Elecnova

Digital
Intelligent
Power Distribution Solution

JIANGSU SFERE ELECTRIC CO., LTD.

Elecnova

JIANGSU SFERE ELECTRIC CO., LTD.

Add: No.1 Dongding Road, Jiangyin, Jiangsu, China
Tel: +86-510-86199063
E-mail: export@sfere-elec.com
http://www.sfere-elec.net

Paper made from
recycled material

Version: EN.S.2307

CONTENTS

Elecnova

◼ ABOUT US

As the leading digital power distribution solution provider, Sfere Electric are dedicating on systematic solutions of energy management, power monitoring, power quality, electrical safety and intelligent switchgear to smart grid users. Our businesses focus on smart building, utility, large-scale industrial enterprise, renewable energy, semiconductor, IDC, advanced material, petrochemical, transportation infrastructure, education and health care industries.

Sfere Electric integrate R&D, manufacturing, marketing and service, and have a complete product ecosystem from digital measuring terminals, intelligent switchgear to IoT Cloud platform. We provide reliable data services for energy saving, electrical safety and comprehensive energy management to empower smart energy management by digitization.

◼ CORPORATE CULTURE

Core Values

Create value for customers
Share value with employees
Contribute value to community

Corporate Vision

Build Sfere Electric as a top domestic supplier of power products and services focusing on comprehensive power applications.

Enterprise Spirit

Unity in a concerted effort
Honesty
Intelligence, innovation
Scientific development

Sfere Electric have participated in the formulation of a number of national and industrial standards; Hundreds of patents and more than 100 software copyrights have been gained by us; One of the first national intellectual property demonstration enterprises has been won by us. Our products passed CE, MID, UL and Russian metrological certification.
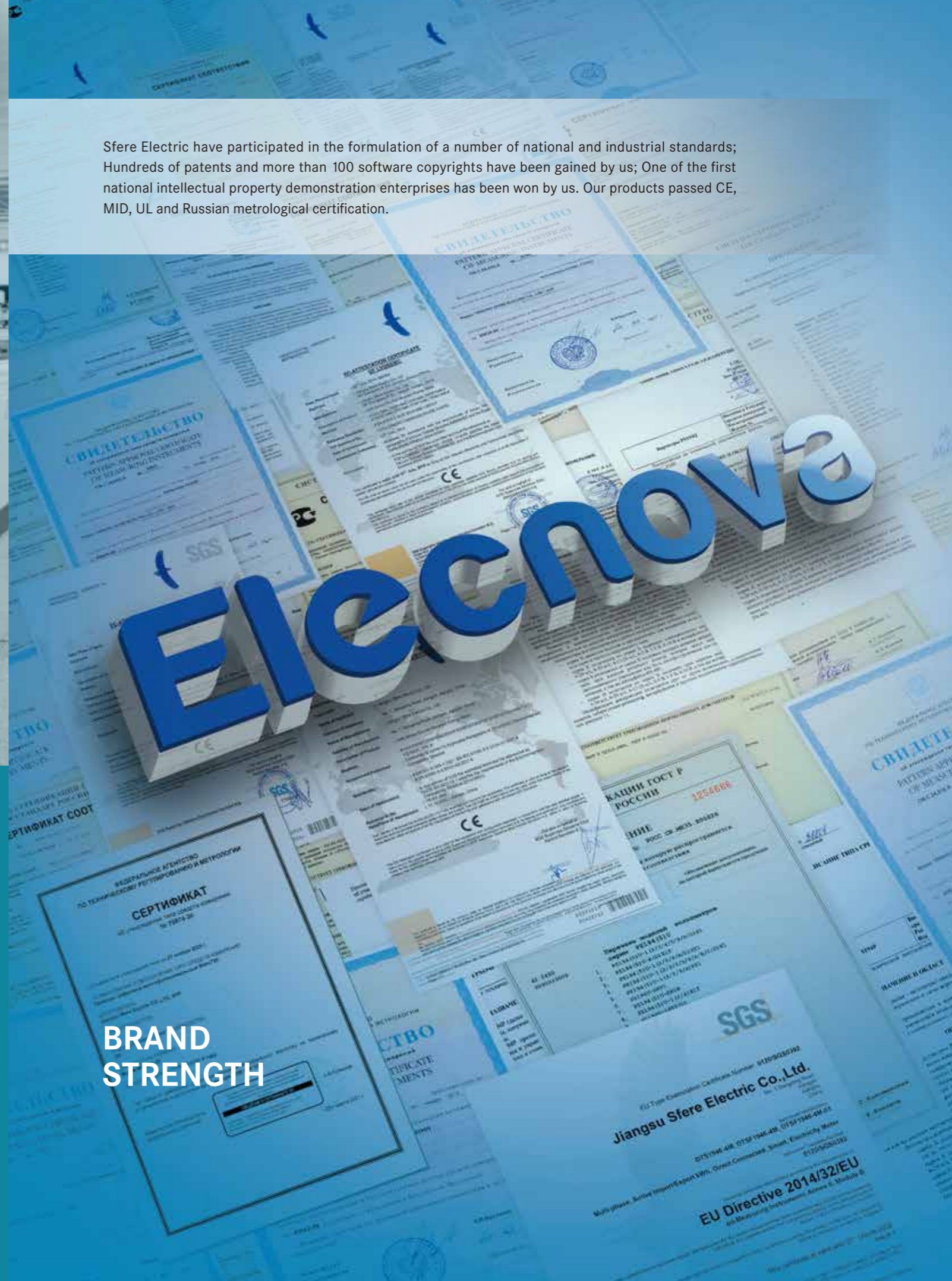
◼ MODERN MANAGEMENT

Sfere Electric are in the leading position in establishing ERP, MES and CRM systems in the industry to realize a completely systematic information management. We have developed a highly automatic production line and a capable R&D laboratory, which have made our product technology and quality reached the world advanced level.

BRAND STRENGTH

Digital Intelligent Power Distribution Solution Provider
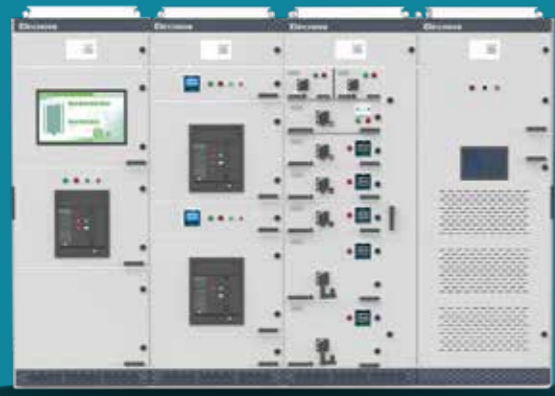
System Platform

Local Server   **Cloud Server**

4G   WiFi   MQTT

Communication Management

PRODUCT OVERVIEW

Power Monitoring

Power Quality Management

Modbus
MEMBER

PROFI BUS   PROFI NET

M-Bus

ASHRAE BACnet

LoRa

Digital Intelligent Power Distribution Solution Provider

MULTI-FUNCTIONAL
POWER METER

Digital Intelligent Power Distribution Solution Provider

http://en.sfere-elecnova.com

Elecnova   Elecnova   Elecnova   PD19MZ-9HY

FUNCTION

	Model	Sfere720	Sfere720B	Sfere720C	Sfere720E
Appearance	Display mode	TFT	LCD	LCD	LED
	Panel mounted	■	■	■	■
Accuracy	Active energy accuracy	0.2S	0.5S	0.2S	0.5S
	Reactive energy accuracy	2	2	2	2
Measurement	V/A/P/Q/S/PF/F	■	■	■	■
	Demand	■	■	■	■
	Max./ Min. value	■	■	■	■
	Neutral current	■	■	■	—
	Fundamental V/A/P/Q/S/PF	■	—	■	—
Energy Metering	Bi-directional energy	■	■	■	■
	Fourquadrant reactive energy	■	■	■	■
	Spare energy	■	■	■	—
	Tariff energy	■	■	■	—
	Fundamental energy	■	—	■	—
Power Quality	THD	■	■	■	■
	Harmonics V/A	2-63rd	2-51st	2-63rd	2-51st
	Sequence component	■	■	■	■
	Unbalance	■	■	■	■
	Crest and K factor	■	■	■	—
	Flicker	■	—	—	—
Data Log	Transient	■	—	—	—
	Hour meter	■	■	■	—
	Demand/ Max./ Min.record	■	■	■	■
	Off-imit record	■	■	■	—
	SOE record	■	■	■	—
	Memory	8MB	—	8MB	—
Input and Output	Energy pulse output	■	■	■	■
	RS485 port (Modbus-RTU)	■	■	■	■
	Digital inputs	2	2	2	—
	Relay outputs	2	2	2	—
Optional Module	FM2 (4 dry digital inputs)	□	—	□	—
	FM3 (2 relay outputs)	□	—	□	—
	FM4 (2 analog inputs)	□	—	□	—
	FM5 (2 temperature inputs)	□	—	□	—
	FM6 (2 analog outputs)	□	—	□	—
	FM7 (Modus-TCP)	□	—	□	—
	FM8 (Profibus-DP VO)	□	—	□	—
	FM11 (RS485, Modbus-RTU)	□	—	□	—
	FM13 (BACnet/MSTP communication)	□	—	□	—
	FM14 (BACnet/IP communication)	□	—	□	—
	FM17 (DNP3.0)	□	—	□	—
	FM18 (Dual-Ethernet)	□	—	□	—
	FM22 (Profinet)	□	—	□	—

NOTE： "■": Yes   "—": No   "□": Optional

Digital Intelligent Power Distribution Solution Provider

Elecnova

Sfere720
Sfere720C

8MB **0.2S** 〰️

IN **4 Tariffs** ▦ 👆

Memory 8MB
Energy Accuracy 0.2S
Harmonics
Neutral Current Input
4 Tariffs
Optional Modules
Capacitive Buttons

