

MULTIFUNCTION METERS

NEMO

MULTIFUNCTION
METER FOR
ELECTRICAL
PARAMETERS
MONITORING



IME

WEBSITE

all information
all documentation

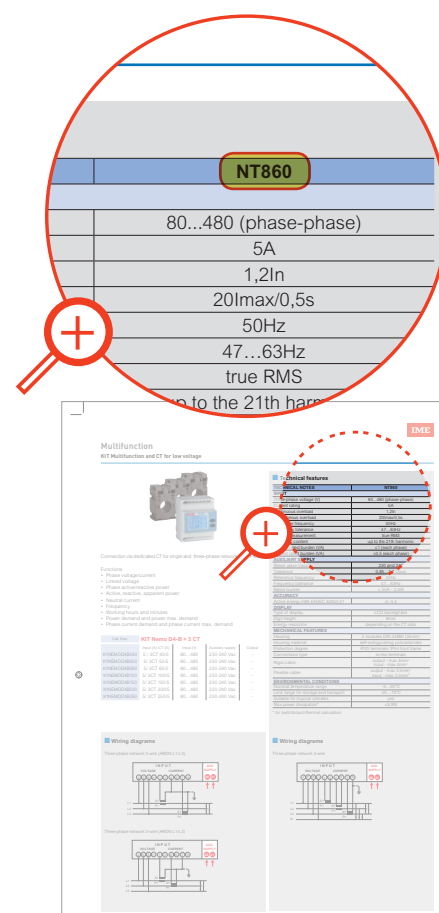


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MULTIFUNCTION METERS

NEMO



► NEW ◀

New first level range of multifunction NEMO available in modular and flush mounting version, and NEW NEMO 96 HD+ with integrated harmonic measure



NEMO D4-e



NEMO 96HDe



NEMO 96 HD+

► **NEMO** is a range of multifunction instruments for monitoring of the main electrical parameters. The multifunction meters are available on modular and flush mounting version. The NEMO 96 can be equipped by additional modules with many communication functions.



Measures

Simultaneously all the parameters of the electrical network, such as voltages, currents, frequency, power factor, active, reactive and apparent power.

Analysis

The quality of the supply by computing the single harmonics of current and voltage.

Warning

Abnormal events by alarm relays activation, in field programmed.

Comply

With the technical characteristics of the installation thanks to its in field programming mode of the electrical network (single phase or three phase 3/4 wires) and of CT's and VT's ratios.

Transmit

To a remote controller the data and the configuration of the device, through RS232 or RS485 or by pulse outputs. It is compatible with ModBus RTU, Profibus, M-Bus, LonWorks, BACnet and Ethernet networks.

Counting

Active and reactive energy. Run hours.

Computing

Average and max current. Average and max power.

Display

All the electrical parameters on a backlit LED screen, easily accessed by keyboard.

Multifunction meters

Selection table

Model			NEMO D4-b	NEMO D4-e	NEMO D4-Le	NEMO D4-L+	NEMO D4-Dc	
Network			LV	LV	LV	LV/MV	DC	
Installation			DIN rail					
Technical notes			NT588	NT901	NT864	NT695	NT753	
INPUT	Connection	1Ph	•	•	•	•		
		3Ph balanced load		•	•	•		
		3Ph unbalanced load	•	•	•	•		
	Phase sequence correction, diagnostic			•	•			
	Rated value	Voltage	80...480V	80...500V	80...500V	80...480V	10...300V 50... 1500V	
		Current	1 - 5A	5A	1 + 5A	1 + 5A	10A shunt 60-100-150mV	
	Input current	Dedicated CT	•	•	•			
		Insulated				•		
	Programmable Ratio	Insulated		1...10	1...10	1...400		
		CT						
		Ranges	41...(5...8000A)					
		Isn		1...9'999	1...9'999	1...9'999		
DISPLAY	Active energy	Accuracy EN/IEC 61557-12		cl.1	cl.0,5	cl.1		
		Energy dc accuracy					cl.1	
		Positive, total and partial		•	•	•	•	
		Negative, total		•	•		•	
	Reactive energy	Accuracy EN/IEC 61557-12		cl.1	cl.1	cl.2		
		Positive, total		•	•	•		
		Positive, partial		•	•			
		Negative, totale		•	•			
	Voltage	Phase and linked	•	•	•	•		
		Phase and neutral	•		•	•		
	Current	Neutral (measured)		•				
		Phase demand and max. Demand	•	•	•	•		
		Positive and negative Ah					•	
	Power factor	Threee-phase	•	•	•	•		
		Phase		•	•			
	Power	Active,reactive, apparent	•	•	•	•		
		Demand and max. Demand	•	•	•	•	•	
		Phase active and reactive	•	•	•	•		
	Harmonic distortion	Thd current / voltage		•	•	•		
		Analysis			•			
	Frequency		•	•	•	•		
	D.C.1 Measure						•	
	Run hour meter		•	•	•	•	•	
	Wrong phase sequence			•	•	•		
	Temperature							
OUTPUT	Pulse			•	•	•	•	
	Alarm relays						•	
	Alarm relays + digital inputs				•			
	Analogue							
COMMUNICATION	RS232							
	RS485 Modbus RTU			•	•	•	•	
	RS485 + Memory							
	Profibus							
	Lonworks							
	M-bus							
	Bacnet				•	•		
	Ethernet			• ¹	• ¹	• ¹	• ¹	
	868Mhz radio trasmission							

¹ RS485 version + external interface (IF2E or IF4E)

					
NEMO 72-b	NEMO 72-Le	NEMO 96HDe	NEMO 96HDL e	NEMO 96HD	NEMO 96HD+
LV	LV	LV	LV	LV	LV/MV/HV
Flush mounting					
NT651	NT879	NT900	NT854	NT680	NT904
•	•	•	•	•	•
	•		•	•	•
•	•	•	•	•	•
	•	•	•	•	•
340...450V	100...400V	500V	80...500V	80...500V	80...690V
1 + 5A	1 + 5A	5A	1 + 5A	1 + 5A	1 + 5A
•	•	•	•	•	
					•
	1...10		1...10	1...10	1...1500
41...(5...8000A)	1...9'999	1...9'999	1...9'999	1...9999	1...9999
	99'990		99'990	99'990	2.000.000 (5A) 10.000.000 (1A)
	cl.0,5	cl.1	cl.0,5	cl.0,5	I.0,5
	•	•	•	•	•
	•	•	•	•	•
	cl.1	cl.1	cl.1	cl.1	cl.1
	•	•	•	•	•
	•	•	•	•	•
	•	•	•	•	•
•	•	•	•	•	•
•	•	•	•	•	•
					IF96006
•	•	•	•	•	•
•	•	•	•	•	•
	•	•	•	•	•
•	•	•	•	•	•
•	•	•	•	•	•
•	•	•	•	•	•
	•	•	•	•	•
•	•	•	•	•	•
	•	•	•	•	•
	• (RS485)	•	•	•	•
					IF96016
only MF7GM2.../MF7GT2...	•	•	•	•	IF96003
	•				IF96005
					IF96010+IF96011
					IF96004
			IF96002	IF96002	IF96002
	•	•	•	•	IF96001
			IF96012	IF96012	• ²
			IF96007A	IF96007A	IF96007A
			IF96009	IF96009	IF96009
			IF96013	IF96013	IF96013
	•		IF96014	IF96014	IF96014
	• ¹	• ¹	IF96015	IF96015	IF96015
					IF96018

² memory only on board.

Multifunction meters

Multifunction for low voltage



Connection via CT for single and three-phase network, 3 or 4-wires.

Functions

- Phase and linked voltage
- Neutral and phase current
- Current demand and current max. demand
- Power demand and power max. demand
- Power factor
- Frequency
- Run hour meter, count start with voltage present

Cat. Nos.	Nemo D4-B			
	Input (A)	Input* (V)	Auxiliary supply	Output
MF6GT00073	5	80...480	115 Vac	-
MF6GT00076	5	80...480	230 Vac	-
MF6GT00079	5	80...480	400 Vac	-
MF6GT00063	1	80...480	115 Vac	-
MF6GT00066	1	80...480	230 Vac	-
MF6GT00069	1	80...480	400 Vac	-

* Three-phase input 80...480V, Single-phase input 50...350V

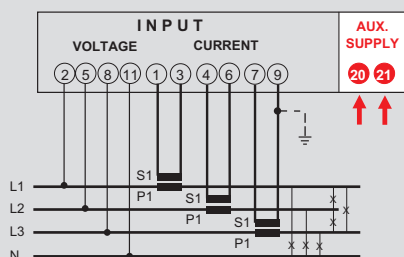
Technical features

TECHNICAL NOTES	NT588
INPUT	
Three-phase voltage (V)	80...480 (phase-phase)
Single-phase voltage (V)	50...350
Current rating	1A - 5A
External CT ratio	5/10/15/20/25/30/40/50/60/70/75/80/100/120/125/150/160/200/250/300/400/500/600/700/750/800/1000/1200/1250/1500/1600/2000/2500/3000/3200/4000/5000/6000/7000/7500/8000A
Continuous overload	1,2In
Instantaneous overload	20Imax/0,5s
Reference frequency	50Hz
Frequency tolerance	47...63Hz
Type of measurement	true RMS
Harmonic content	up to the 16th harmonic
Voltage rated burden (VA)	≤1 (each phase)
Current rated burden (VA)	≤0,5 (each phase)
AUXILIARY SUPPLY	
Rated value Uaux	115 - 230 - 400V
Tolerance	0,85...1,1 Uaux
Reference frequency	50Hz
Frequency tolerance	47...63Hz
Rated burden	≤ 5VA - 2,5W
DISPLAY	
Type of display	LCD backlighted
Digit height	6mm
MECHANICAL FEATURES	
Housing	4 modules DIN 43880 (35mm)
Housing material	self-extinguishing polycarbonate
Protection degree	IP20 terminals/ IP54 front frame
Connections type	screw terminals
Rigid cable	output - max 4mm ² input - max 4mm ²
Flexible cable	output - max 2,5mm ² input - max 2,5mm ²
ENVIRONMENTAL CONDITIONS	
Nominal temperature range	-5...55°C
Limit range for storage and transport	-25...70°C
Suitable for tropical climates	yes
Max. power dissipation*	≤6,8W

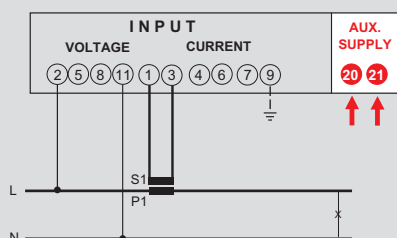
* for switchboard thermal calculation

Wiring diagrams

Three-phase network 4-wire

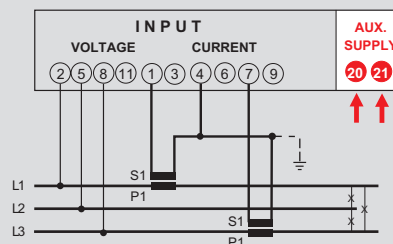


Single-phase network

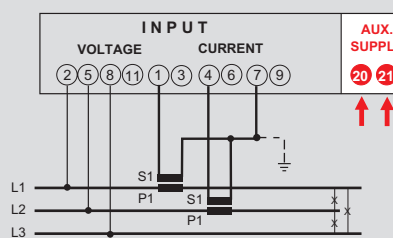


Wiring diagrams

Three-phase network 3-wire (ARON L1-L3)



Three-phase network 3-wire (ARON L1-L2)



Multifunction meters

KIT Multifunction and CT for low voltage



Connection via dedicated CT for single and three-phase network, 3 or 4-wires.

Functions

- Phase and linked voltage
- Neutral and phase current
- Current demand and current max. demand
- Power demand and power max. demand
- Power factor
- Frequency
- Run hour meter, count start with voltage present

Cat. Nos. KIT Nemo D4-B + 3 CT (TAIBB model)

Cat. Nos.	Input (A) /CT (A)	Input (V)	Auxiliary supply	Output
K1NEMOD4B040	5 / 3CT 40/5	80...480	230 Vac	-
K1NEMOD4B050	5 / 3CT 50/5	80...480	230 Vac	-
K1NEMOD4B060	5 / 3CT 60/5	80...480	230 Vac	-
K1NEMOD4B100	5 / 3CT 100/5	80...480	230 Vac	-
K1NEMOD4B150	5 / 3CT 150/5	80...480	230 Vac	-
K1NEMOD4B200	5 / 3CT 200/5	80...480	230 Vac	-
K1NEMOD4B250	5 / 3CT 250/5	80...480	230 Vac	-

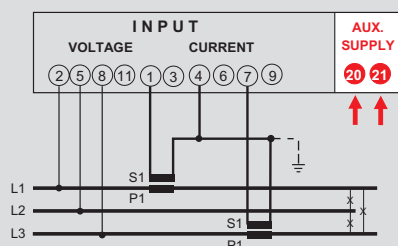
Technical features

TECHNICAL NOTES	NT860
INPUT	
Three-phase voltage (V)	80...480 (phase-phase)
Current rating	5A
Continuous overload	1,2In
Istantaneous overload	20Imax/0,5s
Reference frequency	50Hz
Frequency tolerance	47...63Hz
Type of measurement	true RMS
Harmonic content	up to the 16th harmonic
Voltage rated burden (VA)	≤1 (each phase)
Current rated burden (VA)	≤0,5 (each phase)
AUXILIARY SUPPLY	
Rated value Uaux	230
Tolerance	0,85...1,1 Uaux
Reference frequency	50Hz
Frequency tolerance	47...63Hz
Rated burden	≤ 5VA – 2,5W
ACCURACY	
Active energy kWh EN/IEC 62053-21	cl. 0,5
DISPLAY	
Type of display	LCD backlighted
Digit height	6mm
MECHANICAL FEATURES	
Housing	4 modules DIN 43880 (35mm)
Housing material	self-extinguishing polycarbonate
Protection degree	IP20 terminals/ IP54 front frame
Connections type	screw terminals
Rigid cable	output - max 4mm ² input - max 4mm ²
Flexible cable	output - max 2,5mm ² input - max 2,5mm ²
ENVIRONMENTAL CONDITIONS	
Nominal temperature range	-5...55°C
Limit range for storage and transport	-25...70°C
Suitable for tropical climates	yes
Max.power dissipation*	≤6,8W

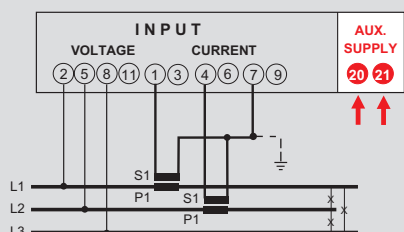
* for switchboard thermal calculation

Wiring diagrams

Three-phase network 3-wire (ARON L1-L3)

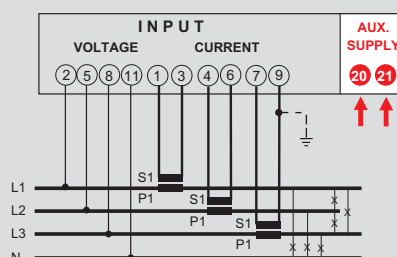


Three-phase network 3-wire (ARON L1-L2)



Wiring diagrams

Three-phase network 4-wire



Multifunction meters

Multifunction for low voltage



Connection via CT for single and three-phase network, 3 or 4-wires.
Phase sequence correction, diagnostic
It makes available active or reactive energy counting of the pulse output to integration of consumption supervision systems.
For supervision systems, through the model with output RS485 communication ModbusRTU, you can transmitted on the network main electrical parameters in addition to the energy consumption.

