

ME631 Three-phase Power Meter Data Sheet



Display

Maximum value measured		
Parameter	Range	Resolution
Voltage	0.001V 999.9V 999.9kV 999.9MV	0.1
Current	999.9A 999.9kA	0.1
Power	999.9kW 999.9MW	0.1
Power factor	0.999	0.001
THD	99.9%	0.1%
Energy	999.9WH 999.9.KWH 999.9MWH 999.9GWH	0.1

Specifications

Connectivity advantages		
MODEL	ME631P22	ME632P12
Support Extra sensor	333mV CT Rogowski coil	
Programmable digital output	Alarm 3 Tariff	
I/O function	2*digital output 2*digital input	
Power	85~265V AC/DC	12VDC
Option	1GB SD card option (save intervals 10mins default)	

Instantaneous rms Values	
Voltage	U, UTH2, UTH3, UTH4(Per Phase,AVG)
Current	I,ITHD2, ITHD3, ITHD4(Per Phase,AVG)
Power	P,FQ,S,PF(Per Phase,SUM)
Energy	EP,EQ,ES,Freq(Per Phase,SUM) over 999.9GWh,value reset
UTHD(%)	UTHD,THD2,THD3,THD4(Per Phase,AVG)
ITHD(%)	ITHD,THD2,THD3,THD4(Per Phase,AVG)
Update rate	
Data acquisition rate	400ms
Display update rate	0.5s
Energy storage interval (prevent losing energy when power off)	10mis(default)
Calibration	
Current	Per phase,all
Voltage	Per phase,all
Power factor	Per phase,all
Energy	Reset to " 0" EP,EQ,ES all phase

Feature

Specification	
Model	ME631
Product component type	Multifunction power meter
Poles description	3PH4W 3PH3W 1PH2W (L-N) 1PH2W(L-L) 1PH3W(L-L-N)
Device application	Power analysis Tariff meter
Input type	External CT(333mV only) External Rogowski coil
Display	2.0 inch TFT screen display
Sampling rate	8k samples per second
Mounting mode	Clip-on
Mounting support	DIN rail
Harmonic	52th Max
Display characteristics	
Dimensions (VA)	39mm x 32mm
Display resolution	220 x 170 dots
Mechanical characteristics	
Weight	212g
Dimension	L*W*D:76*95*71mm

MODBUS RS485

Communication	
Transmission mode	RS485 port,Half duplex
RS485 link	2 wires
Communication protocol	MODBUS RTU
Settings	
Communication address	1 to 247 (default 1)
Baud rate(communication speed)	1200 to 57600 baud (default 9600)
Parity	Even(default),Old,None
Data bit	8
Stop bit	1

Certificate

Environmental conditions	
Operating temperature	-25°C to +55°C
Storage temperature	-40°C to +85°C
Humidity rating	5 to 95% RH at 50°C (non-condensing)
Pollution degree	2
Overvoltage category	III, for distribution systems up to 277/480VAC
Dielectric withstand	As per IEC61010-1, Doubled insulated front panel display
Altitude	3000m Max
IP degree of protection	IP20 conforming to IEC 60629
Colour	White
Contractual warranty	12months
EMC	
Electrostatic discharge	Level IV (IEC61000-4-2)
Immunity to radiated fields	Level III (IEC61000-4-3)
Immunity to fast transients	Level IV (IEC61000-4-4)
Immunity to surge	Level IV (IEC61000-4-5)
Conducted immunity	Level III (IEC61000-4-6)
Immunity to power frequency magnetic fields	0.5mT (IEC61000-4-8)
Conducted and radiated emissions	Class B (EN55022)
Standard compliance	
EN 62052-11, EN61557-12, EN 62053-21, EN 62053-22, EN 62053-23, EN 50470-1, EN 50470-3, EN 61010-1, EN 61010-2, EN 61010-031	