APPLICATIONS

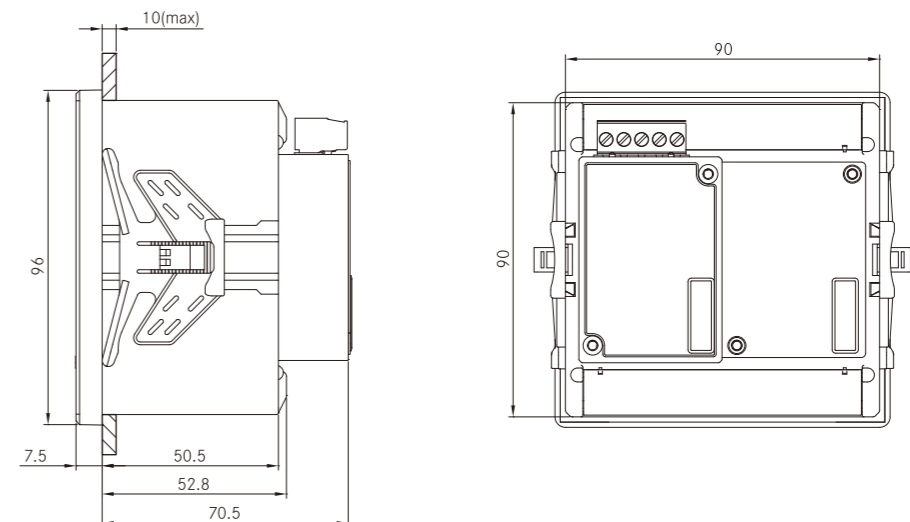Data Acquisition

Energy Management

Remote Power Monitoring

MAIN FEATURES

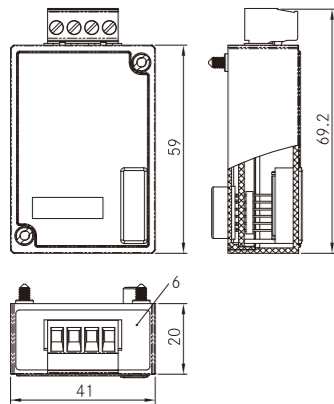◉ **Measuring**
-V/A/P/Q/S/PF/F
-Demand
-Max./Min.Value
-Load profile

◉ **Energy Metering**
-Bi-directional energy
-Four-quadrant reactive energy
-Tariff energy
-Fundamental energy

◉ **Power Quality**
-Harmonics up to 63rd
-Sequence component
-Unbalance
-Crest factor and K factor
-Phasor diagram

Extension Functions

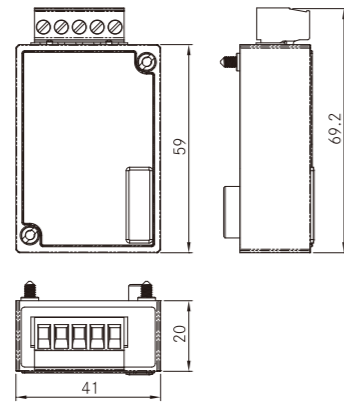|				
Modbus-TCP	Modbus-RTU	BACnet/IP	BACnet/MSTP	Profibus-DP
Profinet	Dual-Ethernet	DNP3.0	2 Relay outputs	2 Temperature inputs (PT100)
2 Analog outputs	4 DC digital inputs	2 Analog inputs (4-20mA)		

FUNCTION

◉ **Networks**
-TN, TT, IT networks

◉ **Communication**
-Modbus-RTU
-Modbus TCP
-Profibus-DP

◉ **Accuracy**
-Active energy: 0.2S
-Voltage: 0.1%
-Current: 0.1%

◉ **Data Log**
-Demand record
-Max./Min.value record
-Off-limit record
-SOE record

◉ **Power Quality**
-THD
-Harmonics up to 63rd
-Unbalance
-Sequence component
-Crest factor and K factor
-Waveform display
-Flicker
-Transient (Only Sfere720)

◉ **Optional Modules**
-FM2 (4 dry digital inputs)
-FM3 (2 relay outputs)
-FM4 (2 analog inputs)
-FM5 (2 temperature inputs)
-FM6 (2 analog outputs)
-FM7 (Modus-TCP)
-FM8 (Profibus-DP)
-FM11 (RS485, Modbus-RTU)
-FM13 (BACnet/MSTP communication)
-FM14 (BACnet/IP communication)
-FM17 (DNP3.0)
-FM18 (Dual-Ethernet)
-FM22 (Profinet)

DIMENSIONS

10(max)
90
96
90
7.5
50.5
52.8
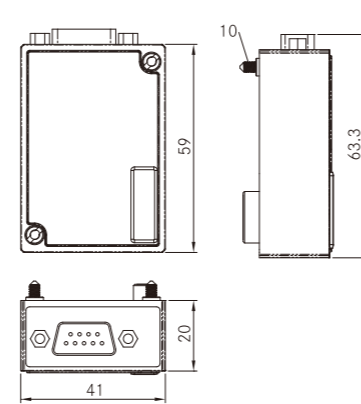70.5

Digital Intelligent Power Distribution Solution Provider

Elecnova

FM3/FM4/FM6/FM11/FM13　　　FM2/FM5　　　FM8

FM7/FM14/FM17　　　FM18　　　FM22

Relay Outputs | Digital Inputs | Energy Pulse | Communication | Power Supply
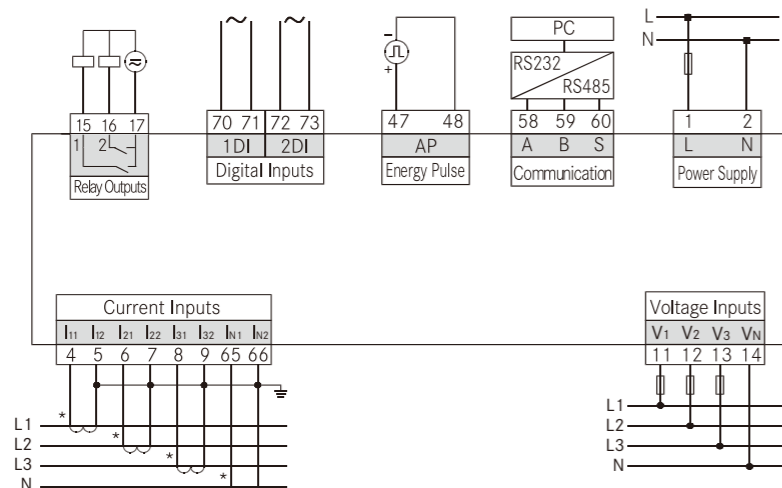
Current Inputs | Voltage Inputs
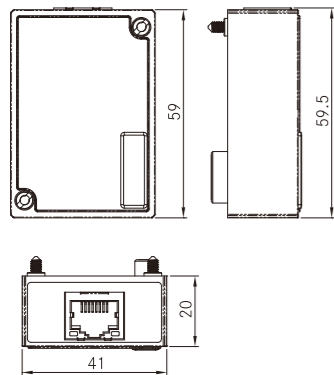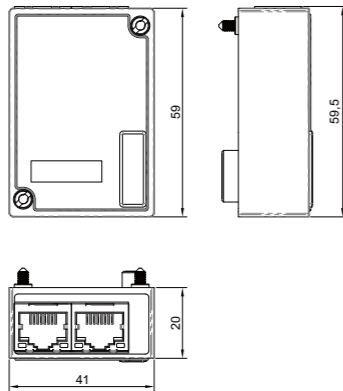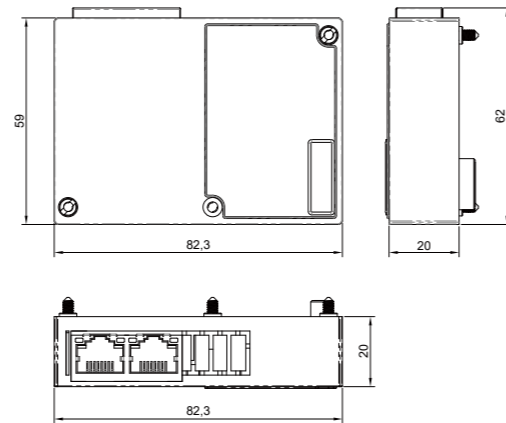
TECHNICAL SPECIFICATION

Display mode		Sfere720C: LCD, Sfere720: TFT
Accuracy	V/A	0.1%
	P/Q/S/PF	0.2%
	F	±0.01Hz
	±kWh	Class 0.2S
	±kvarh	Class 2
Voltage input	Rated value	AC 3*230/400V 3*100V etc.
	Overload	Continuous: 1.2Vn Instantaneous: 2Vn/10s
	Burden	≤0.1VA (per phase)
	Impedance	4MΩ
	Frequency	45Hz～65 Hz
Current input	Rated value	AC 1A, 5A
	Overload	Continuous: 1.2In Instantaneous: 2In/5s
	Burden	≤0.2VA (per phase)
	Impedance	≤20mΩ
Auxiliary supply	Working range	AC/DC 80~270V 50/60Hz
	Consumption	≤5VA
Communication port		RS485, Modbus-RTU, 2-wire, up to 38.4kbps
Energy pulse output		1 optocoupler output, pulse width (80±20%) ms
Digital input		2 AC 230V inputs, Isolation:5000V AC
Relay output		2 relay outputs, contact rated at AC 5A/250V or DC 5A/30V (AC 1), isolation:2000V AC
Ambient condition	Operating temperature	-25℃ – 70℃
	Relative humidity	≤93%
	Altitude	≤2500m
Insulation		≥2kVAC
IP degree		Front IP54, Rear IP20

Elecnova

Sfere720B

Modbus communication
Energy accuracy 0.5S
Pulse output
Harmonics
Neutral current inputs
4 tariffs
Data record

FUNCTION

◉ **Networks**
-TN, TT, IT networks

◉ **Accuracy**
-Energy: 0.5S
-Voltage: 0.2%
-Current: 0.2%

◉ **Communication**
-Interface:RS485
-Protocol:Modbus-RTU

◉ **Data Log**
-Demand record
-Max./Min. value record
-Off-limit record
-SOE record