Functions

- Phase and linked voltage
- Min. and max. phase voltage
- THDV
- Neutral and phase current
- Current demand and current max. demand
- Average current
- THDI
- Active, reactive phase power
- Power demand and power max. demand
- Positive and negative active and reactive energy
- Power factor
- Frequency
- Run hour meter, count start with voltage or power present

Cat. Nos.	Nemo D4-e		
MFD4E06	Input (A) 5	Input* (V) 80...500	Auxiliary supply 230Vac Output Pulse + RS485 ModBus RTU

* Three-phase input 80...500V, Single -phase input 50...290V

Technical features

TECHNICAL NOTES	NT901
INPUT	
Three-phase voltage (V)	80...500 (phase-phase)
Single-phase voltage (V)	50...290V
Current rating	5A
External CT ratio	max 50kA/5A
Continuous overload	1,2I _n
Istantaneous overload	20I _{max} /0,5s
Reference frequency	50Hz – 60Hz (automatic selection)
Frequency tolerance	45...65Hz (fn 50Hz) – 360...440Hz (fn 400Hz)
Type of measurement	true RMS
Harmonic content	up to the 25th harmonics
Voltage rated burden (VA)	≤ 0,2VA (phase-neutral)
Current rated burden (VA)	≤ 1VA (for phase)

AUXILIARY SUPPLY

Rated value Uaux	230Vac
Reference frequency	50Hz
Frequency tolerance	45...65Hz
Rated burden	≤ 2.5VA (230Vac backlight 30%)

ACCURACY

CONFORMITY ACCURACY WITH EN/IEC 61557-12	- Voltage: cl.0,5 - Current: cl. 1 - Active energy: cl.1 - Reactive energy cl.1 - Active power cl.1 - Reactive power cl.1 - Apparent power cl.1 - Frequency $\pm 0,1$ Hz - THD cl.2
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DISPLAY

Type of display	LCD backlighted
Digit height	5/7mm
Energy resolution	depending on the CT ratio **

MECHANICAL FEATURES

Housing	4 modules DIN 43880 (35mm)
Housing material	self-extinguishing polycarbonate
Protection degree	IP20 terminals/ IP54 front frame
Connections type	screw terminals
Rigid cable	output - max 4mm ² input - max 6mm ²
Flexible cable	output - max 2,5mm ² input - max 4mm ²

ENVIRONMENTAL CONDITIONS

Nominal temperature range	-5...55°C
Limit range for storage and transport	-25...70°C
Suitable for tropical climates	yes
Max. power dissipation*	≤5W

* for switchboard thermal calculation

** kCT	MAXIMUN DISPLAY
1...9	999999,99kWh/kvarh
10...99	999999,9kWh/kvarh
100...999	99999999kWh/kvarh
1000...9999	999999,99MWh/Mvarh

Output

ENERGY PULSES S0 EN/IEC 62053-31

Type	Optorelay with potential-free
Contact range	27Vdc – 50mA
Assignable energy	Active or reactive energy
Pulse weight	selectable 10Wh/Varh...10MWh/MVarh
Pulse duration	selectable 50...300ms

RS485 COMMUNICATION

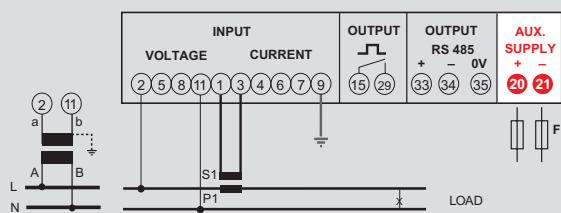
Protocol	MODBUS RTU
Standard	RS485-3-wire
Baud rate	selectable 4800...19200 bit/s

Multifunction meters

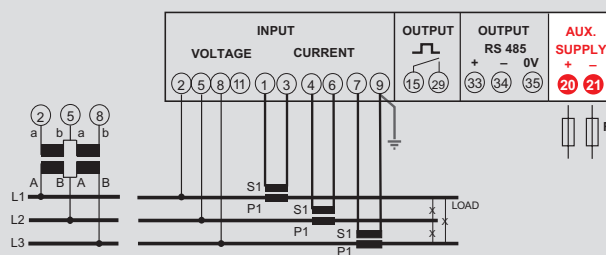
Multifunction for low voltage

Wiring diagrams

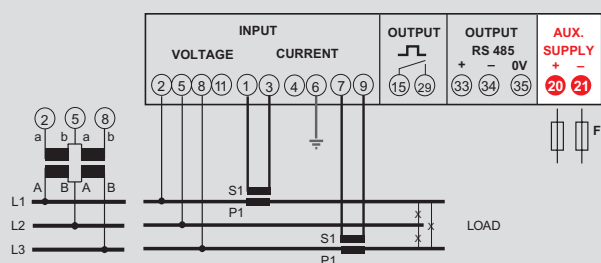
Single phase network



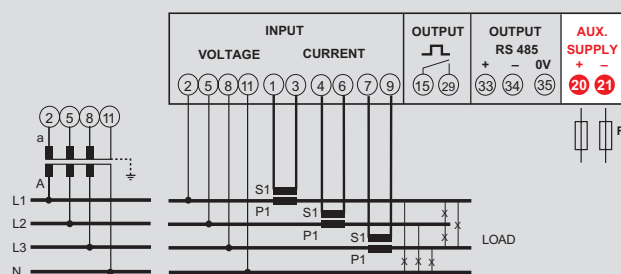
3-phase network, 3 wire



3-phase network, 3 wire (ARON L1-L3)



3-phase network, 4 wire



Multifunction meters

Multifunction for low voltage



Connection via CT for single and three-phase network, 3 or 4-wires. Phase sequence correction, diagnostic. It makes available active or reactive energy counting of the pulse output to integration of consumption supervision systems. For supervision systems, through the model with output RS485 communication ModbusRTU, you can transmit on the network main electrical parameters in addition to the energy consumption.

Functions

- Phase and linked voltage
- Min. and max. phase voltage
- THDV
- Voltage Harmonic analysis
- Voltage crest factor
- Phase angle between voltage
- Neutral and phase current
- Current demand and current max. demand
- Average current
- THDI
- Current Harmonic analysis
- Current crest factor
- Phase angle between current
- Active, reactive phase power
- Power demand and power max. demand
- Positive and negative active and reactive energy
- Power factor
- Phase angle between current and voltage
- Frequency
- Run hour meter, count start with voltage or power present

Cat. Nos.	Nemo D4-Le			
	Input (A)	Input* (V)	Auxiliary supply	Output
MFD4411	1 + 5	80...500	80...265Vac 100...300Vdc	Pulse or alarm
MFD4421	1 + 5	80...500	80...265Vac 100...300Vdc	Pulse or alarm + RS485 ModBus RTU/TCP
MFD44B1	1 + 5	80...500	80...265Vac 100...300Vdc	Pulse or alarm + RS485 BACnet
MFD4412	1 + 5	80...500	20...60 Vdc	Pulse or alarm
MFD4422	1 + 5	80...500	20...60 Vdc	Pulse or alarm + RS485 ModBus RTU/TCP
MFD44B2	1 + 5	80...500	20...60 Vdc	Pulse or alarm+ RS485 BACnet

* Three-phase input 80...500V, Single -phase input 50...290V

Technical features

TECHNICAL NOTES	NT864
INPUT	
Three-phase voltage (V)	80...500 (phase-phase)
Single-phase voltage (V)	50...290V
Current rating	1A - 5A
External CT ratio	max 50kA/5A - max 10kA/1A
External VT ratio	primary voltage max 1200V
Continuous overload	1,2In
Istantaneous overload	20Imax/0,5s
Reference frequency	50Hz - 400Hz (automatic selection)
Frequency tolerance	45...65Hz (fn 50Hz) - 360...440Hz (fn 400Hz)
Type of measurement	true RMS
Harmonic content	up to the 50th harmonics (45...65Hz)
Voltage rated burden (VA)	≤ 0,2VA (phase-neutral)
Current rated burden (VA)	≤ 1VA (for phase)
AUXILIARY SUPPLY	
Rated value Uaux	80...265Vac - 48Vac
Reference frequency	50 or 400Hz (automatic selection)
Frequency tolerance	45...65Hz (fn 50Hz) or 360...440Hz (fn 400Hz)
Rated burden	≤ 2,5VA (230Vac backlight 30%)
Rated value Uaux	100...300Vdc - 20...60Vdc
Rated burden	≤ 2,5W (24Vdc backlight 30%)
ACCURACY	
CONFORMITY ACCURACY WITH EN/IEC 61557-12	- Voltage: cl.0,5 - Current: cl. 0,5 - Active energy: cl.0,5 - Reactive energy cl.0,5 - Active power cl.05 - Reactive power cl.1 - Apparent power cl.1 - Frequency ± 0,1 Hz - THD (up to 50th harmonic) Harmonics single cl.1
DISPLAY	
Type of display	LCD backlighted
Digit height	5/7mm
Energy resolution	depending on the CT/VT ratio**
MECHANICAL FEATURES	
Housing	4 modules DIN 43880 (35mm)
Housing material	self-extinguishing polycarbonate
Protection degree	IP20 terminals/ IP54 front frame
Connections type	screw terminals
Rigid cable	output - max 4mm ² input - max 6mm ²
Flexible cable	output - max 2,5mm ² input - max 4mm ²
ENVIRONMENTAL CONDITIONS	
Nominal temperature range	-5...55°C
Limit range for storage and transport	-25...70°C
Suitable for tropical climates	yes
Max.power dissipation*	≤5W

* for switchboard thermal calculation

** kCT*kVT MAXIMUM DISPLAY

1...9	999999,99kWh/kvarh
10...99	9999999,9kWh/kvarh
100...999	99999999kWh/kvarh
1000...9999	999999,99MWh/Mvarh
10000...99999	9999999,9MWh/Mvarh

Multifunction meters

Multifunction for low voltage

Output

ENERGY PULSES S0 EN/IEC 62053-31

Type	Optorelay with potential-free
Contact range	27 Vcc/ca-50mA
Assignable energy	Active or reactive energy
Pulse weight	selectable 10Wh/Varh...10Wh/Varh
Pulse duration	selectable from 50 to 500ms

ALARM

Type	Optorelay with potential-free
Contact range	27 Vcc/ca-50mA
Type alarm	min. or max

RS485 COMMUNICATION

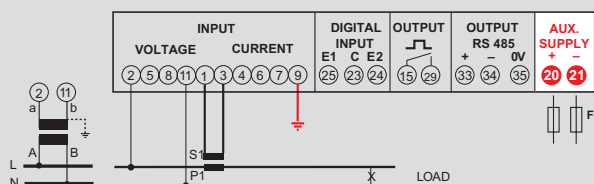
Protocol	MODBUS RTU/TCP
Standard	RS485-3-wire
Baud rate	selectable 4800...38400 bit/s

BACNET RS485 COMMUNICATION

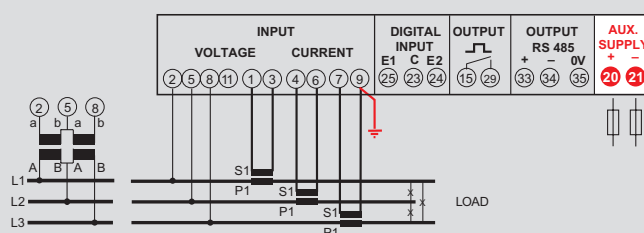
Protocol	BACNET MS-TP
Standard	RS485-3-wire
Baud rate	selectable 4800...76800 bit/s