Port definition

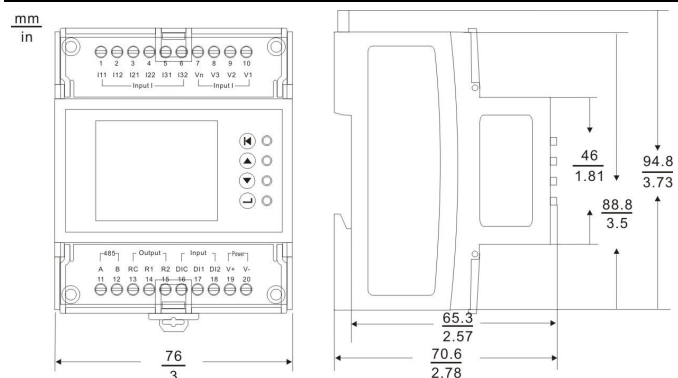
Port number	Port name	Port function	Remarks
1	I11	A-phase current input positive	A-phase current
2	I12	A-phase current input negative	
3	I21	B-phase current input positive	B-phase current
4	I22	B-phase current input negative	
5	I31	C-phase current input positive	C-phase current
6	I32	C-phase current input negative	
7	Vn	N-phase voltage input	Voltage input
8	V3	C-phase voltage input	
9	V2	B-phase voltage input	
10	V1	A-phase voltage input	
11	D0	RS485 A	RS485 communication
12	D1	RS485 B	
13	RC	Relay COM	Relay output
14	R1	Relay 1 output	
15	R2	Relay 2 output	
16	DIC	Digital input COM	Digital input
17	DI1	Digital input 1	
18	DI2	Digital input 2	
19	V+	POWER(-)	Power 12V DC OR 85~265V AC/DC
20	V-	POWER(+)	

NOTE:
- Subject to change without notice

Specification

Measurement accuracy	
Current	0.2% from 10% to 120%
Voltage	0.2% from 50V to 360V (Ph-N), from 80V to 620V (Ph-Ph)
Power factor	±0.005 from 10% to 120%
Active/Apparent Power	IEC62053-22 Class 0.5
Reactive power	IEC62053-21 Class 2
Frequency	0.01% from 45 to 65Hz
Active energy	IEC62053-22 Class 0.5s
Reactive energy	IEC62053-21 Class 2
Measurement arrange	
Measured voltage	50V to 360V AC (direct Ph-N) 80V to 620V AC (direct Ph-Ph)
Frequency range	50/60Hz
Input-current characteristics	
Primary current range	from 1.0 A to 9999A
Measurement input range	1/2 ²⁵ mV-333mV
Permissible overload	600mV for 10s/hours
Control Power	
AC/DC	ME631P22: 85 to 265V AC/DC, 3W
DC	ME631P12: 12VDC, 3W
Output	
Digital output	2 × digital output(2 ports), relay, rated 24V/800mA, 75m Ω max, 2.5kVrms insulation(controlled by Modbus) Maximum Switching Power : 0.5A, 125VAC 1A, 30VDC
Input	
Digital input	2×digital input(2 ports)
Wire diameter for terminals	
Connections-terminals	Screw terminals 2.5mm ² , interval 5.08mm
Alarm	
Setting	Each phase, AVG
Output form	Buzzer

Dimensions



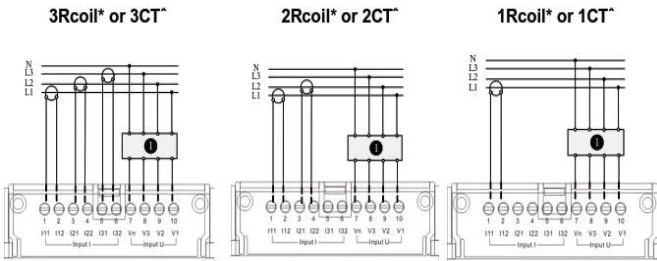
Wiring

*: Rogowski coil secondary output voltage can not over 333mV rms.

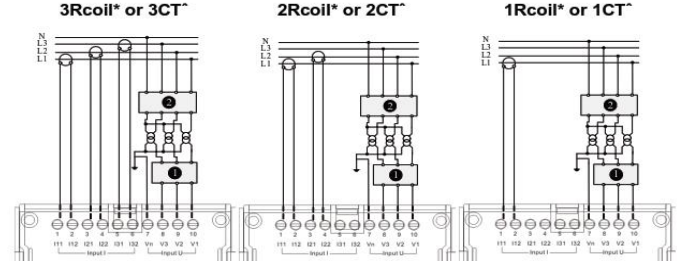
^: CT must be voltage output, secondary output can not over 333mV rms.

