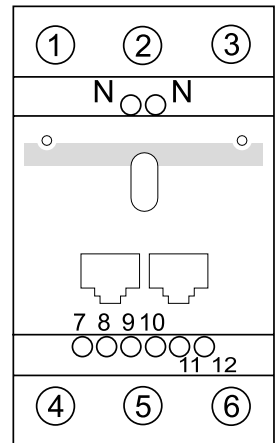
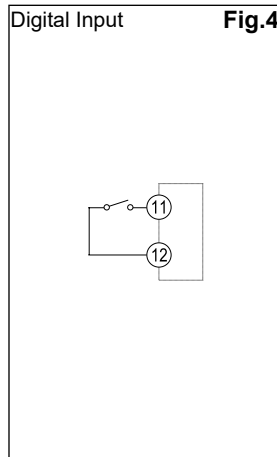
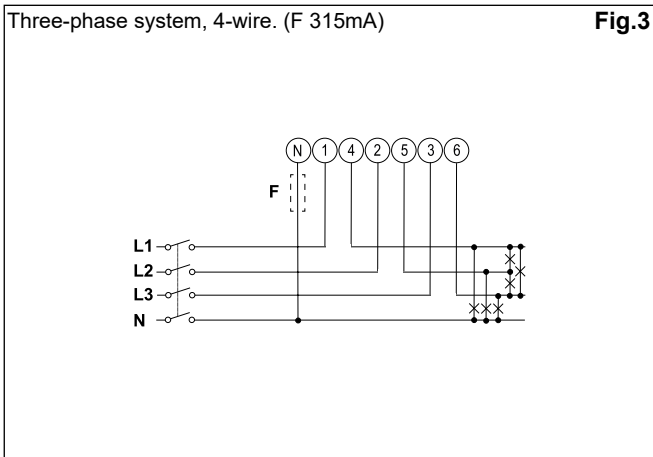
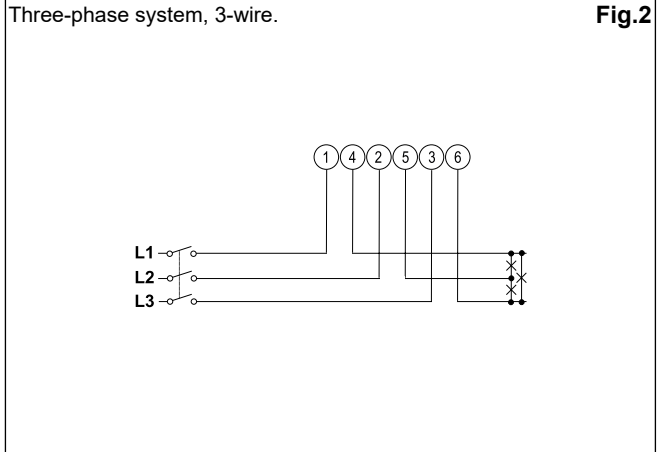
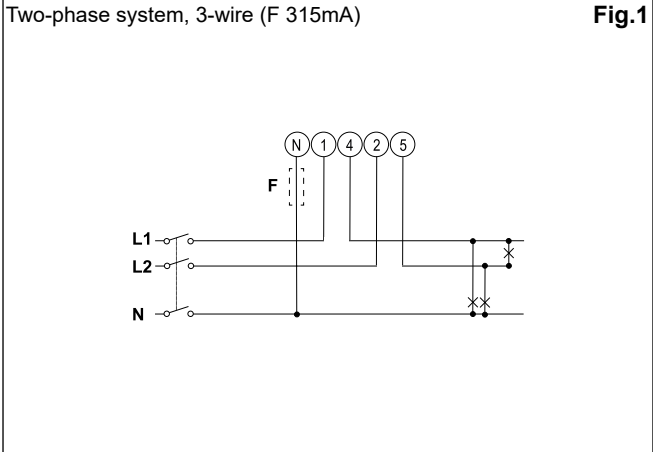
kvarh, accuracy (RDG) depending on the current



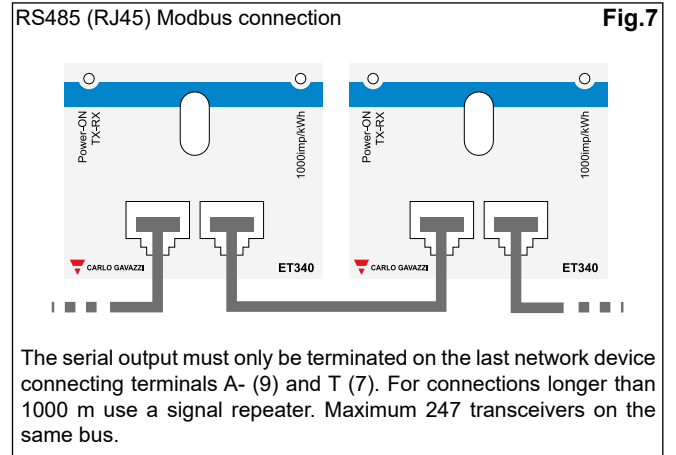
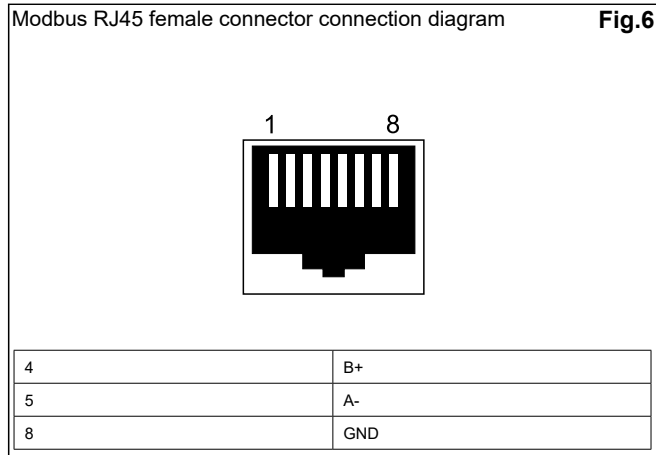
Available variables