Wiring diagrams

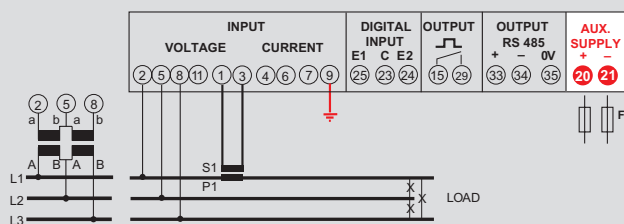
Single phase network



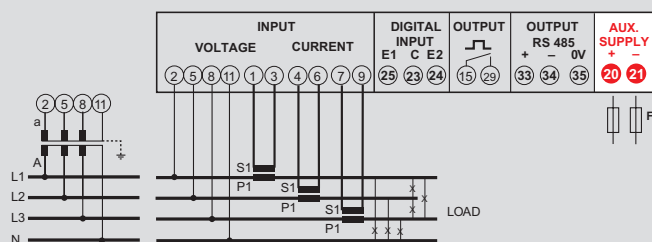
3-phase network, 3 wire



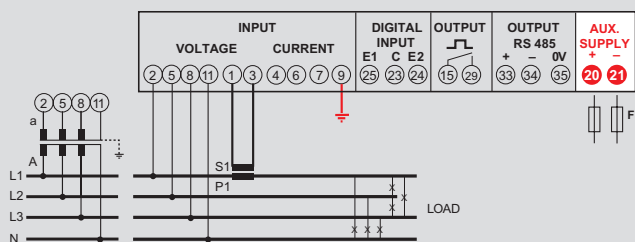
3-phase network, 3 wire, 1 System



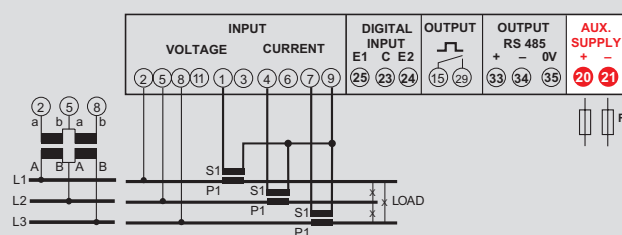
3-phase network, 4 wire



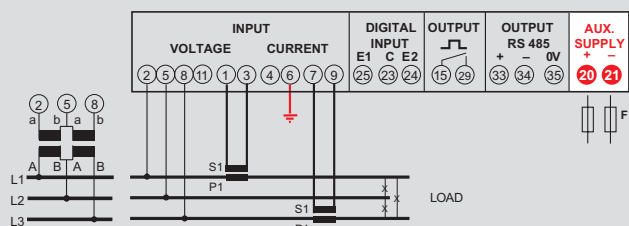
3-phase network, 4 wire, 1 System



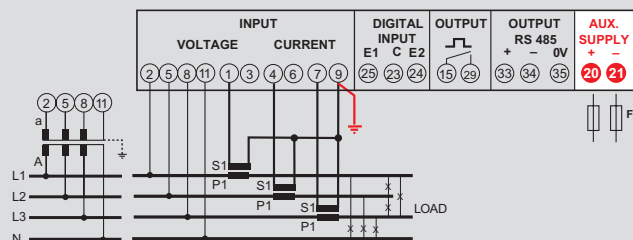
3-phase network, 3 wire



3-phase network, 3 wire (ARON L1-L3)



3-phase network, 4 wire



Multifunction meters

KIT Multifunction and rogowski coils for low voltage



Connection via dedicated rogowski coils for single and three-phase network, 3 or 4-wires.

Phase sequence correction, diagnostic

It makes available active or reactive energy counting of the pulse output to integration of consumption supervision systems.

For supervision systems, through the model with output RS485 communication ModbusRTU, you can transmitted on the network main electrical parameters in addition to the energy consumption.

Functions

- Neutral and phase current
- Phase and linked voltage
- Min. and max. phase voltage
- THDV
- Voltage Harmonic analysis
- Voltage crest factor
- Phase angle between voltage
- Neutral and phase current
- Current demand and current max. demand
- Average current
- THDI
- Current Harmonic analysis
- Current crest factor
- Phase angle between current
- Active, reactive phase power
- Power demand and power max. demand
- Positive and negative active and reactive energy
- Power factor
- Phase angle between current and voltage
- Frequency
- Run hour meter, count start with voltage or power present

Cat. Nos.	KIT Nemo D4-Le + 3 Rogowski coils			
	Input (A) /RC**	Input* (V)	Auxiliary supply	Output
KRNEMOD4LE080	5 / 3RC 80mm ²	80...500	80...265Vac 100...300Vdc	Pulse or alarm + RS485 ModBus RTU/TCP
KRNEMOD4LE142	5/ 3RC 142mm ²	80...500	80...265Vac 100...300Vdc	Pulse or alarm + RS485 ModBus RTU/TCP
KRNEMOD4LE190	5/ 3RC 190mm ²	80...500	80...265Vac 100...300Vdc	Pulse or alarm + RS485 ModBus RTU/TCP

* Three-phase input 80...500V, Single -phase input 50...290V

** 3 current ranges that can be selected on each KIT: 20...1000A, 60...3000A, 100...5000A

Technical features

TECHNICAL NOTES	NT889
INPUT	
Three-phase voltage (V)	80...500 (phase-phase)
Single-phase voltage (V)	50...290V
Current rating	1A - 5A
Reference frequency	50Hz - 400Hz (automatic selection)
Frequency tolerance	45...65Hz (fn 50Hz) - 360...440Hz (fn 400Hz)
Type of measurement	true RMS
Harmonic content	up to the 40th harmonics (45...65Hz)
Voltage rated burden (VA)	≤ 0,2VA (phase-neutral)
AUXILIARY SUPPLY	
Rated value Uaux	80...265Vac - 48Vac
Reference frequency	50 or 400Hz (automatic selection)
Frequency tolerance	45...65Hz (fn 50Hz) or 360...440Hz (fn 400Hz)
Rated burden	≤ 2,5VA (230Vac backlight 30%)
Rated value Uaux	100...300Vdc - 20...60Vdc
Rated burden	≤ 2,5W (24Vdc backlight 30%)
ACCURACY	
CONFORMITY ACCURACY WITH EN/IEC 61557-12	- Voltage: cl.0,5 - Current: cl. 1 - Active energy: cl.1 - Reactive energy cl.1 - Active power cl.1 - Reactive power cl.1 - Apparent power cl.1 - Frequency ± 0,1 Hz - THD (up to 50th harmonic) Harmonics single cl.1
DISPLAY	
Type of display	LCD backlighted
Digit height	5/7mm
MECHANICAL FEATURES	
Housing	4 modules DIN 43880 (35mm)
Housing material	self-extinguishing polycarbonate
Protection degree	IP20 terminals/ IP54 front frame
Connections type	screw terminals
Rigid cable	output - max 4mm ² input - max 6mm ²
Flexible cable	output - max 2,5mm ² input - max 4mm ²
ENVIRONMENTAL CONDITIONS	
Nominal temperature range	-5...55°C
Limit range for storage and transport	-25...70°C
Suitable for tropical climates	yes
Max.power dissipation*	≤5W

* for switchboard thermal calculation

Output

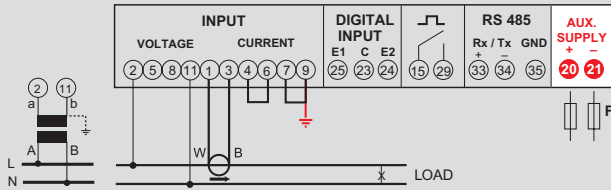
ENERGY PULSES S0 EN/IEC 62053-31	
Type	Optorelay with potential-free
Contact range	27 Vcc/ca-50mA
Assignable energy	Active or reactive energy
Pulse weight	selectable 10Wh/Varh...10MWh/MVarh
Pulse duration	selectable from 50 to 500ms
ALARM	
Type	Optorelay with potential-free
Contact range	27 Vcc/ca-50mA
Type alarm	min. or max
RS485 COMMUNICATION	
Protocol	MODBUS RTU/TCP
Standard	RS485-3-wire
Baud rate	selectable 4800...38400 bit/s

Multifunction meters

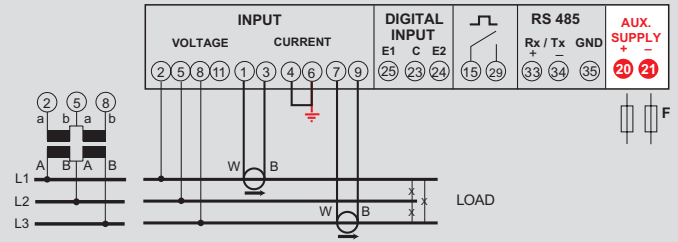
KIT Multifunction and rogowski coils for low voltage

Wiring diagrams

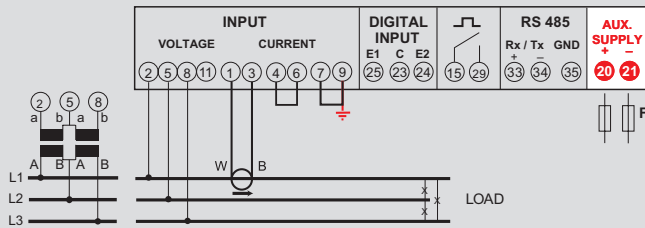
Single phase network



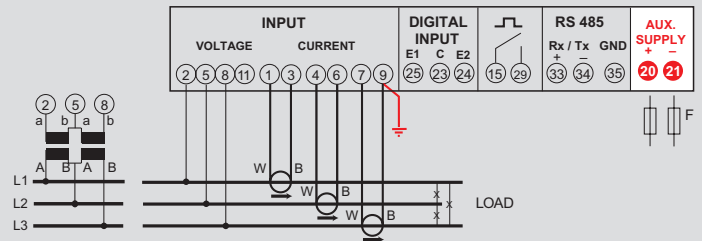
3-phase network, 3 wire (ARON L1-L3)



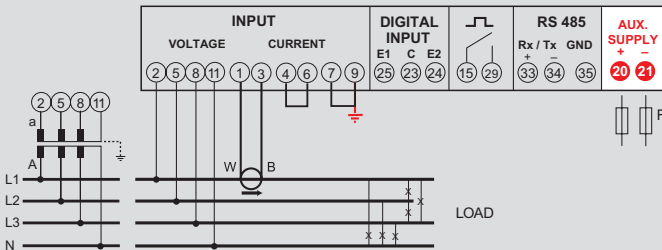
3-phase network, 3 wire, 1 System



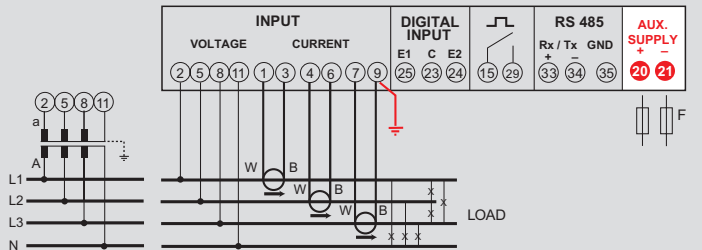
3-phase network, 3 wire



3-phase network, 4 wire, 1 System



3-phase network, 4 wire



Multifunction meters

Multifunction for low and medium voltage



Connection via CT for single and three-phase network, 3 or 4-wires. Phase sequence correction, diagnostic. It makes available active or reactive energy counting of the pulse output to integration of consumption supervision systems. For supervision systems, through the model with output RS485 communication ModbusRTU, you can transmitted on the network main electrical parameters in addition to the energy consumption.

Functions

- Phase and linked voltage
- THDV
- Neutral and phase current
- Current demand and current max. demand
- Active, reactive phase power
- Power demand and power max. demand
- Positive and negative active and reactive energy
- Power factor
- Phase angle between current and voltage
- Frequency
- Run hour meter, count start with voltage present

Cat. Nos.	Nemo D4-L+			
	Input (A)	Input* (V)	Auxiliary supply	Output
MF6HT40003	1 + 5	80...480	115 Vac	Pulse + RS485 ModBus RTU/TCP
MF6HT40003	1 + 5	80...480	230-240 Vac	Pulse + RS485 ModBus RTU/TCP
MF6HT4000H	1 + 5	80...480	20..150 Vdc + 48 Vac	Pulse + RS485 ModBus RTU/TCP
MF6HTU0003	1	80...480	115 Vac	Pulse
MF6GTU0006	1	80...480	230-240 Vac	Pulse
MF6GTU000H	1	80...480	20..150 Vdc + 48 Vac	Pulse

* Three-phase input 80...480V, Single -phase input 45...278V

Technical features

TECHNICAL NOTES	NT695
INPUT	
Three-phase voltage (V)	80...480 (phase-phase)
Single-phase voltage (V)	45...278V
Current rating	1A - 5A
External CT ratio	max 50kA/5A - max 10kA/1A
External VT ratio	primary voltage max 40kV
Continuous overload	1,2In
Istantaneous overload	20Imax/0,5s
Reference frequency	50Hz
Frequency tolerance	47...63Hz
Type of measurement	true RMS
Harmonic content	according to EN/IEC 61557-12 (up to 31a harmonic)
Voltage rated burden (VA)	≤1 (each phase)
Current rated burden (VA)	≤0,5 (each phase)
AUXILIARY SUPPLY	
Rated value Uaux	48 - 115 - 230 (single phase)
Tolerance	0,85...1,15Uaux - 40...60V (Uaux 48V)
Reference frequency	50Hz
Frequency tolerance	47...63Hz
Rated burden	≤ 5VA - 2,5W
ACCURACY	
CONFORMITY ACCURACY WITH EN/IEC 61557-12	- voltage: cl.0,5 - Current: cl. 0,5 - Active energy: cl.1 - Reactive energy cl.2 - Active power cl.0,5 - Reactive power cl.0,5 - Apparent power cl.0,5 - Frequency ± 0,1 Hz - THD (up to 31th harmonic) Harmonics single cl.1
DISPLAY	
Type of display	LCD backlighted
Digit height	6mm
Energy resolution	depending on the CT/VT ratio**
MECHANICAL FEATURES	
Housing	4 modules DIN 43880 (35mm)
Housing material	self-extinguishing polycarbonate
Protection degree	IP20 terminals/ IP54 front frame
Connections type	screw terminals
Rigid cable	output - max 4mm ² input - max 6mm ²
Flexible cable	output - max 4,5mm ² input - max 4mm ²
ENVIRONMENTAL CONDITIONS	
Nominal temperature range	-5...55°C
Limit range for storage and transport	-25...70°C
Suitable for tropical climates	yes
Max.power dissipation*	≤6,8W