- ① 500mA fuses and disconnect switch
- ② VT primary fuses and disconnect switch

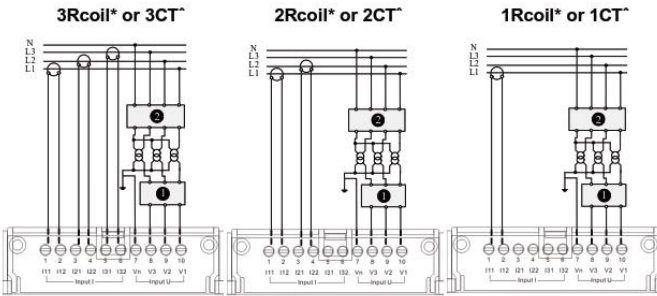
3PH4W no VT



3PH4W with VT

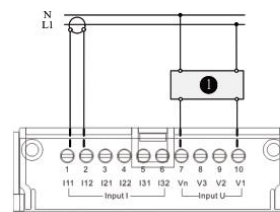


3PH4W with VT

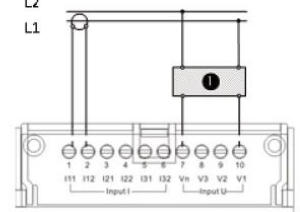


1PH2W

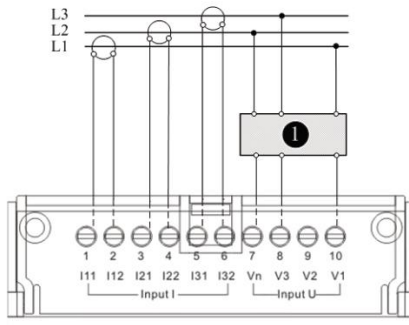
1PH2W L-N



1PH2W L-L

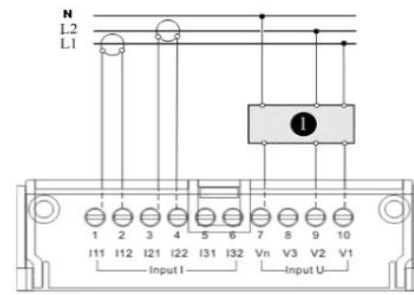


3PH3W no VT

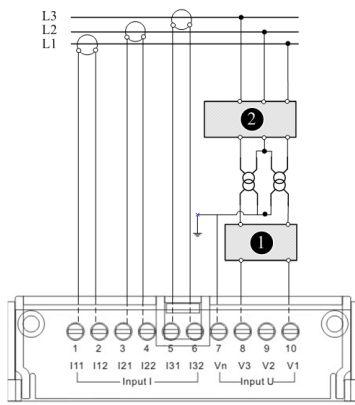


1PH3W

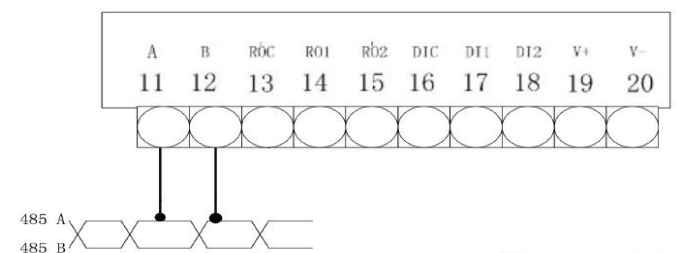
1PH3W L-L-N



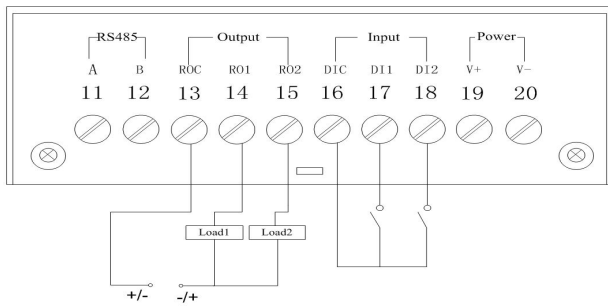
3PH3W with VT



ModBus communication Wiring diagram

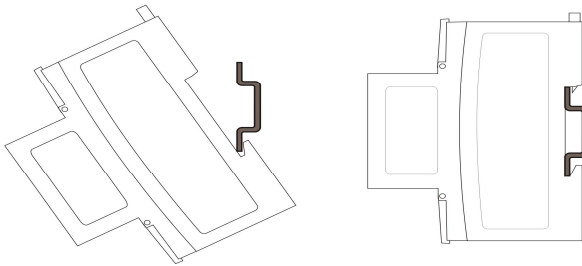


Input&output Wiring diagram

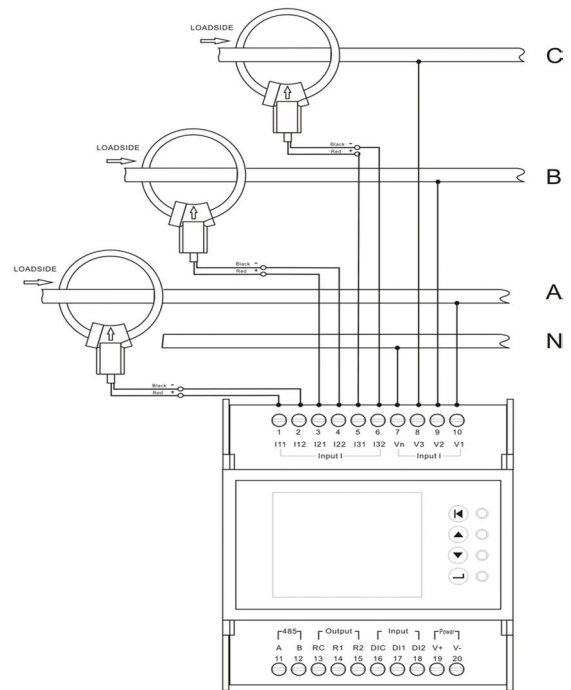


Noted: Input ports can't connect any LOAD

Installation



Rogowski coil connection



Rogowski Coil Specifications

*The input / output can be customized.

MODEL	PICTURE	PRODUCT	DESCRIPTION
Y-FCT		Flexible Rogowski coil	-Coil length:150/200/250/300/350mm -Window size:45/60/75/85/105mm -Section :8mm -Rated input:100A,200A,300A,400A,500A,800A,1000A,1500A,2000A,3000A -Output: 85mV/kA@50z , 102mV/kA@60Hz -Cable length:2 meter -Accuracy:±1% or 0.5% -Bandwidth:1Hz to 1MHz -Operation voltage < 1kV