◉ **Power Quality**
-THD
-Harmonics up to 51st
-Unbalance
-Sequence component
-Crest factor and K factor

APPLICATIONS

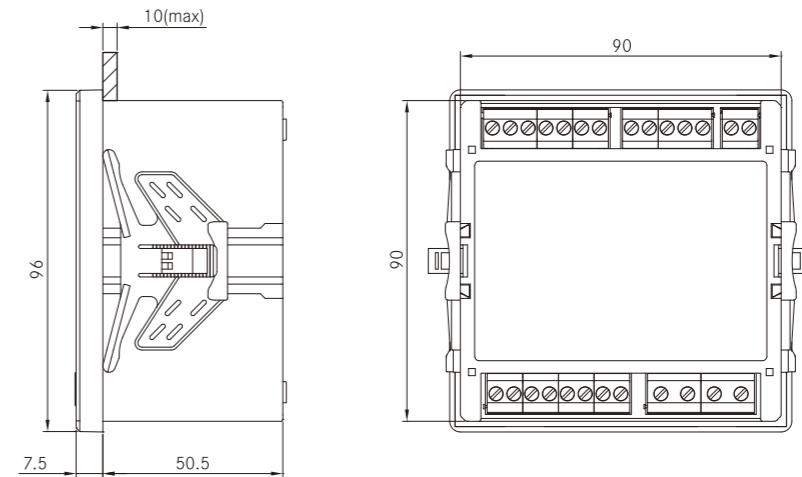**Data Acquisition**
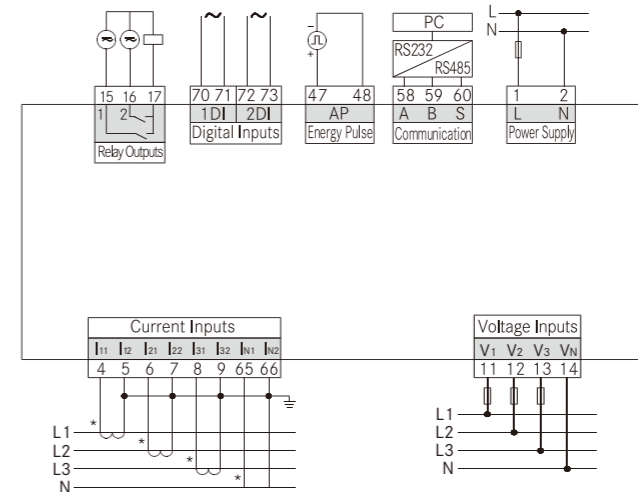
Energy Management

Remote Power Monitoring

MAIN FEATURES

◉ **Measuring**
-Demand
-Max./Min. Value

● **Energy Metering**
-Bi-directional energy
-4-quadrant reactive energy
-Tariff energy

◉ **Power Quality**
-Harmonics up to 51st
-Sequence component
-Unbalance
-Crest factor and K factor

DIMENSIONS

TYPICAL WIRING

Elecnova

Display mode		LCD
Accuracy	V/A	0.2%
	P/Q/S/PF	0.5%
	F	±0.01Hz
	±kWh	Class 0.5S
	±kvarh	Class 2
Voltage input	Rated value	AC 3*230/400V 3*100V etc.
	Overload	Continuous: 1.2Vn Instantaneous: 2Vn/10s
	Burden	≤0.1VA(per phase)
	Impedance	≥1.7MΩ
	Frequency	45Hz～65 Hz
Current input	Rated value	AC 1A, 5A
	Overload	Continuous: 1.2Vn Instantaneous: 2In/5s
	Burden	≤0.2VA(per phase)
	Impedance	≤20mΩ
Power supply	Working range	AC/DC 80~270V 50/60Hz
	Consumption	≤5VA
Communication		RS485, Modbus-RTU, 2-wire, up to 38400bps
Energy pulse output		1 optocoupler output, pulse width (80±20%) ms
Digital input		2 AC 230V inputs, Isolation:5000V AC
Relay output		2 relay outputs, contact rated at AC 5A/250V or DC 5A/30V (AC 1), isolation:2000V AC
Ambient condition	Operating temperature	-25～70℃
	Relative humidity	≤93%
	Altitude	≤2500m
Insulation		≥ AC 2kV
IP degree		Front IP54, Rear IP20

Sfere720E

Ultra-thin Design
Bracket Free Installation

FUNCTION

⊙ Networks
-TN, TT, IT networks

⊙ Accuracy
-Energy: 0.5S
-Voltage: 0.2%
-Current: 0.2%

⊙ Communication
-Interface: RS485
-Protocol: Modbus-RTU

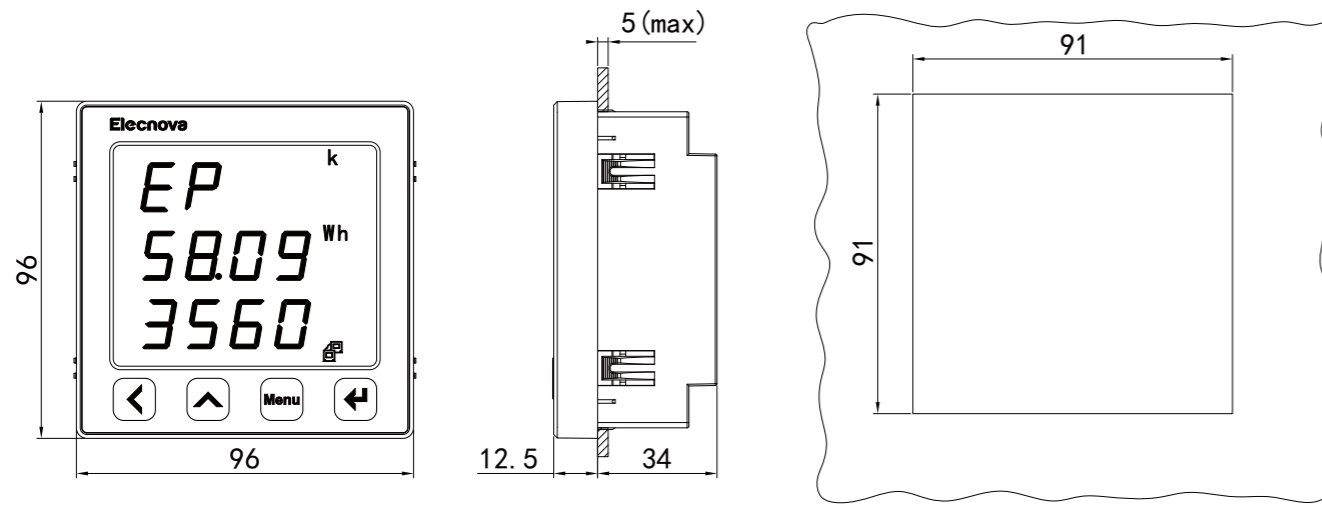**⊙ Power Quality**
-THD
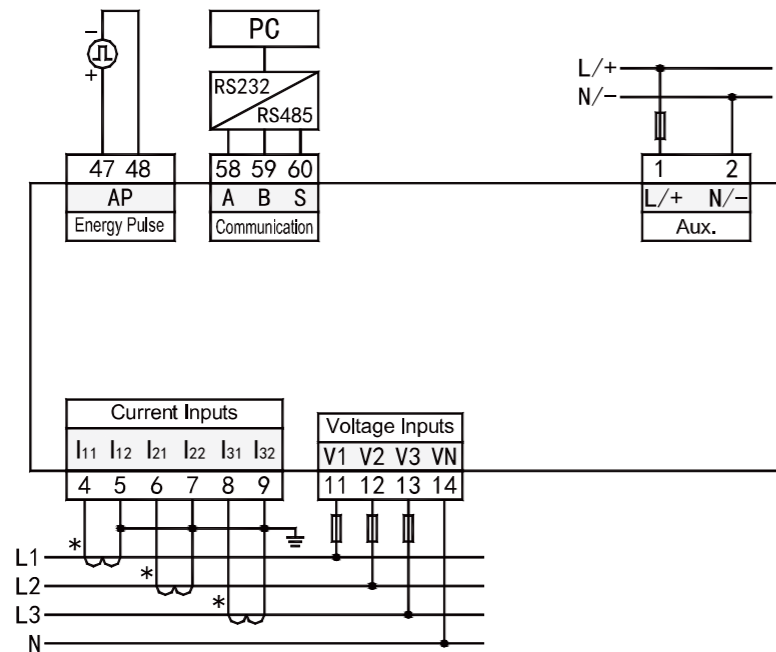-Harmonics up to 51st
-Unbalance

APPLICATIONS

Data
Acquisition

Energy
Management

Remote Power
Monitoring

DIMENSIONS

TYPICAL WIRING

TECHNICAL SPECIFICATION

Display		LED
Accuracy	V/A	0.2%
	P/Q/S/PF	0.5%
	F	±0.01Hz
	±kWh	Class 0.5S
	±kvarh	Class 2
Working power supply	Rated range	AC/DC 80~270V 50/60Hz
	Power consumption	≤5VA
	Withstand voltage	≥2kV
Voltage input	Range	AC 3*230/400V 3*100V etc.
	Resolution	0.1 V
	Impedance	≥1.7 MΩ / per phase
	Power consumption	≤0.1 VA / per phase
	Overload	Continuous: 1.2Vn Instantaneous: 2Vn/1min
	Frequency	45-65 Hz
Current input	Range	AC 1A, 5A
	Resolution	1 mA
	Impedance	≤20mΩ / per phase
	Power consumption	≤0.2 VA/ per phase
	Overload	Continuous: 1.2Vn Instantaneous：10In/5s
Energy pulse output	Pulse width	80ms±20%
	Max. terminal voltage	35V
	Max. terminal current	10mA
	Pulse frequency	≤10Hz
	Output object	Import active energy, import reactive energy
Communication interface	Physical interface	RS-485
	Communication speed	Up to 9600bps
	Communication protocol	Modbus-RTU
	Isolation voltage	2000V AC (1 min)
Ambient condition	Working temperature	-40°C — 70°C
	Relative humidity	≤95% RH, no condensation
	Working altitude	≤2500m
	Anti-pollution level	Non-corrosive gas
	Protection degree	Front case IP54, rear case IP20
	Insulation	≥2kV AC