* for switchboard thermal calculation

** kCT*kVT MAXIMUM DISPLAY

1...9	999999,99kWh/kvarh
10...99	9999999,9kWh/kvarh
100...999	99999999kWh/kvarh
1000...9999	999999,99MWh/Mvarh
10000...99999	9999999,9MWh/Mvarh
100000...400000	99999999MWh/Mvarh

Output

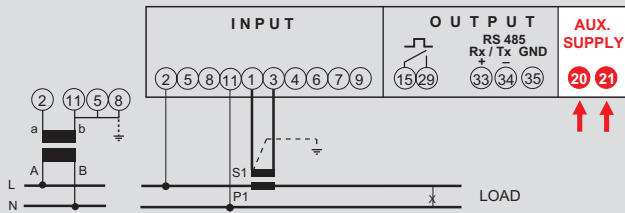
ENERGY PULSES S0 EN/IEC 62053-31	
Type	Optorelay with potential-free
Contact range	27 Vcc/ca-50mA
Assignable energy	Active or reactive energy
Pulse weight	selectable 0,1Wh/Varh...100MWh/MVarh
Pulse duration	selectable from 50 to 300ms
RS485 COMMUNICATION	
Protocol	MODBUS RTU/TCP
Standard	RS485-3-wire
Baud rate	selectable 4800...19200 bit/s

Multifunction meters

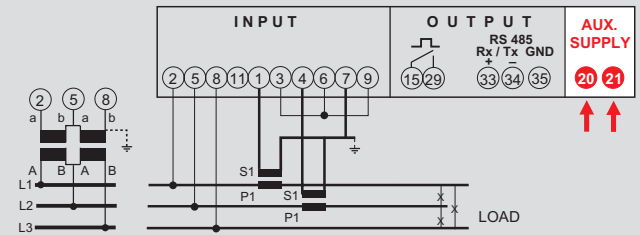
Multifunction for low and medium voltage

Wiring diagrams

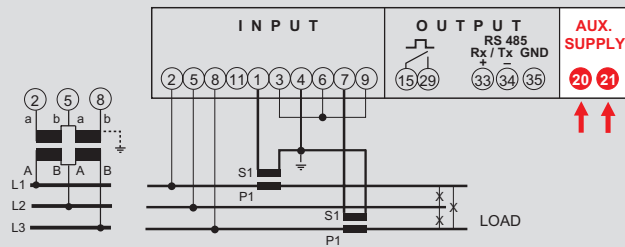
Single phase network



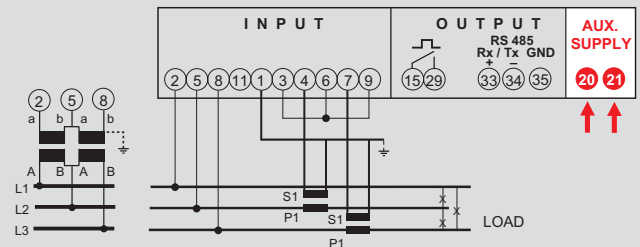
3-phase network, 3 wire (ARON L1-L2)



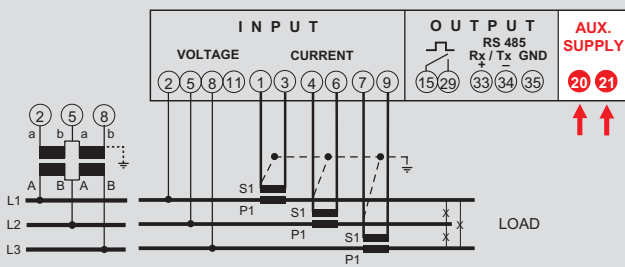
3-phase network, 3 wire (ARON L1-L3)



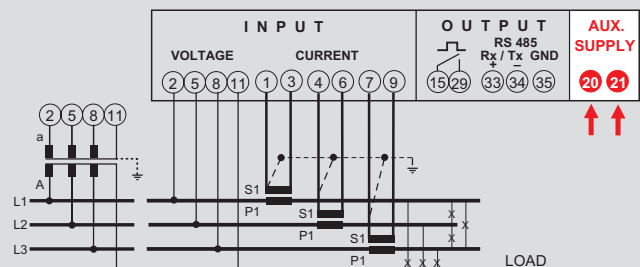
3-phase network, 3 wire (ARON L2-L3)



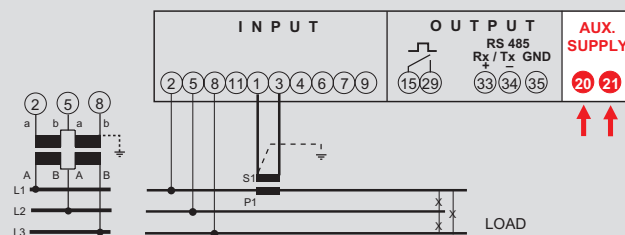
3-phase network, 3 wire



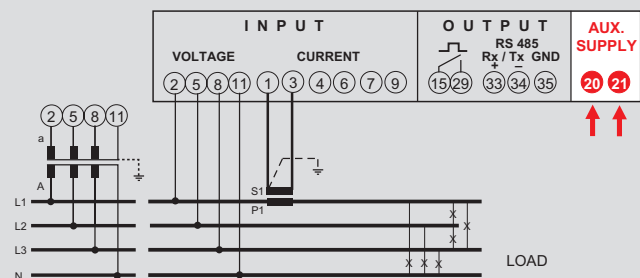
3-phase network, 4 wire



3-phase network, 3 wire, 1 System



3-phase network, 4 wire, 1 System



Multifunction meters

Multifunction for direct current



Direct voltage input by external adapter up to 1500V

Direct current input or from shunt (selectable)

- Direct input up to 10A direct current

- Input from shunt 60 – 100 – 150mV

It makes available active or reactive energy counting of the pulse output to integration of consumption supervision systems.

For supervision systems, through the model with output RS485 communication ModbusRTU, you can transmitted on the network main electrical parameters in addition to the energy consumption.

Functions

- Voltage
- Current
- Power
- Power demand and power max. demand
- Positive energy
- Negative energy
- Positivi and negative Ah
- Run hour meter, count start with voltage present

Cat. Nos.	Nemo D4-Dc			
	Input (A)	Input* (V)	Auxiliary supply	Output
MF6DC4200H	note 1	10...300V	20..150 Vdc + 48 Vac	Pulse + 2 alarms + RS485 ModBus RTU
MF6DC42006	note 1	10...300V	230-240 Vac	Pulse + 2 alarms + RS485 ModBus RTU
MF6DC4206H	note 1	50...1500V*	20..150 Vdc + 48 Vac	2 alarms + RS485 ModBus RTU
MF6DC42066	note 1	50...1500V*	230-240 Vac	2 alarms + RS485 ModBus RTU

* with AVMD150 adapter 2 modulues

note 1 Direct input up to 10A direct current, Input from shunt 60 – 100 – 150mV

Technical features

TECHNICAL NOTES		NT753
INPUT		
MF6DC4200H	Direct input	10...300Vdc
MF6DC42006	Input impedance	> 300kΩ
MF6DC4206H	Input by adapter	50...1500Vdc
MF6DC42066	Input impedance	> 3 MΩ
Instantaneous overload		10In/0,5s
Direct Input		0...10A
Voltage drop:		≤ 100mV (In10A)
Input from shunt		60 – 100 – 150mV
Shunt primary		1...9999A
AUXILIARY SUPPLY		
Rated value Uaux ac		48 – 230V
Tolerance		0,85...1,15Uaux - 40...60V (Uaux 48V)
Reference frequency		50Hz
Frequency tolerance		47...63Hz
Rated burden		≤ 5VA – 3W
Rated value Uaux dc		20...150Vdc
Rated burden		≤ 2W
ACCURACY		
CONFORMITY ACCURACY WITH EN/IEC 61557-12		- voltage: ± 0,5% (10...100% Un) - Current: ± 0,5% (10...100% In) - Power: ± 1% (10...100% Pn)
DISPLAY		
Type of display		LCD backlighted
Digit height		6mm
Reference frequency		50Hz
MECHANICAL FEATURES		
Housing		4 modules DIN 43880 (35mm) (6 modules with AVMD150 adapter)
Housing material		self-extinguishing polycarbonate
Protection degree		IP20 terminals/ IP52 front frame
Connections type		screw terminals
Rigid cable		output - max 4mm ² input - max 6mm ²
Flexible cable		output - max 4,5mm ² input - max 4mm ²
ENVIRONMENTAL CONDITIONS		
Nominal temperature range		-5...55°C
Limit range for storage and transport		-25...70°C
Suitable for tropical climates		yes
Max.power dissipation*		≤ 4W (Uax ca) - ≤ 4W (Uax cc)

* for switchboard thermal calculation

Output

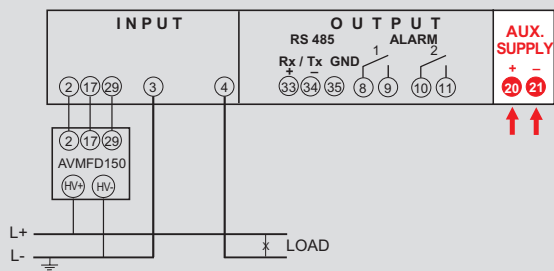
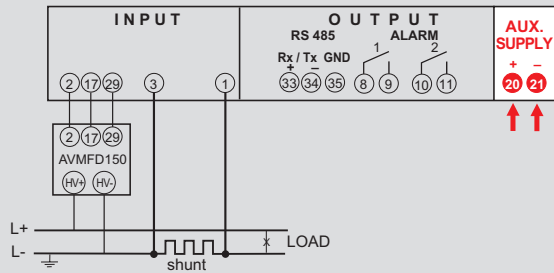
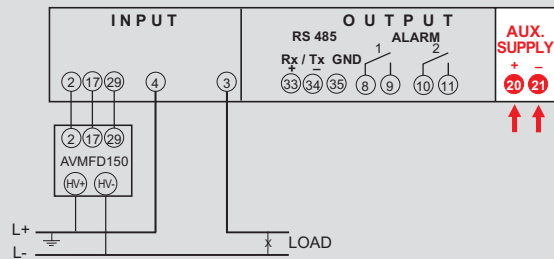
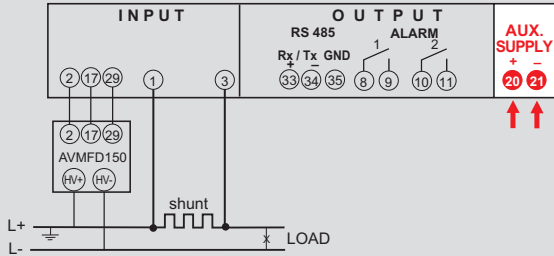
ENERGY PULSES S0 EN/IEC 62053-31	
Type	Optorelay with potential-free
Contact range	27 Vcc/ca-50mA
Assignable energy	Active or reactive energy
Pulse weight	selectable 0,1kWh - 1kWh - 10kWh - 100kWh
Pulse duration	selectable from 50 to 300ms
RS485 COMMUNICATION	
Protocol	MODBUS RTU
Standard	RS485-3-wire
Baud rate	selectable 4800...19200 bit/s
OUTPUT RELAY	
Type	2 relays with potential-free
Output function	2 singularly-programmable independent alarms
Contact range	5A 250Vac cosφ 1 - 3A 250Vac cosφ 0,4 - 5A 30Vdc

Multifunction meters

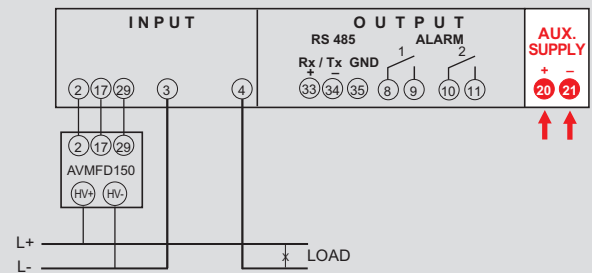
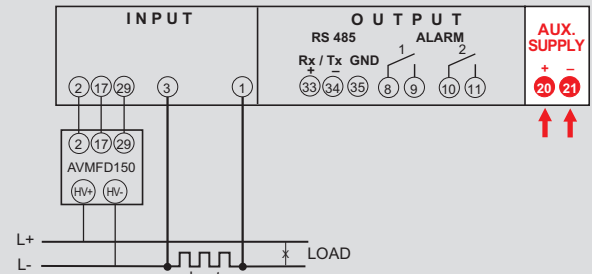
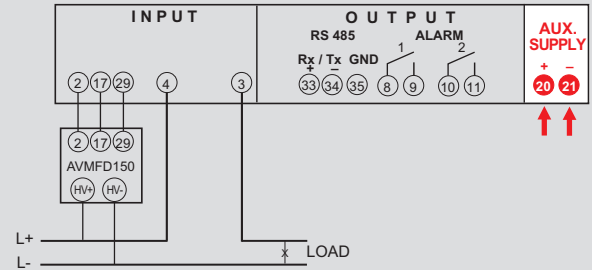
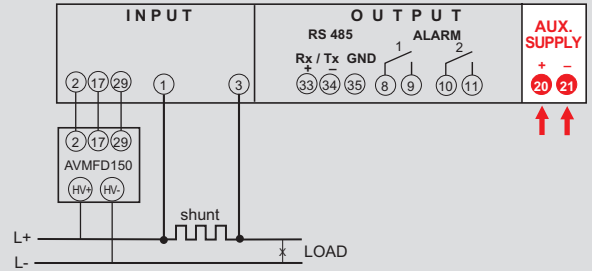
Multifunction for direct current