FCT		Flexible Rogowski coil	-Coil length:420/510/620/800mm -Window size:125/155/195/245mm -Section :11mm -Rated input:800A,1000A,2000A,3000A,4000A,5000A,6000A~20kA -Output: 85mV/kA@ 50Hz , 102mV/kA@ 60Hz -Cable length:2 meter -Accuracy:±1% or 0.5% -Bandwidth:1Hz to 1MHz -Operation voltage < 1kV

Oder Code Sample :

Y-FCT-200 : Cable length 200mm, CL 1.0%

A-Y-FCT-200 : Cable length 200mm, CL 0.5%

FCT-420 : Cable length 420mm, CL 1.0%

A-FCT-200 : Cable length 200mm, CL 0.5%

Split Core CT Specifications

SCT Output is 0.333VAC

MODEL	PICTURE	DESCRIPTION
SCT-010		-Window size: 10mm -HxVxD : 40x23x26mm -Rated input: 0.2~80A, Max : 100A -Output: 333mVAC -Cable length:2 meter -Accuracy:±1% -Bandwidth: <400Hz -Operation voltage < 0.66kV
SCT-016		-Window size: 16mm -HxVxD : 46x32x31mm -Rated input: 0.2~100A, Max : 120A -Output: 333mVAC -Cable length:2 meter -Accuracy:±1% -Bandwidth: <400Hz -Operation voltage < 0.66kV

SCT-024		-Window size: 24mm -HxVxD : 65.4x46x35mm -Rated input: 10~200A, Max : 200A -Output: 333mVAC -Cable length:2 meter -Accuracy:±0.5% -Bandwidth: <400Hz -Operation voltage < 0.66kV
SCT-036		-Window size: 36mm -HxVxD : 85.2x57.5x41.4mm -Rated input: 10~300A, Max : 400A -Output: 333mVAC -Cable length:2 meter -Accuracy:±0.5% -Bandwidth: <400Hz -Operation voltage < 0.66kV