Elecnova

PD194Z-9HY

Energy accuracy 0.5S
Pulse output
Harmonics

APPLICATIONS

Data Acquisition

Energy Management

Remote Power Monitoring
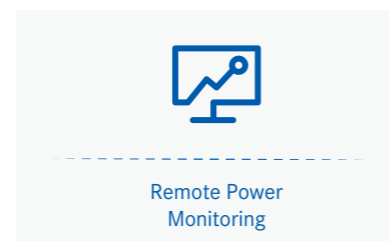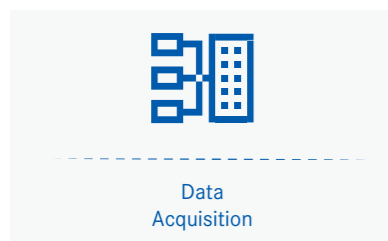
MODEL

Function		PD194Z-9HY	PD194Z-9HYE	PD194Z-9HYTR
Display method	3.8" LCD	■		
Real-time measurement	U, I, P, Q, S, PF, Hz	■		
	Demand	■		
	Max, Min, Average value	■		
	Residual current	–	–	1
	Temperature	–	–	6
Energy metering	Bi-directional active energy	■		
	Bi-directional reactive energy	■		
	Four-quadrant reactive energy	■		
	Tariff energy (6 sets)	■		
Power quality monitoring	THDi, THDu	■		
	Individual harmonic ratio	2-51st		
	Unbalance	■		
	Voltage crest factor	■		
	Current K factor	■		
Communication	RS485	1		
	Ethernet	–	1	–
Input/output	Digital input	6		
	Relay output	3	2	2
	Analog output	1	–	–
	Energy pulse output	1		
Other	Event records	■		
	Freezing data	■		
	Communication register address mapping	■		

NOTE: "■": Yes   "—": No

Elecnova

DEVICES

COMMUNICATION

MONITORING AND MANAGEMENT

PROJECTS

DIMENSIONS

108
96
96
10 (max)
91 +0.8 −0
91 +0.8 −0
13
65
83

TYPICAL WIRING

PC
RS485
RS232
59 58
B   A
Communication

+
−
48   47
AP
Energy Pulse

76 75 74 73 72 71 70
DI6 DI5 DI4 DI3 DI2 DI1 DIC
Digital Input

L
N
2   1
N   L
Power Supply

ETH

Analog Output
A0
30   31

Temperature Sensor
T1 T2 T3 T4 T5 T6

Relay Output
DO1 DO2 DO3
15 16 17 18 19 20

NTC

Current Input
I11 I12 I21 I22 I31 I32
4 5 6 7 8 9
L1
L2
L3

Residual Current Input
Ir
90 91

Voltage Input
V1 V2 V3 VN
11 12 13 14
L1
L2
L3
N

TECHNICAL SPECIFICATION

Voltage input	Rated value	AC 3*230/400V 3* 100V etc.
	Impedance	≥ 1.7 MΩ /phase
	Power consumption	≤ 0.1 VA /phase
	Overload	Continuous: 1.2Vn, Instantaneous: 2Vn/1min
	Frequency	45Hz-65Hz
Current input	Rated value	1A or 5A
	Startup value	10mA
	Resolution	1mA
	Impedance	≤ 20mΩ /phase
	Power consumption	≤ 0.2 VA/phase
	Overload	Continuous: 2In, Instantaneous: 20In/1s
Ambient condition	Operating temperature	-25℃ ~ +70℃
	Relative humidity	5%-95%RH, No condensation
	Working altitude	≤ 2000m
	Pollution degree	2
Mechanical features	Dimension	96mm×96mm×83mm
	IP	Front IP54, Back IP20
Security features	Measurement category	300V CAT III
	Safety	IEC 61010-1, Double insulation
Analog output	Number	1
	Type	4-20mA, 4-12-20mA
	Load capacity	≤ 350Ω
Relay output	Number	3（MAX）
	Contact rating	AC 250V/5A or DC30V/5A (AC1)
Digital input	Number	6
	Type	Dry contact, built-in DC 24V
Temperature measurement	Number	6
	Range	-20℃ ~ 140℃
	Accuracy	±2℃
Residual current	Number	1
	Rated Value	AC 1000mA/0.5mA
Auxiliary power	Voltage	AC/DC 80~270V 50/60Hz
	Power consumption	≤ 5VA
Communication interface	RS485 Port	Modbus-RTU, up to 38400bps
	Ethernet Modbus-TCP	Optional
Real time clock	Clock drift	≤ 0.5s/day
Standard	IEC 61557-12, IEC62053-22, IEC62053-23 , IEC 61010-1, IEC 61326-1	

Elecnova

PD194Z-9TY

PD194Z-9TY

0.5S | LCD | MODBUS

Dot-matrix LCD
Energy accuracy 0.5S
Modbus Interface
Harmonics

FUNCTION

⊙ **Networks**
  -TN, TT, IT networks

⊙ **Accuracy**
  -Energy: 0.5S
  -Voltage: 0.2%
  -Current: 0.2%

⊙ **Communication**
  -Interface: RS485
  -Protocol: Modbus-RTU

MAIN FEATURES

⊙ **Measuring**
  -Demand
  -Max./Min. Value

⊙ **Energy Metering**
  -Bi-directionAL energy
  -4-quadrant reactive energy
  -Tariff energy (Optional)

⊙ **Power Quality**
  -Harmonics up to 31st
  -Sequence component
  -Unbalance
  -Crest factor and K factor
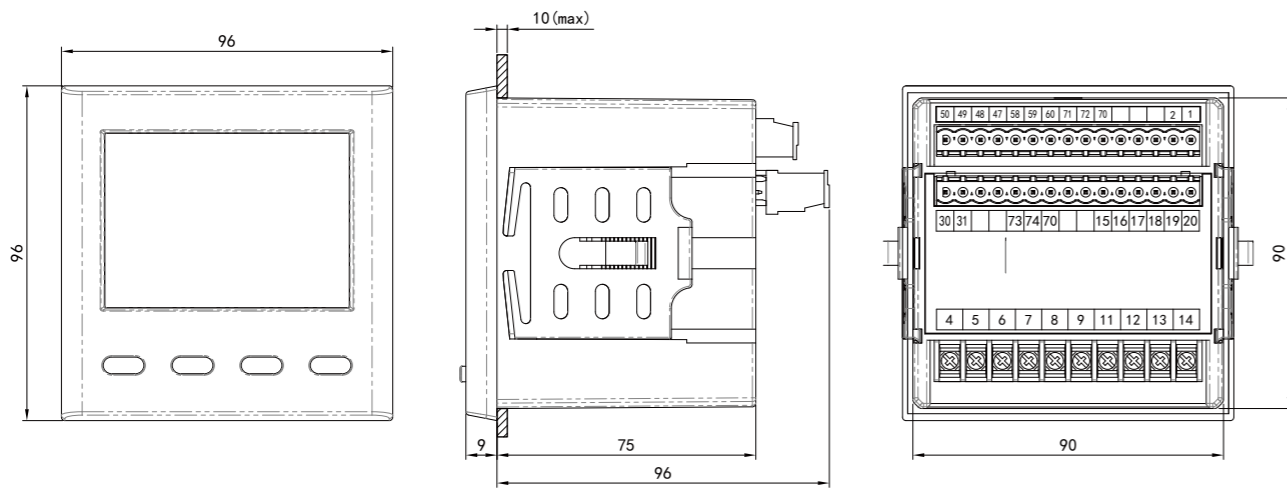
APPLICATIONS

Data Acquisition
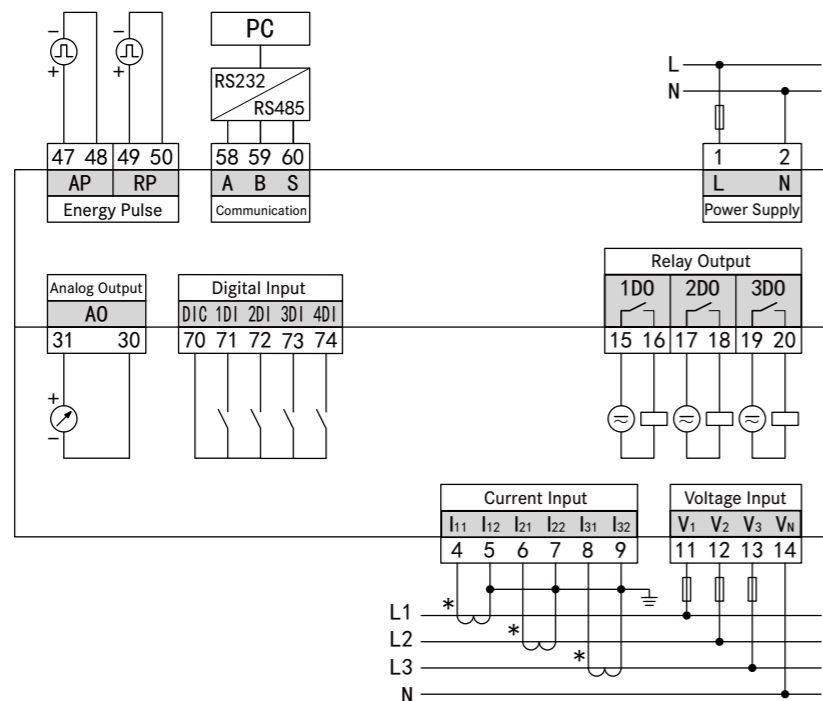
Energy Management

Remote Power Monitoring

MODEL

Model		PD194Z-9TY
Appearance	Display mode	Dot-matrix LCD
	Panel mounted	∎
Accuracy	Active energy accuracy	0.5S
	Reactive energy accuracy	2
Measuring	V/A/P/Q/S/PF/F	∎
	Demand	∎
	Max. / Min. value	∎
	Fundamental V/A	∎
Energy metering	Bi-directional energy	∎
	4-quadrant reactive energy	∎
	Tariff energy	□
Power quality	THDu, THDi	∎
	Harmonics content	2-31st
	Sequence component	∎
	Unbalance	∎
	Crest & K factor	∎
Data log	Demand/Max./Min. record	∎
	Off-limit record	∎
I/O	Energy pulse output	2
	RS485 port (Modbus-RTU)	1
	Relay output	3
	Digital input	4
	Analog output	1
Other	Meter & Load running time	∎