Wiring diagrams

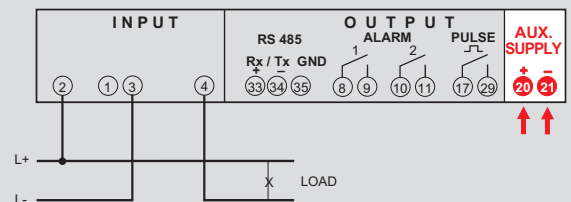
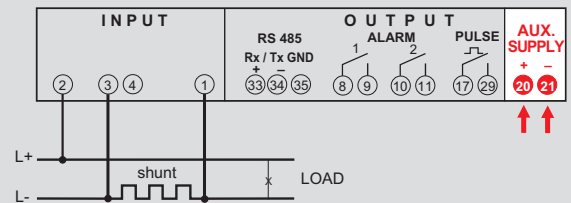
MF6DC4206H - MF6DC42066
INPUT 50...1500Vdc line connected with earth



MF6DC4206H - MF6DC42066
INPUT 50...1500Vdc line insulated from earth



MF6DC4200H - MF6DC42006
INPUT 10...300Vdc /dc



Multifunction meters

Flush mounting multifunction for low voltage



Connection via CT for single and three-phase network, 3 or 4-wires.
Phase sequence correction, diagnostic

Functions

- Phase and linked voltage
- Neutral and phase current
- Current demand and current max. demand
- Power demand and power max. demand
- Power factor
- Frequency
- Run hour meter, count start with voltage present
- State of alarms

Cat. Nos.	Nemo 72-b			
	Input (A)	Input (V)	Auxiliary supply	Output
MF7GM0009A	5	195(340) - 260(450)Vac	Self supplied	-
MF7GM2009A	5	195(340) - 260(450)Vac	Self supplied	2 alarms
MF7GM0008A	1	195(340) - 260(450)Vac	Self supplied	-
MF7GM2008A	1	195(340) - 260(450)Vac	Self supplied	2 alarms
MF7GT0009A	5	340...450Vac	Self supplied	-
MF7GT2009A	5	340...450Vac	Self supplied	2 alarms
MF7GT0008A	1	340...450Vac	Self supplied	-
MF7GT2008A	1	340...450Vac	Self supplied	2 alarms

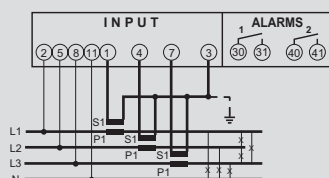
Technical features

TECHNICAL NOTES	NT651
INPUT	
Three-phase voltage (V)	340...450V (phase-phase)
Single-phase voltage (V)	195...260V
Current rating	1A - 5A
External CT ratio	5/10/15/20/25/30/40/50/60/70/75/80/100/120/125/150/160/200/250/300/400/500/600/700/750/800/1000/1200/1250/1500/1600/2000/2500/3000/3200/4000/5000/6000/7000/7500/8000A
Continuous overload	1,2In
Instantaneous overload	20Imax/0,5s
Reference frequency	50Hz
Frequency tolerance	47...63Hz
Type of measurement	true RMS
Harmonic content	up to the 21th harmonic
Voltage rated burden (VA)	≤0,5 (each phase)
Current rated burden (VA)	≤0,5 (each phase)
AUXILIARY SUPPLY	
Self-supplied	L(1) - N (mod. MF7GM..) / L1 - L2 (mod. MF7GT..)
Rated burden	≤ 2VA - ≤ 2,5VA (with alarms)
ACCURACY	
CONFORMITY ACCURACY WITH EN/IEC 61557-12	- voltage: ± 0,5% (340...450V phase - phase) - Current: ± 0,5% (10...120% In) - Neutral current: ± 2% - Power: ± 1% P - ± 2% Q / S (10...120% Pn/Qn/Sn cosφ 0,5 ind...0,5cap) - Power factor: ± 2% - Frequency: ± 0,2 Hz
DISPLAY	
Type of display	LCD backlighted
Digit height	6mm
MECHANICAL FEATURES	
Housing	flush mounting (panel cutout 68x68mm)
Front frame	72x72mm
Housing material	self-extinguishing makrolon
Protection degree	IP20 terminals/ IP54 front frame
Connections type	screw terminals
Rigid cable	output - max 4mm ² input - max 4mm ²
Flexible cable	output - max 2,5mm ² input - max 2,5mm ²
ENVIRONMENTAL CONDITIONS	
Nominal temperature range	-5...55°C
Limit range for storage and transport	-25...70°C
Suitable for tropical climates	yes
Max.power dissipation*	≤6,8W

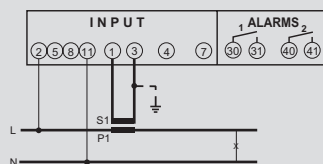
* for switchboard thermal calculation

Wiring diagrams

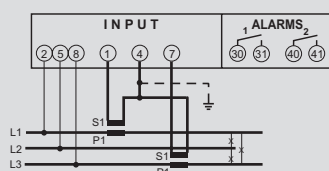
Three-phase network 4-wire



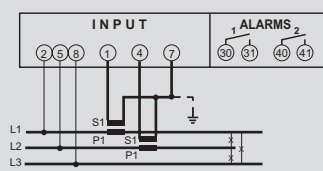
Single-phase network



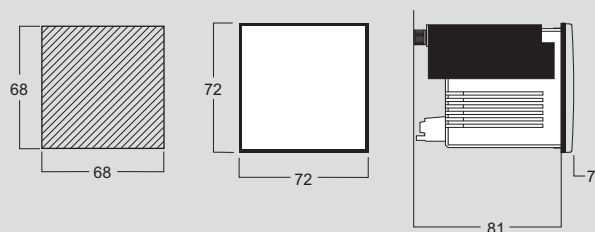
Three-phase network 3-wire (ARON L1-L3)



Three-phase network 3-wire (ARON L1-L2)



Dimensions



Multifunction meters

KIT Flush mounting multifunction and CT for low voltage



Connection via CT for single and three-phase network, 3 or 4-wires.
Phase sequence correction, diagnostic

Functions

- Phase and linked voltage
- Neutral and phase current
- Current demand and current max. demand
- Power demand and power max. demand
- Power factor
- Frequency
- Run hour meter, count start with voltage present
- State of alarms

Cat. Nos.	KIT Nemo 72-b + 3 CT (TAIBB MODEL)			
	Input (A) /CT (A)	Input (V)	Auxiliary supply	Output
K1NEMO72B040	5 / 3CT 40/5	340...450Vac	Self supplied	-
K1NEMO72B050	5/ 3CT 50/5	340...450Vac	Self supplied	-
K1NEMO72B060	5/ 3CT 60/5	340...450Vac	Self supplied	-
K1NEMO72B100	5/ 3CT 100/5	340...450Vac	Self supplied	-
K1NEMO72B150	5/ 3CT 150/5	340...450Vac	Self supplied	-
K1NEMO72B200	5/ 3CT 200/5	340...450Vac	Self supplied	-
K1NEMO72B250	5/ 3CT 250/5	340...450Vac	Self supplied	-

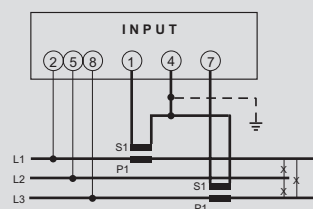
Technical features

TECHNICAL NOTES	NT870
INPUT	
Three-phase voltage (V)	340...450V (phase-phase)
Current rating	5A
Continuous overload	1,2In
Istantaneous overload	20Imax/0,5s
Reference frequency	50Hz
Frequency tolerance	47...63Hz
Type of measurement	true RMS
Harmonic content	up to the 21th harmonic
Voltage rated burden (VA)	≤0,5 (each phase)
Current rated burden (VA)	≤0,5 (each phase)
AUXILIARY SUPPLY	
Self-supplied	L1 - L2
Rated burden	≤ 2VA
ACCURACY	
CONFORMITY ACCURACY WITH EN/IEC 61557-12	- voltage: ± 0,5% (340...450V phase - phase) - Current: ± 0,5% (10...120% In) - Neutral current: ± 2% - Power: ± 1% P - ± 2% Q / S (10...120% Pn/ Qn/Sn cosj 0,5 ind...0,5cap) - Power factor: ± 2% - Frequency: ± 0,2 Hz
DISPLAY	
Type of display	LCD backlighted
Digit height	6mm
MECHANICAL FEATURES	
Housing	flush mounting (panel cutout 68x68mm)
Front frame	72x72mm
Housing material	self-extinguishing makrolon
Protection degree	IP20 terminals/ IP54 front frame
Connections type	screw terminals
Rigid cable	output - max 4mm ² input - max 4mm ²
Flexible cable	output - max 2,5mm ² input - max 2,5mm ²
ENVIRONMENTAL CONDITIONS	
Nominal temperature range	-5...55°C
Limit range for storage and transport	-25...70°C
Suitable for tropical climates	yes
Max.power dissipation*	≤6,8W

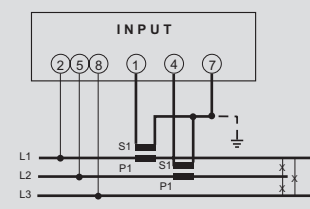
* for switchboard thermal calculation

Wiring diagrams

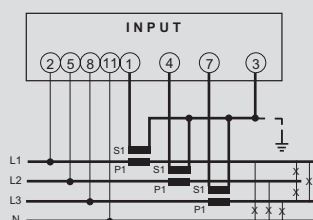
Three-phase network
3-wire (ARON L1-L3)



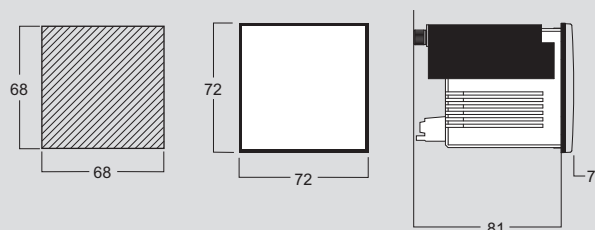
Three-phase network
3-wire (ARON L1-L2)



Three-phase network 4-wire



Dimensions



Multifunction meters

Flush mounting multifunction for low voltage



Connection via CT for single and three-phase network, 3 or 4-wires. Phase sequence correction, diagnostic. It makes available active or reactive energy counting of the pulse output to integration of consumption supervision systems. For supervision systems, through the model with output RS485 communication ModbusRTU, you can transmit on the network main electrical parameters in addition to the energy consumption.

Functions

- Phase and linked voltage
- Min. and max. phase voltage
- THDV
- Voltage Harmonic analysis
- Voltage crest factor
- Phase angle between voltage
- Neutral and phase current
- Current demand and current max. demand
- Average current
- THDI
- Current Harmonic analysis
- Current crest factor
- Phase angle between current
- Active, reactive phase power
- Power demand and power max. demand
- Positive and negative active and reactive energy
- Power factor
- Phase angle between current and voltage
- Frequency
- Run hour meter, count start with voltage or power present

Cat. Nos.	Nemo 72-Le			
	Input (A)	Input* (V)	Auxiliary supply	Output
MF72411	1 + 5	80...500	80...265Vac 100...300Vdc	Pulse or alarm
MF72421	1 + 5	80...500	80...265Vac 100...300Vdc	Pulse or alarm + RS485 ModBus RTU/TCP
MF724B1	1 + 5	80...500	80...265Vac 100...300Vdc	Pulse or alarm + RS485 BACnet
MF72412	1 + 5	80...500	20...60 Vdc	Pulse or alarm
MF72422	1 + 5	80...500	20...60 Vdc	Pulse or alarm + RS485 ModBus RTU/TCP
MF724B2	1 + 5	80...500	20...60 Vdc	Pulse or alarm + RS 485 BACnet

* Three-phase input 80...500V, Single -phase input 50...290V

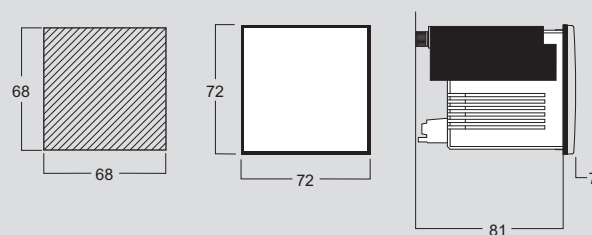
Technical features

TECHNICAL NOTES	NT879
INPUT	
Three-phase voltage (V)	80...500 (phase-phase)
Single-phase voltage (V)	50...290V
Current rating	1A - 5A
External CT ratio	max 50kA/5A - max 10kA/1A
External VT ratio	primary voltage max 1200V
Continuous overload	1,2In
Instantaneous overload	20Imax/0,5s
Reference frequency	50Hz – 400Hz (automatic selection)
Frequency tolerance	45...65Hz (fn 50Hz) – 360...440Hz (fn 400Hz)
Type of measurement	true RMS
Harmonic content	up to the 50th harmonics (45...65Hz)
Voltage rated burden (VA)	≤ 0,2VA (phase-neutral)
Current rated burden (VA)	≤ 1VA (for phase)
AUXILIARY SUPPLY	
Rated value Uaux	80...265Vac - 48Vac
Reference frequency	50 or 400Hz (automatic selection)
Frequency tolerance	45...65Hz (fn 50Hz) or 360...440Hz (fn 400Hz)
Rated burden	≤ 2,5VA (230Vac backlight 30%)
Rated value Uaux	100...300Vdc - 20...60Vdc
Rated burden	≤ 2,5W (24Vdc backlight 30%)
ACCURACY	
CONFORMITY ACCURACY WITH EN/IEC 61557-12	- voltage: cl.0,5 - Current: cl. 0,5 - Active energy: cl.0,5 - Reactive energy cl.1 - Active power cl.05 - Reactive power cl.1 - Apparent power cl.1 - Frequency ± 0,1 Hz - THD (up to 50th harmonic) Harmonics single cl.1
DISPLAY	
Type of display	LCD backlighted
Digit height	6mm
Energy resolution	depending on the CT/VT ratio**
MECHANICAL FEATURES	
Housing	flush mounting (panel cutout 68x68mm)
Front frame	72x72mm
Housing material	self-extinguishing makrolon
Protection degree	IP20 terminals/ IP54 front frame
Connections type	screw terminals
Rigid cable	output - max 4mm ² input - max 6mm ²
Flexible cable	output - max 2,5mm ² input - max 4mm ²
ENVIRONMENTAL CONDITIONS	
Nominal temperature range	-5...55°C
Limit range for storage and transport	-25...70°C
Suitable for tropical climates	yes
Max.power dissipation*	≤5W