1	kWh+ (imported)
2	kWh- (exported)
3	kWh (t1 and t2)
4	kW
5	kW dmd
6	kW dmd peak
7	kvar
8	kVA
9	V
10	A
11	PF
12	Hz
13	Run hour meter

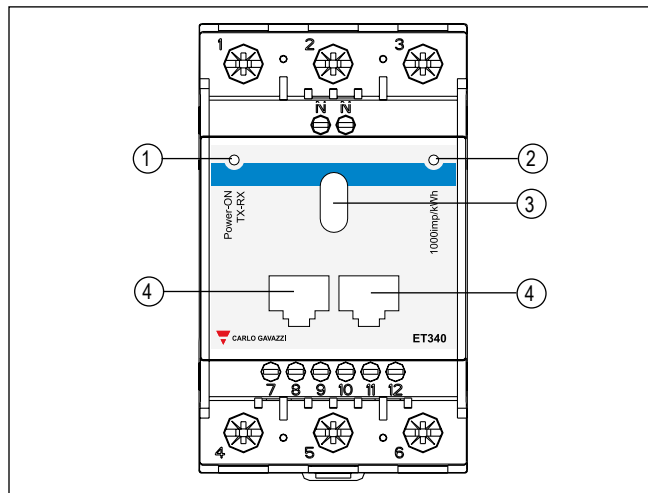
Wiring diagrams



Wiring diagrams (cont.)

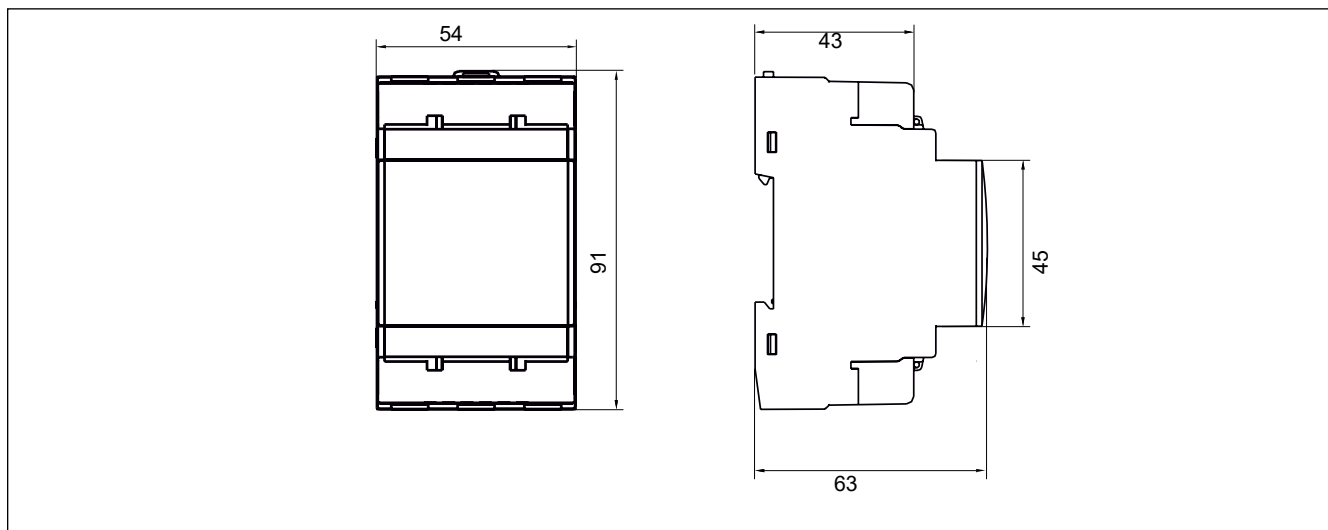


Front panel description



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Power-ON LED with communication indication (when blinking)
2. **LED**
LED proportional to kWh reading
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Optical port for data transmission or programming
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Modbus ports for fast bus connection. The ports are in parallel. The screw terminals can be used as well (same Modbus port).

Dimensions



По вопросам продаж и поддержки обращайтесь:

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Екатеринбург (343)384-55-89	Москва (495)268-04-70	Санкт-Петербург (812)309-46-40	Хабаровск (4212)92-98-04
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