NOTE: "∎": Yes   "—": No   "□": Optional

Elecnova

DIMENSIONS

96

96

10 (max)

9

75

96

90

96

50 49 48 47 58 59 60 71 72 70 | 2 1

30 31 | 73 74 70 | 15 16 17 18 19 20

4 5 6 7 8 9 11 12 13 14

TYPICAL WIRING

PC

RS232 / RS485

47 48 49 50
AP RP
Energy Pulse

58 59 60
A B S
Communication

1 2
L N
Power Supply

L
N

Relay Output

1DO 2DO 3DO

15 16 17 18 19 20

Analog Output
AO
31 30

Digital Input
DIC 1DI 2DI 3DI 4DI
70 71 72 73 74

Current Input
I11 I12 I21 I22 I31 I32
4 5 6 7 8 9

Voltage Input
V1 V2 V3 VN
11 12 13 14

L1
L2
L3
N

TECHNICAL SPECIFICATION

Item			Parameters	
Accuracy			Voltage and current:0.2%	Power, Reactive power, Power Factor:0.5%
			Harmonics: Class A	Active energy: class 0.5S
			Reactive energy: class 2	Analog output: class 0.5
Display mode			LCD display	
Signal input	Wiring mode		3P3W, 3P4W	
	Voltage	Rated value	AC 3*230/400V 3* 100V etc.	
		Overload	Continuous: 1.2VIn, Instantaneous: 2VIn/10s	
		burden	≤0.1VA (each phase)	
		Rated value	≥1.7MΩ	
	Current	Rated value	AC 1A, 5A	
		Overload	Continuous: 1.2In, Instantaneous: 10In/5s	
		burden	≤0.1VA (each phase)	
		Rated value	≤20mΩ	
	Grid frequency		45-65 Hz, Accuracy: ±0.01Hz	
Power supply	Working range		AC/DC 80~270V 50/60Hz	
	consumption		≤5VA	
I/O	Energy pulse output		2 energy pulse outputs, optocoupler isolation	
	Communication port		1 RS-485 communication, Modbus-RTU protocol, Baud rate: 1200~19200bps	
	Digital input		4 digital input at most, dry contact mode	
	Digital output		3 relay outputs at most, AC250V/5A, DC30V/5A (AC1)	
	Analog output		1 analog output, 0/4~20mA or 4~12~20mA	
Ambient condition			−25~70℃, ≤93%RH, Non corrosive gas site, altitude≤2500m	
Safety	Insulation		Signal, power supply, output terminals to case resistance >100MΩ	
	Withstand voltage		Power supply, input and output >2kV	

LNF Series
Multi-function Meter

Real-time measurement
Switch status monitoring
Power quality monitoring
Limit alarm
Energy metering

FUNCTION

◉ **Networks**
-TN, TT, IT networks

◉ **Communication**
-Interface:RS485
-Protocol:Modbus-RTU

◉ **Accuracy**
-U , I , Class 0.2
-P , Q , PF Class 0.5
-kWh Class 0.5S

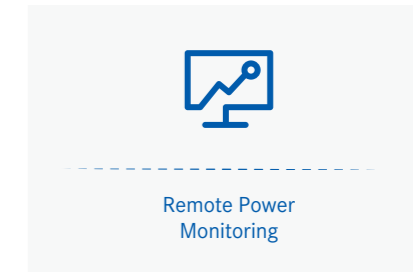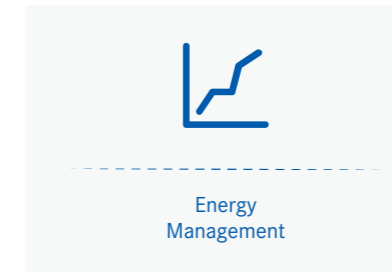## MAIN FEATURES

◉ **Measuring**
-Demand
-Max./Min. Value

◉ **Energy metering**
-Bi-directional energy
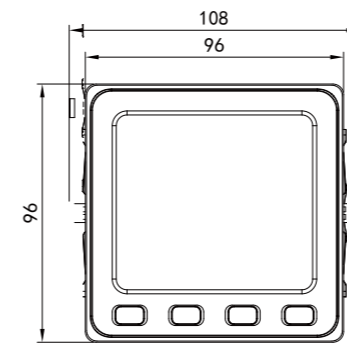-4-quadrant reactive energy
-Tariff energy (Optional)

◉ **Power quality**
-Harmonics up to 31st
-Sequence component
-Unbalance
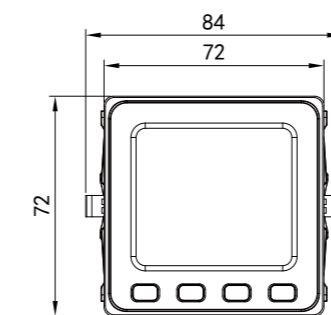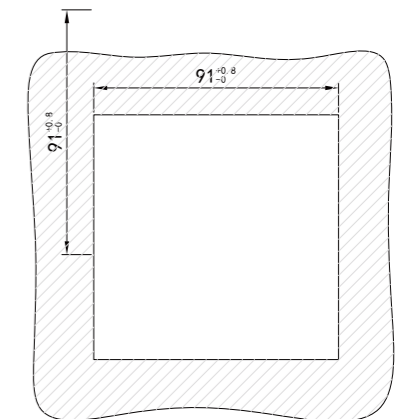-Crest factor and K factor

APPLICATIONS

Data
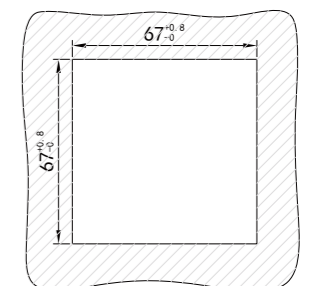Acquisition

Energy
Management

Remote Power
Monitoring

DIMENSIONS

LNF96 Series
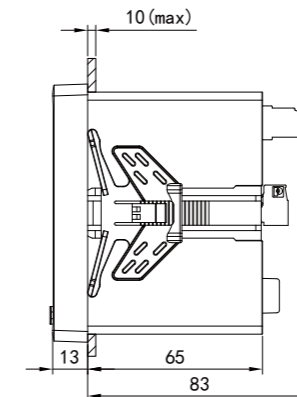
LNF72 Series
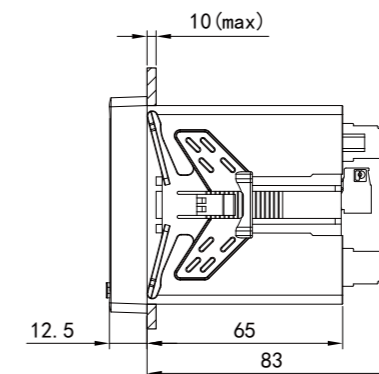
Function		LNF72EY-C / LNF96EY-C	LNF72EY-CJK / LNF96EY-CJK	LNF72EY-CMJKF / LNF96EY-CMJKF	LNF72E-C / LNF96E-C	LNF72E-CJK / LNF96E-CJK	LNF72E-CMJK / LNF96E-CMJK
Display method	Display	LCD	LCD	LCD	LED	LED	LED
Real-time measurement	U, I, P, Q, S, PF, Hz	■	■	■	■	■	■
	Demand	■	■	■	■	■	■
	Max, Min, Average value	■	■	■	■	■	■
Energy metering	Bi-directional active energy	■	■	■	■	■	■
	Bi-directional reactive energy	■	■	■	■	■	■
	Four-quadrant reactive energy	■	■	■	■	■	■
	Tariff energy (6 sets)	–	–	■	–	–	–
Power quality monitoring	THDi, THDu	■	■	■	■	■	■
	Individual harmonic ratio	2-31st	2-31st	2-31st	2-31st	2-31st	2-31st
	Unbalance	■	■	■	■	■	■
Communication	RS485	1	1	1	1	1	1
Input/output	Digital input	–	4	4	–	4	4
	Relay output	–	2	2	–	2	2
	Analog output	–	–	1	–	–	1
	Energy pulse output (LNF96 Series)	1	1	1	1	1	1
Others	Limit alarm	■	■	■	■	■	■
	Event records	–	–	■	–	–	■
	Freezing data	–	–	■	–	–	■
	Communication register address mapping	■	■	■	■	■	■

NOTE: "■": Yes   "–": No

Elecnova

DEVICES
COMMUNICATION
MONITORING AND MANAGEMENT
PROJECTS

Voltage input	Rated value	AC 3*230/400V 3* 100V etc.
	Startup value	10V
	Resolution	0.1 V
	Impedance	≥ 1.7 MΩ/phase
	Power consumption	≤ 0.1 VA /phase
	Overload	Continued: 1.2Vn, Instantaneous: 2Vn/1min
	Frequency	45Hz-65Hz
Current input	Rated value	AC 1A, 5A
	Startup value	10mA
	Resolution	1mA
	Impedance	≤ 20mΩ/phase
	Power consumption	≤ 0.2 VA/phase
	Overload	Continued: 2In,Instantaneous: 20In/1s
Ambient condition	Operating temperature	-25℃ - +70℃
	Relative humidity	5%-95%RH, No condensation
	Working altitude	≤ 2000m
	Pollution degree	2
Mechanical features	Dimension	96mm×96mm×83mm
	IP	Front IP54, Back IP20
Security features	Measurement category	300V CAT III
	Safety	IEC 61010-1, Double insulation
Analog output	Number	1
	Type	4-20mA, 4-12-20mA
	Load capacity	≤ 350Ω
Relay output	Number	2
	Contact rating	AC 250V/5A or DC30V/5A (AC1)