* for switchboard thermal calculation

** kCT*kVT	MAXIMUM DISPLAY
1...9	999999,99kWh/kvarh
10...99	9999999,9kWh/kvarh
100...999	99999999kWh/kvarh
1000...9999	999999,99MWh/Mvarh
10000...99999	9999999,9MWh/Mvarh

Dimensions



Multifunction meters

Flush mounting multifunction for low voltage

Output

ENERGY PULSES S0 EN/IEC 62053-31

Type	Optorelay with potential-free
Contact range	27 Vcc/ca-50mA
Assignable energy	Active or reactive energy
Pulse weight	selectable 10Wh/Varh...10MWh/MVarh
Pulse duration	selectable from 50 to 500ms

ALARM

Type	Optorelay with potential-free
Contact range	27 Vcc/ca-50mA
Type alarm	min. or max

RS485 COMMUNICATION

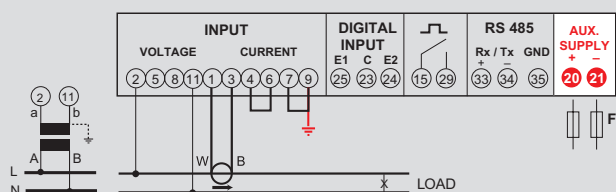
Protocol	MODBUS RTU/TCP
Standard	RS485-3-wire
Baud rate	selectable 4800...38400 bit/s

BACNET RS485 COMMUNICATION

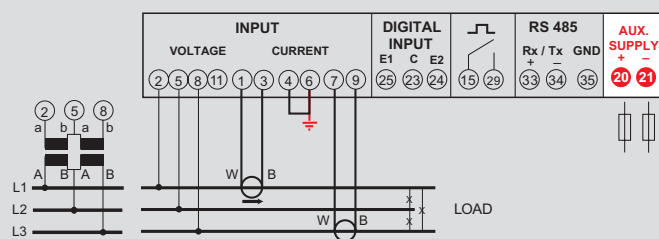
Protocol	BACNET MS-TP
Standard	RS485-3-wire
Baud rate	selectable 4800...76800 bit/s

Wiring diagrams

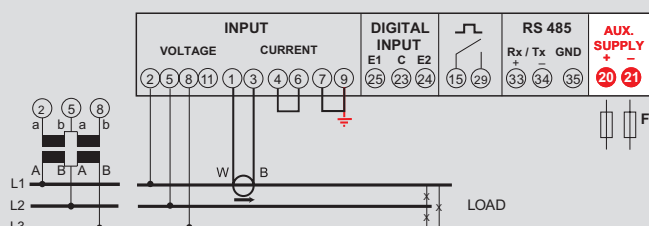
Single phase network



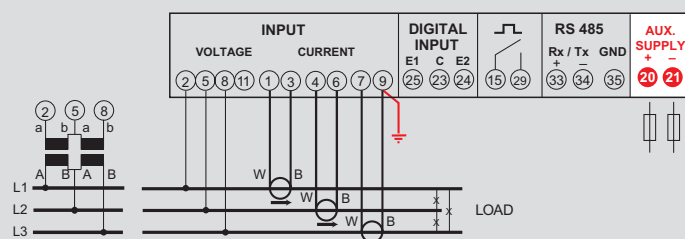
3-phase network, 3 wire (ARON L1-L3)



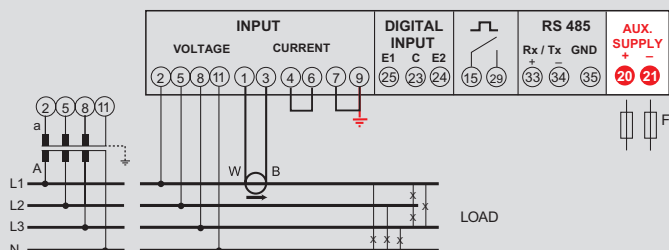
3-phase network, 3 wire, 1 System



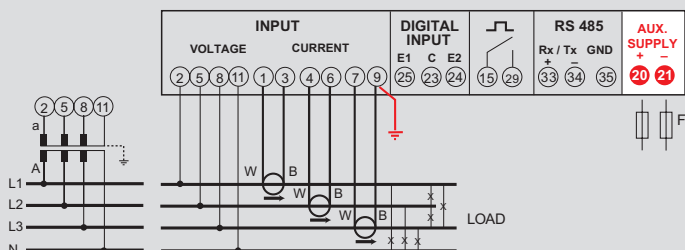
3-phase network, 3 wire



3-phase network, 4 wire, 1 System



3-phase network, 4 wire



Multifunction meters

Flush mounting multifunction for low voltage



Connection via CT for single and three-phase network, 4-wires.
Phase sequence correction, diagnostic
It makes available active or reactive energy counting of the pulse output to integration of consumption supervision systems.
For supervision systems, through the model with output RS485 communication ModbusRTU, you can transmitted on the network main electrical parameters in addition to the energy consumption.

Functions

- Phase and linked voltage
- Min. and max. phase voltage
- THDV
- Neutral and phase current
- Current demand and current max. demand
- Average current
- THDI
- Active, reactive phase power
- Power demand and power max. demand
- Positive and negative active and reactive energy
- Power factor
- Frequency
- Run hour meter, count start with voltage or power present

Cat. Nos.	Nemo 96 HDe			
MF96E06	Input (A) 5	Input* (V) 500	Auxiliary supply self-supplied	Output Pulse + RS485

* Three-phase input 500V, Single -phase input 230-240V

Technical features

TECHNICAL NOTES	NT900
INPUT	
Three-phase voltage (V)	500 (phase-phase)
Single-phase voltage (V)	230-240V
Current rating	5A
External CT ratio	max 50kA/5A
Continuous overload	1,2In
Istantaneous overload	20Imax/0,5s
Reference frequency	50Hz – 400Hz (automatic selection)
Frequency tolerance	45...65Hz (fn 50Hz) – 360...440Hz (fn 400Hz)
Type of measurement	true RMS
Harmonic content	up to the 50th harmonics
Voltage rated burden (VA)	≤ 0,1VA (phase-neutra)
Current rated burden (VA)	≤ 1VA (for phase)
AUXILIARY SUPPLY	
Nominal voltage	Taken from measurement (self-supplied)
ACCURACY	
CONFORMITY ACCURACY WITH EN/IEC 61557-12	- voltage: cl.0,5 - Current: cl. 0,5 - Active energy: cl.1 - Reactive energy cl.1 - Active power cl.1 - Reactive power cl.1 - Apparent power cl.1 - Frequency ± 0,1Hz - THD cl.1
DISPLAY	
Type of display	LCD backlighted
Digit height	6/9mm
Energy resolution	depending on the CT ratio **
MECHANICAL FEATURES	
Housing	flush mounting (panel cutout 92x92mm)
Front frame	96x96mm
Housing material	self-extinguishing polycarbonate
Protection degree	IP20 terminals/ IP54 front frame
Connections type	screw terminals
Rigid cable	max 4,5mm ²
Flexible cable	max 2,5mm ²
ENVIRONMENTAL CONDITIONS	
Nominal temperature range	-5...55°C
Limit range for storage and transport	-25...70°C
Suitable for tropical climates	yes
Max.power dissipation*	≤5W

* for switchboard thermal calculation

** kCT	MAXIMUM DISPLAY
1...9	999999,99kWh/kvarh
10...99	9999999,9kWh/kvarh
100...999	99999999kWh/kvarh
1000...9999	999999,99MWh/Mvarh

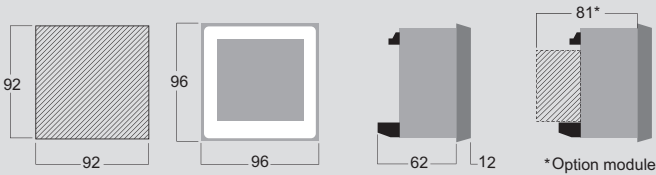
Output

ENERGY PULSES S0 EN/IEC 62053-31	
Type	Optorelay with potential-free
Contact range	27 Vcc/ca-50mA
Assignable energy	Active or reactive energy
Pulse weight	selectable 10Wh/Varh...10MWh/MVarh
Pulse duration	selectable from 50 to 500ms
RS485 COMMUNICATION	
Protocol	MODBUS RTU/TCP
Standard	RS485-3-wire
Baud rate	selectable 4800...38400 bit/s

Multifunction meters

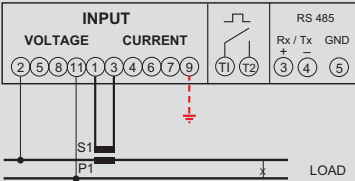
Selection table

■ Dimensions

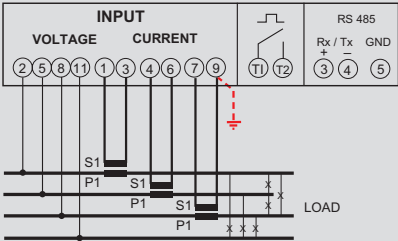


■ Wiring diagrams

Single phase network



3-phase network, 4 wire



Multifunction meters

Flush mounting multifunction for low voltage



Connection via CT for single and three-phase network, 3 or 4-wires. Phase sequence correction, diagnostic. Can be accessorised with an additional modules. It makes available active or reactive energy counting of the pulse output to integration of consumption supervision systems. For supervision systems, through the model with output RS485 communication ModbusRTU, you can transmitted on the network main electrical parameters in addition to the energy consumption.

Functions

- Phase and linked voltage
- Min. and max. phase voltage
- THDV
- Voltage Harmonic analysis
- Voltage crest factor
- Neutral and phase current
- Current demand and current max. demand
- Average current
- THDI
- Current Harmonic analysis
- Current crest factor
- Active, reactive phase power
- Power demand and power max. demand
- Positive and negative active and reactive energy
- Power factor
- Frequency
- Run hour meter, count start with voltage or power present

Cat. Nos.	Nemo 96 HDLe				
	Input (A)	Input* (V)	Auxiliary supply	Output	
MF96411	1 + 5	80...500	80...265Vac 100...300Vdc	Pulse + 1 additional modules	
MF96412	1 + 5	80...500	16...60Vdc	Pulse + 1 additional modules	
MF96421	1 + 5	80...500	80...265Vac 100...300Vdc	Pulse + RS485 ModBus RTU/TCP + 1 additional modules	
MF96422	1 + 5	80...500	16...60Vdc	Pulse + RS485 ModBus RTU/TCP + 1 additional modules	

* Three-phase input 80...500V, Single -phase input 50...290V

Cat. Nos.	Additional modules
	Descriptions
IF96001	Module RS485 Modbus RTU/TCP
IF96012	Module RS485 Modbus RTU/TCP + memory
IF96002	Module RS232 Modbus RTU/TCP
IF96007A	Module Profibus EN50170 - DP0
IF96009	Module LonWorks
IF96013	Module M-Bus EN1434-3
IF96014	Module RS485 BACnet MS-TP
IF96015	Module Ethernet

Technical features

TECHNICAL NOTES	NT854
INPUT	
Three-phase voltage (V)	80...500 (phase-phase)
Single-phase voltage (V)	50...290V
Current rating	1A - 5A
External CT ratio	max 50kA/5A - max 10kA/1A
External VT ratio	primary voltage max 1200V
Continuous overload	1,2In
Istantaneous overload	20Imax/0,5s
Reference frequency	50Hz – 400Hz (automatic selection)
Frequency tolerance	45...65Hz (fn 50Hz) – 360...440Hz (fn 400Hz)
Type of measurement	true RMS
Harmonic content	up to the 50th harmonics
Voltage rated burden (VA)	≤ 0,1VA (phase-neutra)
Current rated burden (VA)	≤ 1VA (for phase)
AUXILIARY SUPPLY	
Rated value Uaux	80...265Vac
Reference frequency	50 or 400Hz (automatic selection)
Frequency tolerance	45...65Hz (fn 50Hz) or 360...440Hz (fn 400Hz)
Rated burden	≤ 2,5VA (230Vac backlight 30% without external modules)
Rated value Uaux	100...300Vdc
Rated burden	≤ 3,5W (without modules, 110Vdc)
ACCURACY	
CONFORMITY ACCURACY WITH EN/IEC 61557-12	- voltage: cl.0,5 - Current: cl. 0,5 - Active energy: cl.0,5 - Reactive energy cl.1 - Active power cl.05 - Reactive power cl.1 - Apparent power cl.1 - Frequency ± 0,1Hz - THD cl.1
DISPLAY	
Type of display	LCD backlighted
Digit height	8/12mm
Energy resolution	depending on the CT/VT ratio**
MECHANICAL FEATURES	
Housing	flush mounting (panel cutout 92x92mm)
Front frame	96x96mm
Housing material	self-extinguishing polycarbonate
Protection degree	IP20 terminals/ IP54 front frame
Connections type	screw terminals
Rigid cable	max 4,5mm ²
Flexible cable	max 2,5mm ²
ENVIRONMENTAL CONDITIONS	
Nominal temperature range	-5...55°C
Limit range for storage and transport	-25...70°C
Suitable for tropical climates	yes
Max.power dissipation*	≤5W

* for switchboard thermal calculation

** kCT*kVT MAXIMUM DISPLAY
 1...9 999999,99kWh/kvarh
 10...99 9999999,9kWh/kvarh
 100...999 99999999kWh/kvarh
 1000...9999 999999,9MWh/Mvarh
 10000...99999 9999999,9MWh/Mvarh

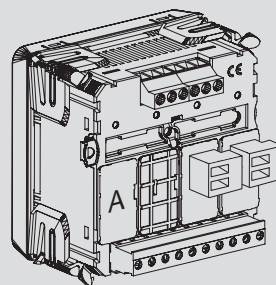
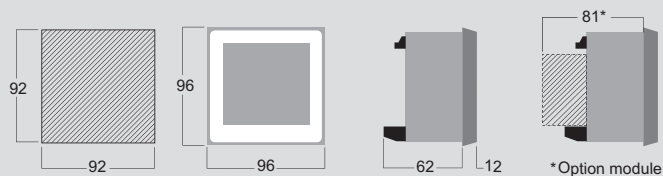
Output

ENERGY PULSES S0 EN/IEC 62053-31	
Type	Optorelay with potential-free
Contact range	27 Vcc/ca-50mA
Assignable energy	Active or reactive energy
Pulse weight	selectable 10Wh/Varh...10MWh/MVarh
Pulse duration	selectable from 50 to 500ms
RS485 COMMUNICATION	
Protocol	MODBUS RTU/TCP
Standard	RS485-3-wire
Baud rate	selectable 4800...38400 bit/s
ADDITIONAL MODULES	
N. max installable module	1
Installation position	A

Multifunction meters

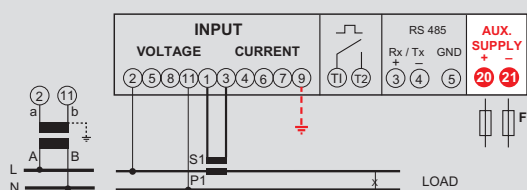
Flush mounting multifunction for low voltage

Dimensions

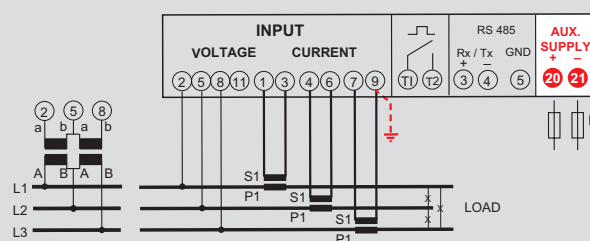


Wiring diagrams

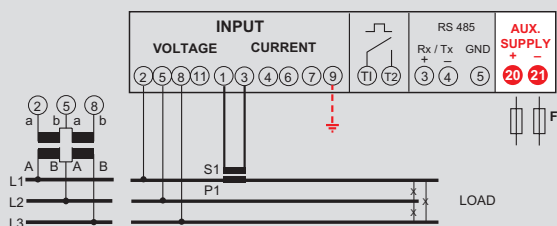
Single phase network



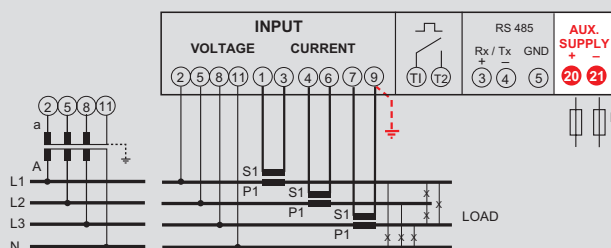
3-phase network, 3 wire



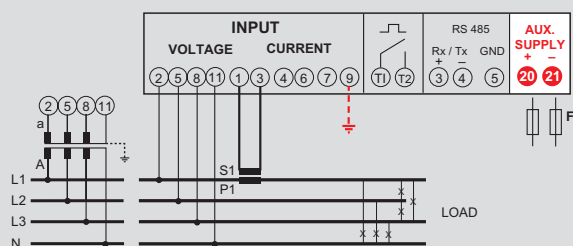
3-phase network, 3 wire, 1 System



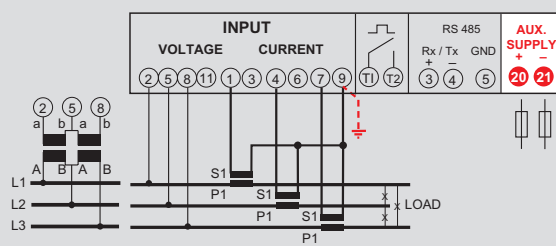
3-phase network, 4 wire



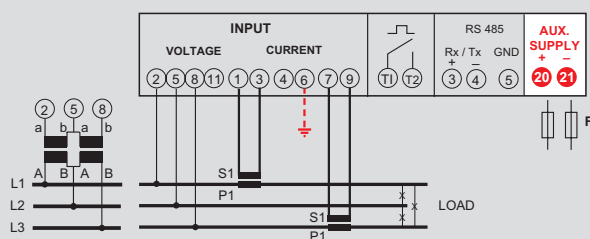
3-phase network, 4 wire, 1 System



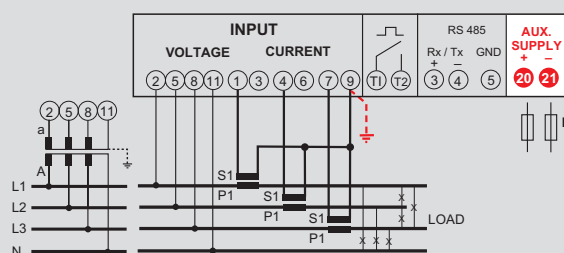
3-phase network, 3 wire



3-phase network, 4 wire (ARON L1-L3)



3-phase network, 4 wire



Multifunction meters

Flush mounting multifunction for low voltage



IF96001



IF96002



IF96015



IF96009

Connection via CT for single and three-phase network, 3 or 4-wires.
Phase sequence correction, diagnostic.

Can be accessorised with up to 4 additional modules.

Functions

- Phase and linked voltage
- Min. and max. phase voltage
- THDV
- Neutral and phase current
- Current demand and current max. demand
- Average current
- THDI
- Active, reactive phase power
- Power demand and power max. demand
- Positive and negative active and reactive energy
- Power factor
- Frequency
- Run hour meter, count start with voltage or power present

Cat. Nos.	Nemo 96 HD			
	Input (A)	Input* (V)	Auxiliary supply	Output
MF96001	1 + 5	80...500	80...265Vac 100...300Vdc	up 4 additional modules
MF96002	1 + 5	80...500	16...60Vdc	up 4 additional modules

* Three-phase input 80...500V, Single -phase input 50...290V

Cat. Nos.	Additional modules	
	Descriptions	
IF96001	Module RS485 Modbus RTU/TCP	
IF96012	Module RS485 Modbus RTU/TCP + memory	
IF96002	Module RS232 Modbus RTU/TCP	
IF96007A	Module Profibus EN50170 - DP0	
IF96009	Module LonWorks	
IF96013	Module M-Bus EN1434-3	
IF96014	Module RS485 BACnet MS-TP	
IF96015	Module Ethernet	
IF96003	Module with 2 energy pulse outputs (SPST)	
IF96004	Module with 2 x 0/4...20mA analogue outputs	
IF96005	Module with 2 alarm relay outputs (SPST)	
IF96006	Neutral current measurement from CT /1A or 5A programmable	
IF96016	Module temperature measurement 2 inputs from PT100	
IF96010	Module with 2 input SPST-NO 2 relay outputs SPST-NO	
IF96011	Module with 2 input 12/24Vcc 2 relay outputs SPST-NO	

Technical features

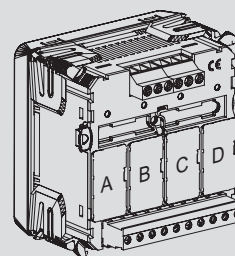
TECHNICAL NOTES	NT680
INPUT	
Three-phase voltage (V)	80...500 (phase-phase)
Single-phase voltage (V)	50...290V
Current rating	1A - 5A
External CT ratio	max 50kA/5A - max 10kA/1A
External VT ratio	primary voltage max 1200V
Continuous overload	1,2In
Istantaneous overload	20Imax/0,5s
Reference frequency	50Hz
Frequency tolerance	45...63Hz
Type of measurement	true RMS
Voltage rated burden (VA)	≤ 0,1VA (phase-neutral)
Current rated burden (VA)	≤ 1VA (for phase)
AUXILIARY SUPPLY	
Rated value Uaux	80...265Vac
Reference frequency	50
Frequency tolerance	45...63Hz
Rated burden	≤ 2,5VA (230Vac backlight 30% without external modules)
Rated value Uaux	100...300Vdc 11...60Vdc
Rated burden	≤ 3,5W (without modules)
ACCURACY	
CONFORMITY ACCURACY WITH EN/IEC 61557-12	- Voltage: cl.0,5 - Current: cl. 0,5 - Active energy: cl.0,5 - Reactive energy cl.2 - Active power cl.05 - Reactive power cl.1 - Apparent power cl.1 - Frequency cl.0,5 - Power factor cl.0,5 - THD cl.2
DISPLAY	
Type of display	LCD backlighted
Digit height	12mm
Energy resolution	depending on the CT/VT ratio**
MECHANICAL FEATURES	
Housing	flush mounting (panel cutout 92x92mm)
Front frame	96x96mm
Housing material	self-extinguishing polycarbonate
Protection degree	IP20 terminals/ IP54 front frame
Connections type	screw terminals
Rigid cable	max 4,5mm ²
Flexible cable	max 2,5mm ²
ENVIRONMENTAL CONDITIONS	
Nominal temperature range	-5...55°C
Limit range for storage and transport	-25...70°C
Suitable for tropical climates	yes
Max.power dissipation*	≤5W

* for switchboard thermal calculation

** kCT*kVT	MAXIMUM DISPLAY
1...9	999999,99kWh/kvarh
10...99	9999999,9kWh/kvarh
100...999	99999999kWh/kvarh
1000...9999	999999,99MWh/Mvarh
10000...99999	9999999,9MWh/Mvarh
100000...400000	99999999MWh/Mvarh

Output

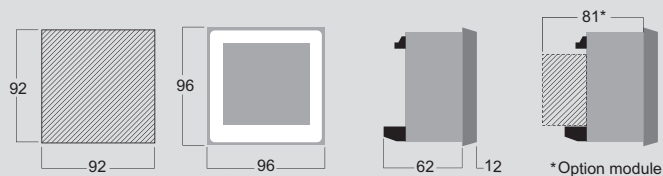
ADDITIONAL MODULES	
N. max installable module	1
Installation position	A-B-C-D



Multifunction meters

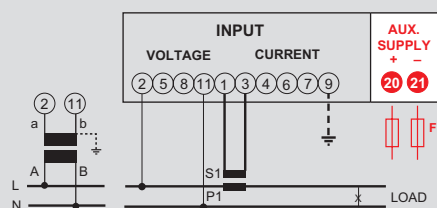
Flush mounting multifunction for low voltage

Dimensions

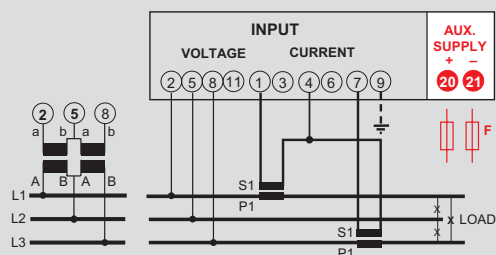


Wiring diagrams

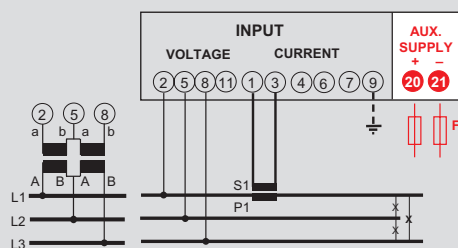
Single phase network



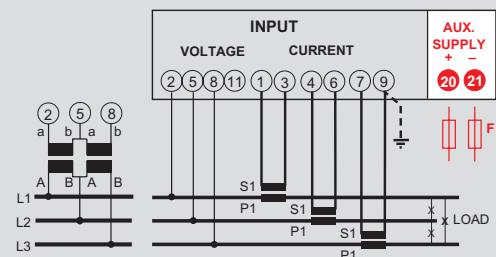
3-phase network, 4 wire (ARON L1-L3)



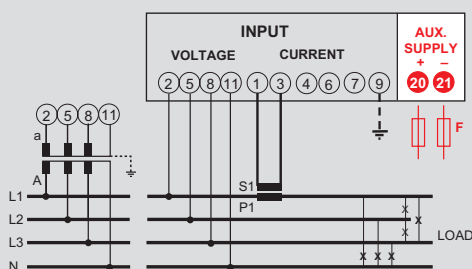
3-phase network, 3 wire, 1 System



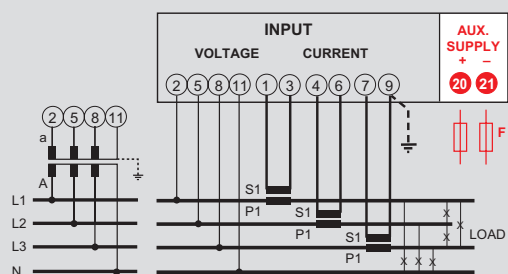
3-phase network, 3 wire



3-phase network, 4 wire, 1 System



3-phase network, 4 wire



Multifunction meters

Flush mounting multifunction for low, medium and high voltage



IF96001



IF96002



IF96015



IF96018

Connection via CT for single and three-phase network, 3 or 4-wires.
Phase sequence correction, diagnostic.