Digital input	Number	4
	Type	Dry contact, built-in DC 24V
Auxiliary power	Voltage	AC/DC 80~270V 50/60Hz
	Power consumption	≤ 5VA
Communication interface	RS485	Modbus-RTU
Real time clock	Clock drift	≤ 0.5s/day
Standard	IEC 61557-12, IEC62053-22, IEC62053-23 , IEC 61010-1, IEC 61326-1	

TYPICAL WIRING
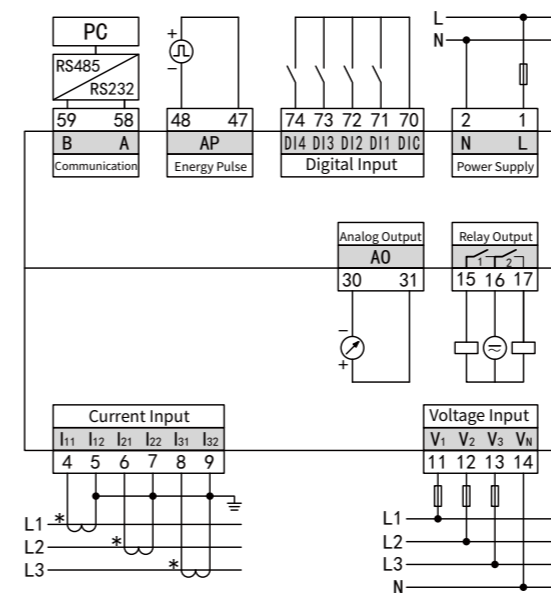
LNF96E/EY-CMJK
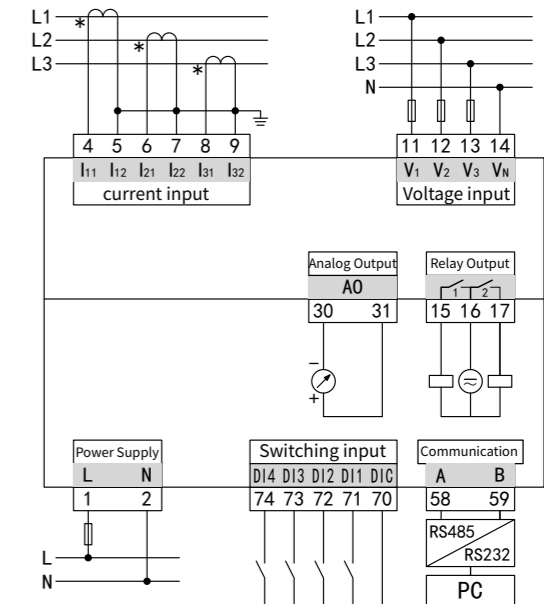
LNF72E/EY-CMJK

PD194Z-E200

Energy accuracy 0.5S
Pulse output
Harmonics

FUNCTION

◉ **Networks**
-TN, TT, IT networks

◉ **Accuracy**
-Energy: 0.5S
-Voltage: 0.2%
-Current: 0.2%

◉ **Communication**
-Interface: RS485
-Protocol: Modbus-RTU

MAIN FEATURES

◉ **Measuring**
-Fundamental V/A
-Demand
-Max./Min. Value
-Load profile

◉ **Energy Metering**
-Bi-direction energy
-4 quadrants reactive energy
-Tariff energy

◉ **Power Quality**
-Harmonics up to 51st
-Unbalance

## APPLICATIONS

Data Acquisition

Energy Management

Remote Power Monitoring

MODEL

Function		PD194Z-E200-CJK	PD194Z-E200-CJKTR
Display method	LCD	■	
Real-time measurement	U, I, P, Q, S, PF, Hz	■	
	Demand	■	
	Max, Min, Average value	■	
	Residual current	–	1
	Temperature	–	4
Energy metering	Bi-directional active energy	■	
	Bi-directional reactive energy	■	
	Four-quadrant reactive energy	■	
	Tariff energy (6 sets)	■	
Power quality monitoring	THDi, THDu	■	
	Individual harmonic ratio	2-51st	
	Unbalance	■	
	Voltage crest factor	■	
	Current K factor	■	
Communication	RS485	1	
Input/output	Digital input	4	
	Relay output	2	
	Energy pulse output	1	
Other	Event records	■	
	Freezing data	■	
	Communication register address mapping	■	

NOTE: "■": Yes   "–": No

DIMENSIONS
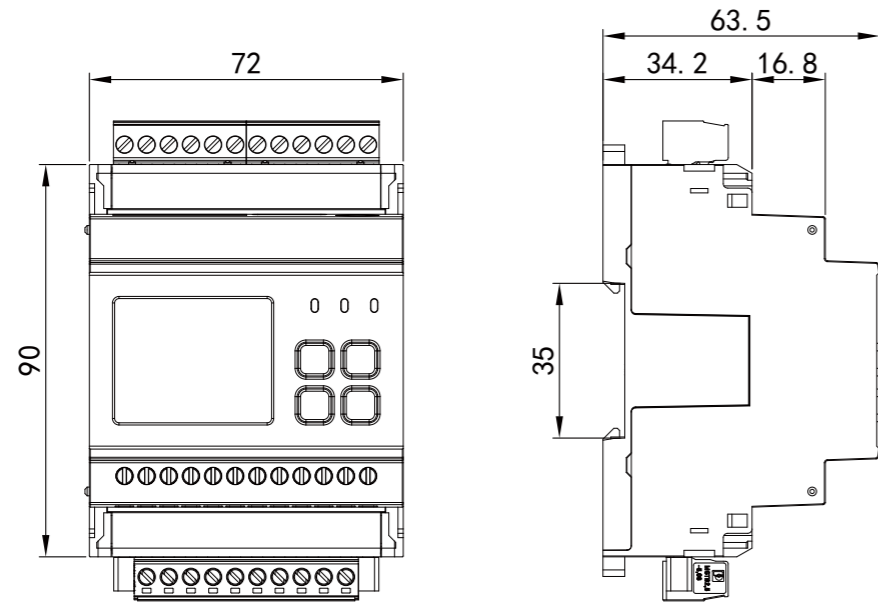
TYPICAL WIRING
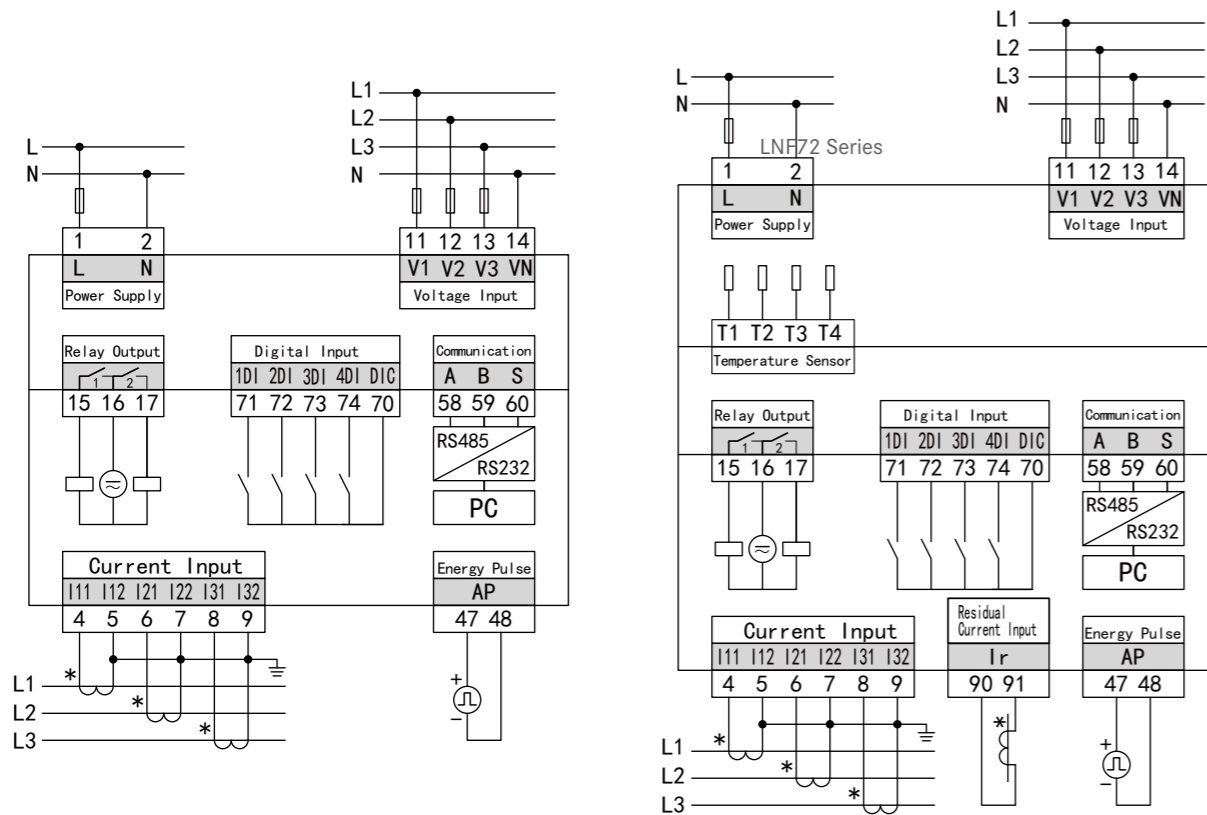
PD194Z-E200-CJK