Can be accessorised with up to 4 additional modules.

Functions

- Phase and linked voltage
- Min. and max. phase voltage
- THDV
- Voltage Harmonic analysis
- Voltage crest factor
- Phase angle between voltage
- Neutral and phase current
- Current demand and current max. demand
- Average current
- THDI
- Current Harmonic analysis
- Current crest factor
- Phase angle between current
- Active, reactive phase power
- Power demand and power max. demand
- Positive and negative active and reactive energy
- Power factor
- Phase angle between current and voltage
- Frequency
- Run hour meter, count start with voltage or power present

Cat. Nos.	Nemo 96 HD+			
	Input (A)	Input* (V)	Auxiliary supply	Output
MF96021	1 + 5	80...690	80...265Vac 100...300Vdc	up 4 additional modules
MF96022	1 + 5	80...690	16...60Vdc	up 4 additional modules

* Three-phase input 80...690, Single -phase input 230V

Cat. Nos.	Additional modules
	Descriptions
IF96001	Module RS485 Modbus RTU/TCP
IF96012	Module RS485 Modbus RTU/TCP + memory
IF96002	Module RS232 Modbus RTU/TCP
IF96007A	Module Profibus EN50170 - DP0
IF96009	Module LonWorks
IF96013	Module M-Bus EN1434-3
IF96014	Module RS485 BACnet MS-TP
IF96015	Module Ethernet
IF96018 ¹	Radio transmitter module 868 MHz
IF96003	Module with 2 energy pulse outputs (SPST)
IF96004	Module with 2 x 0/4...20mA analogue outputs
IF96005	Module with 2 alarm relay outputs (SPST)
IF96006	Neutral current measurement from CT /1A or 5A programmable
IF96016	Module temperature measurement 2 inputs from PT100
IF96010	Module with 2 input SPST-NO 2 relay outputs SPST-NO

¹ Complete with power unit, pen-type steerable aerial + extension cable of 20cm. A transceiver gateway IFMTR01 must be provided. on RS485

Technical features

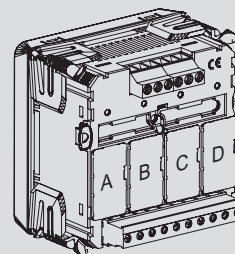
TECHNICAL NOTES	NT904
INPUT	
Three-phase voltage (V)	80...690 (phase-phase)
Single-phase voltage (V)	230V
Current rating	1A - 5A
External CT ratio	max 50kA/5A - max 10kA/1A
External VT ratio	primary voltage max 150kV
Continuous overload	1,2In
Istantaneous overload	20Imax/0,5s
Reference frequency	50Hz
Frequency tolerance	45...63Hz
Type of measurement	true RMS
Voltage rated burden (VA)	≤ 0,1VA (phase-neutral)
Current rated burden (VA)	≤ 0,2VA (for phase)
AUXILIARY SUPPLY	
Rated value Uaux	80...265Vac
Reference frequency	50
Frequency tolerance	45...63Hz
Rated burden	≤ 2,5VA (230Vac backlight 30% without external modules)
Rated value Uaux	100...300Vdc 11...60Vdc
Rated burden	≤ 3,5W (without modules)
ACCURACY	
CONFORMITY ACCURACY WITH EN/IEC 61557-12	- voltage: cl.0,5 - Current: cl. 0,5 - Active energy: cl.0,5 - Reactive energy cl.2 - Active power cl.05 - Reactive power cl.1 - Apparent power cl.1 - Frequency cl.0,5 - Power factor cl.0,5 - THD cl.2
DISPLAY	
Type of display	LCD backlighted
Digit height	8/12mm
Energy resolution	depending on the CT/VT ratio**
MECHANICAL FEATURES	
Housing	flush mounting (panel cutout 92x92mm)
Front frame	96x96mm
Housing material	self-extinguishing polycarbonate
Protection degree	IP20 terminals/ IP54 front frame
Connections type	screw terminals
Rigid cable	max 4,5mm ²
Flexible cable	max 2,5mm ²
ENVIRONMENTAL CONDITIONS	
Nominal temperature range	-5...55°C
Limit range for storage and transport	-25...70°C
Suitable for tropical climates	yes
Max.power dissipation*	≤5W

* for switchboard thermal calculation

** kCT*kVT	MAXIMUM DISPLAY
1...9	999999,99kWh/kvarh
10...99	9999999,9kWh/kvarh
100...999	99999999kWh/kvarh
1000...9999	999999,99MWh/Mvarh
10000...99999	9999999,9MWh/Mvarh
100000...400000	99999999MWh/Mvarh

Output

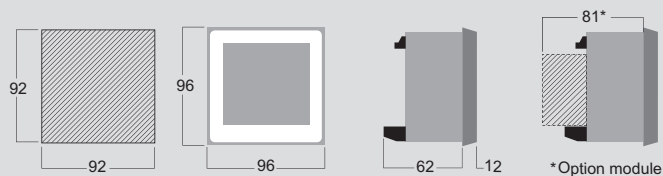
ADDITIONAL MODULES	
N. max installable module	1
Installation position	A-B-C-D



Multifunction meters

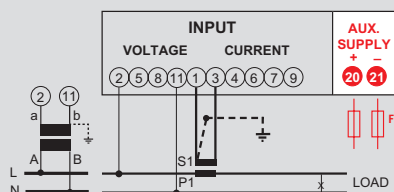
Flush mounting multifunction for low, medium and high voltage

Dimensions

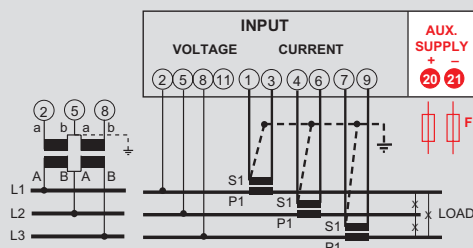


Wiring diagrams

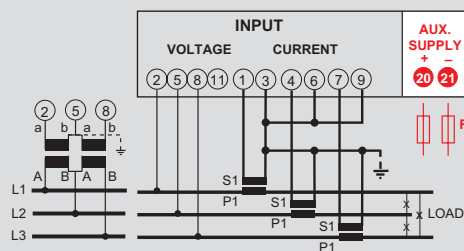
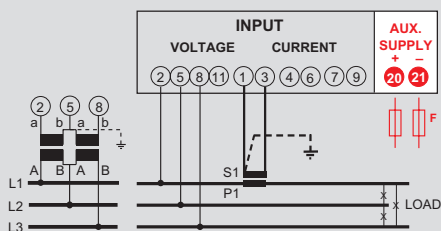
Single phase network



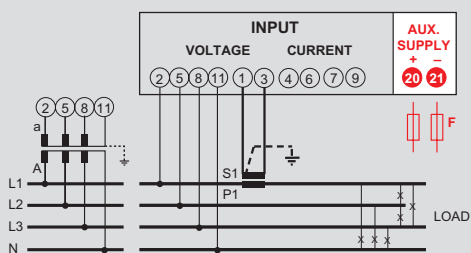
3-phase network, 3 wire



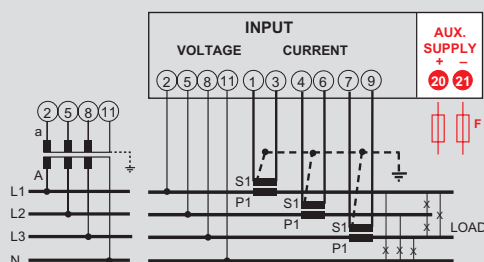
3-phase network, 3 wire, 1 System



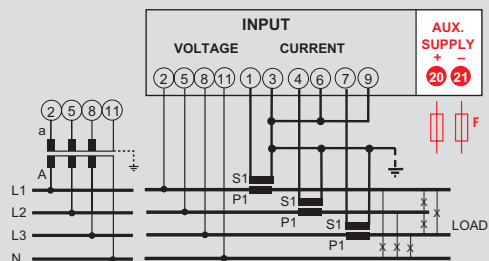
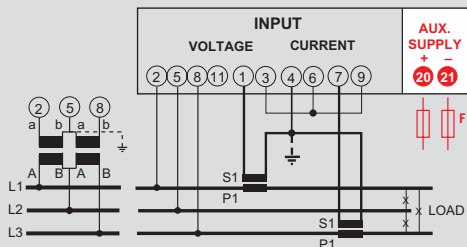
3-phase network, 4 wire, 1 System



3-phase network, 4 wire



3-phase network, 4 wire (ARON L1-L3)



Multifunction meters

Additional modules for NEMO 96 multifunction



IF96001



IF96012



IF96002



IF96007A



IF96009



IF96013



IF96014



IF96015



IF96018



IF96003



IF96004



IF96005



IF96006



IF96016



IF96010



IF96011

Cat. Nos.

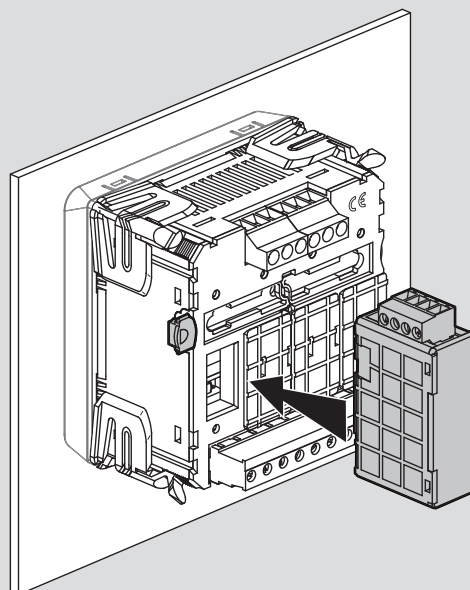
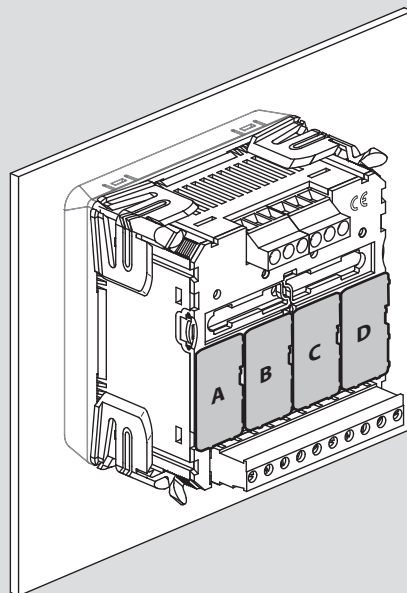
Additional modules

Descriptions

IF96001	Module RS485 Modbus RTU/TCP
IF96012	Module RS485 Modbus RTU/TCP + memory
IF96002	Module RS232 Modbus RTU/TCP
IF96007A	Module Profibus EN50170 - DP0
IF96009	Module LonWorks
IF96013	Module M-Bus EN1434-3
IF96014	Module RS485 BACnet MS-TP
IF96015	Module Ethernet
IF96018 ¹	Radio transmitter module 868 MHz
IF96003	Module with 2 energy pulse outputs (SPST)
IF96004	Module with 2 x 0/4...20mA analogue outputs
IF96005	Module with 2 alarm relay outputs (SPST)
IF96006	Neutral current measurement from CT /1A or 5A programmable
IF96016	Module temperature measurement 2 inputs from PT100
IF96010	Module with 2 input SPST-NO 2 relay outputs SPST-NO
IF96011	Module with 2 input 12/24Vcc 2 relay outputs SPST-NO

¹ Complete with power unit, pen-type steerable aerial + extension cable of 20cm.
A transceiver gateway IFMTR01 must be provided. on RS485

Additional modules installation



Multifunction meters

Additional modules for NEMO 96 multifunction - Selection table

							
Cat. Nos.	Technical notes	Descriptions	n°max installable	Installation position	NEMO 96HDL E	NEMO 96HD	NEMO 96HD+
COMMUNICATION MODULES ¹							
IF96001	NT675	RS485 Modbus RTU/TCP	1	A	•	•	•
IF96012	NT704	RS485 Modbus RTU/TCP + memory	1	A	•	•	•
IF96002	NT676	RS232 Modbus RTU/TCP	1	A	•	•	•
IF96007A	NT682	Profibus EN50170 - DP0	1	A	•	•	•
IF96009	NT684	LonWorks	1	A	•	•	•
IF96013	NT707	M-Bus EN1434-3	1	A	•	•	•
IF96014	NT743	RS485 BACnet MS-TP	1	A	•	•	•
IF96015	NT785	Ethernet	1	A	•	•	•
IF96018 ²	NT856	Radio transmitter module 868 MHz	1	A			•
OUTPUT MODULES							
IF96003	NT677	2 energy pulse outputs (SPST)	2	A - B - C - D		•	•
IF96004	NT678	2 x 0/4...20mA analogue outputs	2	C - D		•	•
IF96005	NT679	2 alarm relay outputs (SPST)	2	A - B - C - D		•	•
MEASUREMENT MODULES							
IF96006	NT683	Neutral current measurement from CT /1A or 5A programmable	1	C		•	•
IF96016	NT810	Temperature measurement 2 inputs from PT100	1	D		•	•
I/O MODULE							
IF96010	NT702	2 input SPST-NO 2 relay outputs SPST-NO	2	C - D		•	•
IF96011	NT703	2 input 12/24Vcc 2 relay outputs SPST-NO	2	C - D		•	

¹ Communication modules are as an alternative to them

² Complete with power unit, pen-type steerable aerial + extension cable of 20cm. A transceiver gateway IFMTR01 must be provided. on RS485

Note

[illegible]



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