PD194Z-E200-CJKTR

TECHNICAL SPECIFICATION

Voltage input	Rated value	AC 3*230/400V 3* 100V etc.
	Impedance	≥1.7 MΩ/phase
	Power consumption	≤0.1 VA /phase
	Overload	Continuous: 1.2Vn, Instantaneous: 2Vn/1min
	Frequency	45Hz-65Hz
Current input	Rated value	1A or 5A
	Startup value	10mA
	Resolution	1mA
	Impedance	≤20mΩ/phase
	Power consumption	≤0.2 VA/phase
	Overload	Continuous: 2In, Instantaneous: 20In/1s
Ambient condition	Operating temperature	-25°C - +70°C
	Relative humidity	5%-95%RH, No condensation
	Working altitude	≤2000m
	Pollution degree	2
	IP	IP20
Security features	Measurement category	300V CAT III
	Safety	IEC 61010-1, Double insulation
Relay output	Number	2
	Contact rating	AC 250V/5A or DC30V/5A (AC1)
Digital input	Number	4
	Type	Dry contact, built-in DC 24V
Temperature measurement	Number	4
	Range	-20℃~140℃
	Accuracy	±2℃
Residual current	Number	1
	Rated Value	AC 1000mA/0.5mA
Auxiliary power	Voltage	AC/DC 80~270V 50/60Hz
	Power consumption	≤5VA
Communication interface	RS485 Port	Modbus-RTU, up to 38400bps
	Ethernet Modbus-TCP	Optional
Real time clock	Clock drift	≤0.5s/day
Standard	IEC 61557-12, IEC62053-22, IEC62053-23 , IEC 61010-1, IEC 61326-1	

Elecnova

DIN RAIL MOUNTED
ENERGY METER

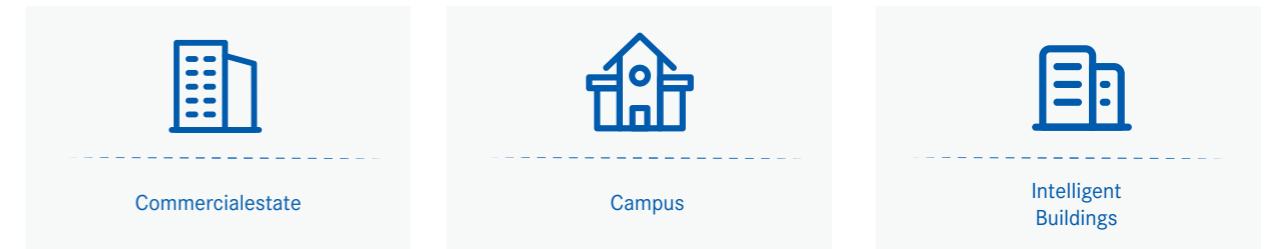Digital Intelligent Power Distribution Solution Provider

http://en.sfere-elecnova.com
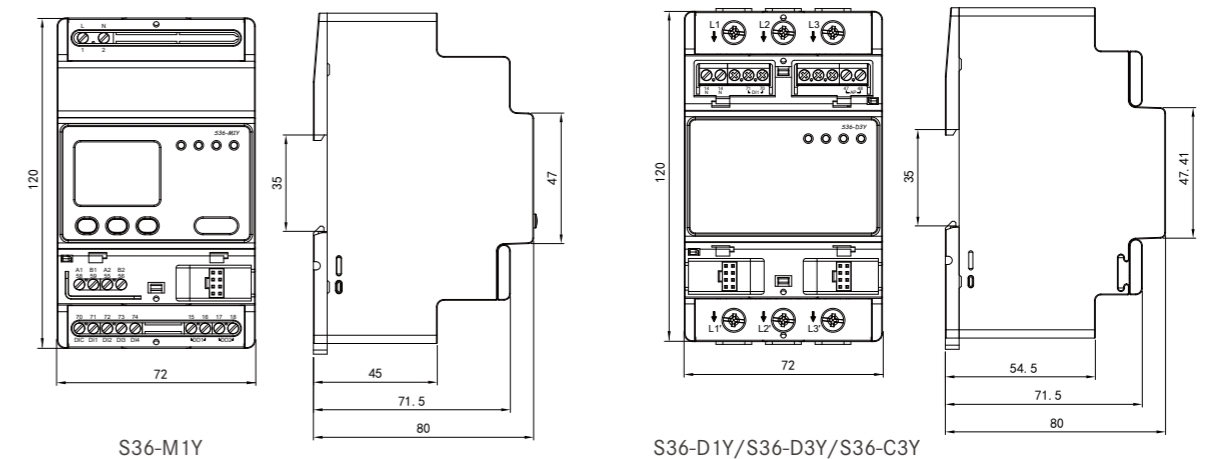
S36
Multi-users Prepaid Energy Meter

All-parameter measurement & Energy metering
Time-sharing billing & Prepayment
Demand statistics & Event record
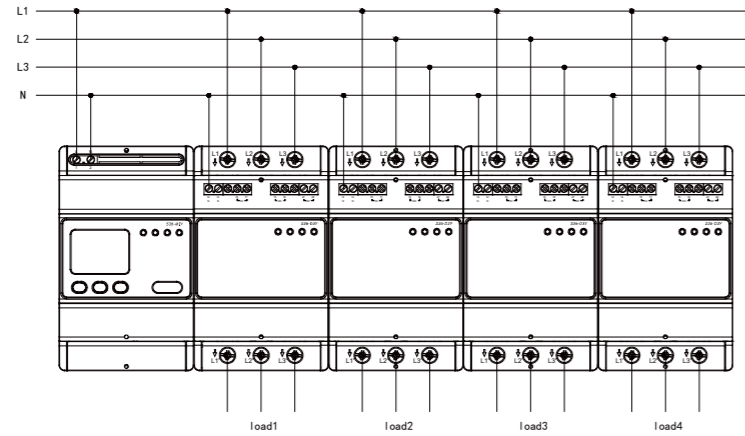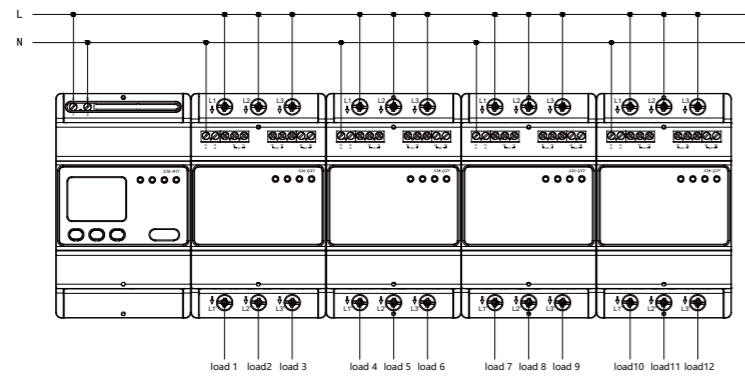Malignant load identification & Fault alarm

APPLICATIONS

Commercialestate

Campus

Intelligent Buildings

DIMENSIONS

120   35   47
72   45
71.5
80

S36-M1Y

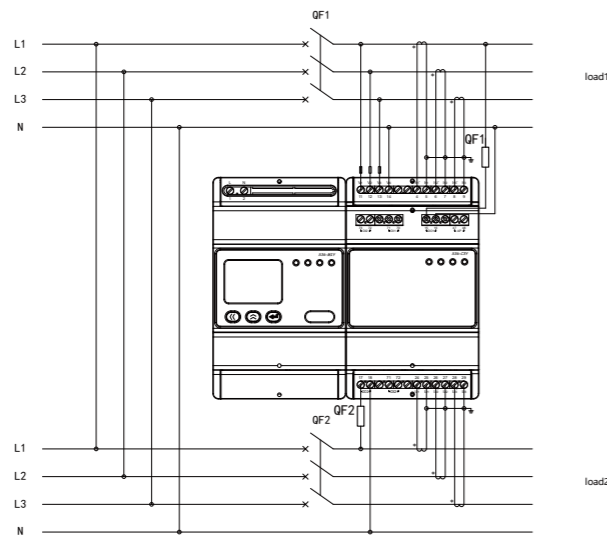120   35   47.41
72   54.5
71.5
80

S36-D1Y/S36-D3Y/S36-C3Y

Elecnova

S36 three-phase direct connection wiring diagram

S36 single-phase direct connection wiring diagram

S36 three-phase connection via CT wiring diagram

Main module		S36-M1Y		
I/O	Digital input	4 channels		
	Relay output	2 channels		
Communication	RS485 interface	2 channels		
	Ethernet interface	■		
Management function	Information query	■		
	Parameter configuration	■		
	Local switch on/off control	■		
Display mode	Dot matrix LCD, support multi-language option	■		

Measurement module		S36-D1Y	S36-D3Y	S36-C3Y
Wiring mode	Single-phase, direct	3	—	—
	Three-phase, direct	—	1	—
	Three-phase, via CT	—	—	2
Rated voltage	230V	■	—	—
	3×230/400V	—	■	■
Current		80A	80A	6A
Real-time measurement	U, I, P, Q, PF, Hz	■	■	■
Energy metering	Bi-directional energy	■	■	■
	Tariff energy	■	■	■
Freezing function	Instantaneous/agreed freezing	■	■	■
	Parameter/energy timing freezing	■	■	■
	Energy daily/monthly freezing	■	■	■
Management	Prepayment management	■	■	■
	Step tariff	■	■	■
	Malignant load identification	■	—	—
	Power-maintain in holiday	■	■	■
	Event record	■	■	■
I/O	Digital input	1 channel	1 channel	2 channel
	Relay output	3 channels	3 channels	4 channels

NOTE： "■": Yes   "—": No

Elecnova

Main module S36-M1Y

Working voltage	AC 3*230/400V

I/O characteristic

Digital input	Dry contact, built-in 24V power supply, Input resistance: conduction<10kΩ, disconnection >15kΩ
Relay output	Contact capacity: 5A/250 VAC; 5A/30 VDC

Communication characteristic

RS485 interface	Modbus-RTU protocol, baud rate up to 38400bps
Ethernet interface	Modbus-TCP protocol

Mechanical characteristic

Dimension	72×120×80mm
Protection degree	IP54 (Front case)

Ambient condition

Working temperature	-25°C - +70°C
Relative humidity	5%-95%RH, No condensation

Measuring module S36-C3Y

Accuracy		U, I: 0.2%; P: 0.5%; Hz:±0.01Hz; Active energy: 0.5S, Reactive energy: Class 2
Rated Voltage	Three-phase	AC 3*230/400V
Input current	Via CT	AC 3×1.5(6)A
Frequency		50/60 Hz
Wiring mode		3P4W
Consumption	Voltage circuit	< 0.2VA
	Current circuit	< 0.2VA
Start-up current	Access via CT	0.002Ib

I/O characteristic

Digital input	AC wet contact, ON: AC 180...270V, OFF:< AC 100V
Relay output	AC 250V/5A or DC 30V/5A (AC1)
Energy pulse	Pulse width 80ms±20ms

Mechanical characteristic

Dimension	72×120×80mm
Protection degree	IP54 (Front case)

Ambient condition

Working temperature	-25°C - +70°C
Relative humidity	5%-95%RH, No condensation

Elecnova

Measuring module S36-D1Y /S36-D3Y		
Accuracy		U, I: 0.2%; P: 0.5%; Hz:±0.01Hz; Active energy: Class 0.5S, Reactive energy: Class 2
Rated voltage	Three-phase	AC 3*230/400V
	Single-phase	AC 230V
Input current	Direct	AC 0.1-0.5(80)A
Frequency		50/60 Hz
Wiring mode		S36-D1Y: single-phase S36-D3Y: 3P4W
Consumption	Voltage circuit	< 1VA
	Current circuit	< 1VA
Start-up current	Access via CT	0.004Ib
I/O characteristic		
Digital input		AC wet contact, ON: AC 180...270V, OFF: < AC 100V
Relay output		Contact capacity: 90A/250V AC
Energy pulse		Pulse width 80ms±20ms
Mechanical characteristic		
Dimension		72×120×80mm
Protection degree		IP54 (Front case)
Ambient condition		
Working temperature		-25℃ – +70℃
Relative humidity		5%-95%RH, No condensation

DEVICES

COMMUNICATION

MONITORING AND MANAGEMENT

PROJECTS

DDS/DSS/DTS1946 Series

MODBUS

Modbus Interface
Progammable
DIN Rail Mounted

MAIN FEATURES

◎ **Measuring**
—Direct measurement up to 100A

◎ **Communication**
-Interface: RS485
-Protocol: Modbus-RTU

◎ **Energy Metering**
-Bi-directional energy
-Tariff energy

APPLICATIONS

Energy
Management

Sub-item
Metering

Power
Monitoring

Elecnova

Model		DDS1946-1P+	DDSF1946-1P+	DDS1946-2M	DDSF1946-2M	DDS1946-2P-M	DDSF1946-2P-M	DDS1946	DDSF1946	DDS1946-T	DDSF1946-T
Wiring Method		Up in down out						Down in down out			
Accuracy		Class 1	Class 1	Class B	Class B	Class 1	Class 1	Class 0.5	Class 0.5	Class 0.5S	Class 0.5S
Wiring		1P2W	1P2W	1P2W	1P2W	1P2W	1P2W	1P2W	1P2W	1P2W	1P2W
Voltage		230V	230V	230V	230V	230V	230V	230V	230V	230V	230V
Current	Direct	0.5-10(100)A	0.5-10(100)A	0.25-5(63)A	0.25-5(63)A	0.25-5(63)A	0.25-5(63)A	0.25-5(100)A	0.25-5(100)A	—	—
	Via CT	—	—	—	—	—	—	—	—	0.05-5(6)A	0.05-5(6)A
Measuring	Voltage	■	■	■	■	■	■	■	■	■	■
	Current	■	■	■	■	■	■	■	■	■	■
	Power	■	■	■	■	■	■	■	■	■	■
	Power factor	■	■	■	■	■	■	■	■	■	■
	Frequency	■	■	■	■	■	■	■	■	■	■
Energy Metering	±kWh	■	■	■	■	■	■	■	■	■	■
	Tariffs energy	—	■	—	■	—	■	—	■	—	■
Width(mm)		18	18	36	36	36	36	72	72	72	72
Communicaton	Modbus-RTU	■	■	■	■	■	■	■	■	■	■
	MBUS	—	—	—	—	■	■	—	—	—	—
Energy Pulse		—	—	■	■	■	■	■	■	■	■
Display Mode		LCD	LCD	LCD	LCD	LCD	LCD	LCD	LCD	LCD	LCD

NOTE: "■": Yes   "—": No

DEVICES

COMMUNICATION

MONITORING AND MANAGEMENT

PROJECTS

		DTS1946-4M (MID)	DTSF1946-4M (MID)	DTS1946-4M-T	DTSF1946-4M-T	DTS1946-4P-M	DTSF1946-4P-M	DTS1946-4P-TM	DTSF1946-4P-TM	DSS1946	DSSF1946	DSS1946-T	DSSF1946-T	DTS1946	DTSF1946	DTS1946-T	DTSF1946-T
Wiring Method		Up in down out							Down in down out								
Accuracy		Class B	Class B	Class 0.5S	Class 0.5S	Class 1	Class 1	Class 0.5S	Class 0.5S	Class 0.5	Class 0.5	Class 0.5S	Class 0.5S	Class 0.5	Class 0.5	Class 0.5S	Class 0.5S
Wiring		3P4W	3P4W	3P4W	3P4W	3P4W	3P4W	3P4W	3P4W	3P3W	3P3W	3P3W	3P3W	3P4W	3P4W	3P4W	3P4W
Voltage		3*230/400V	3*230/400V	3*230/400V	3*230/400V	3*230/400V	3*230/400V	3*230/400V	3*230/400V	3*400V	3*400V	3*400V	3*400V	3*230/400V	3*230/400V	3*230/400V	3*230/400V
Current	Direct	0.25-5(63)A	0.25-5(63)A	–	–	0.25-5(63)A	0.25-5(63)A	–	–	0.25-5(100)A	0.25-5(100)A	–	–	0.25-5(100)A	0.25-5(100)A	–	–
	Via CT	–	–	0.01-1(6)A	0.01-1(6)A	–	–	0.01-1(6)A	0.01-1. (6)A	–	–	0.01-1(6)A	0.01-1(6)A	–	–	0.01-1(6)A	0.01-1(6)A
Measuring	Voltage	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
	Current	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
	Power	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
	Power factor	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
	Frequency	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
	THD	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Energy Metering	±kWh	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
	Tariffs energy	–	■	–	■	–	■	–	■	–	■	–	■	■	■	–	■
Width(mm)		72	72	72	72	72	72	72	72	72	126	126	126	126	126	126	126
Communicaton	Modbus-RTU	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
	MBUS	–	–	–	–	■	■	■	■	–	–	–	–	–	–	–	–
Energy Pulse		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Display Mode		LCD	LCD	LCD	LCD	LCD	LCD	LCD	LCD	LCD	LCD	LCD	LCD	LCD	LCD	LCD	LCD

NOTE： "■": Yes   "—": No

DEVICES

COMMUNICATION

MONITORING AND MANAGEMENT

PROJECTS
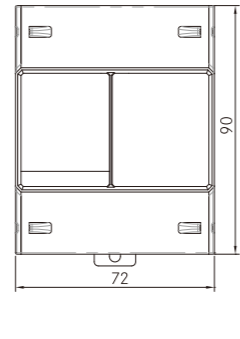
DIMENSIONS
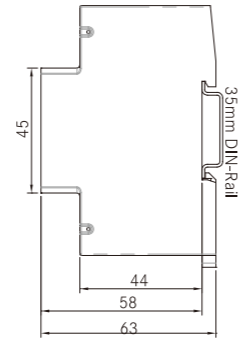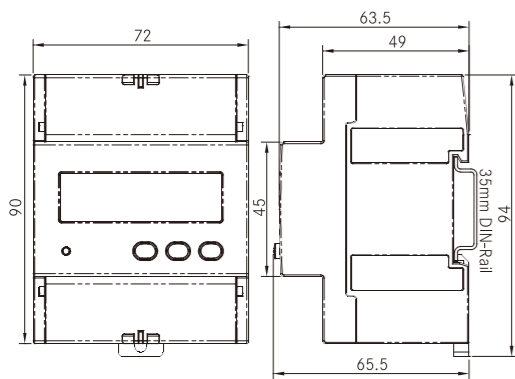
DDS 1946-1P+
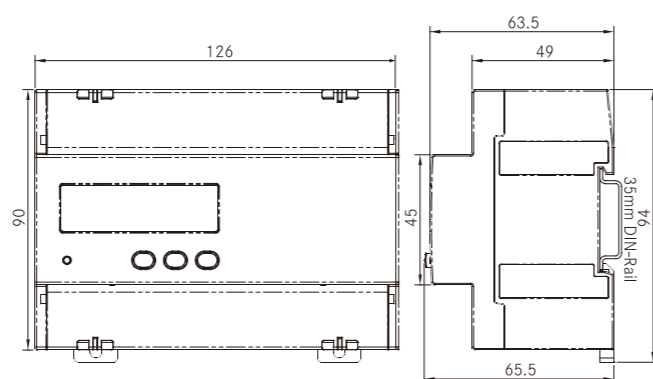DDSF 1946-1P+
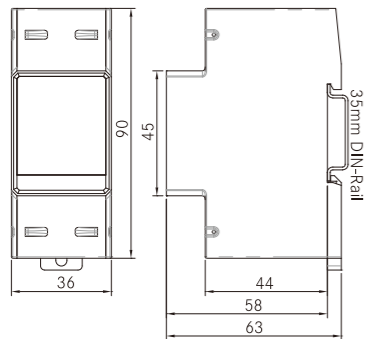
DDS(F) 1946-2M
DDS(F) 1946-2P-M

DTS(F) 1946-4M
DTS(F) 1946-4M-T

DTS(F) 1946-4P-M
DTS(F) 1946-4P-TM

35mm DIN-Rail

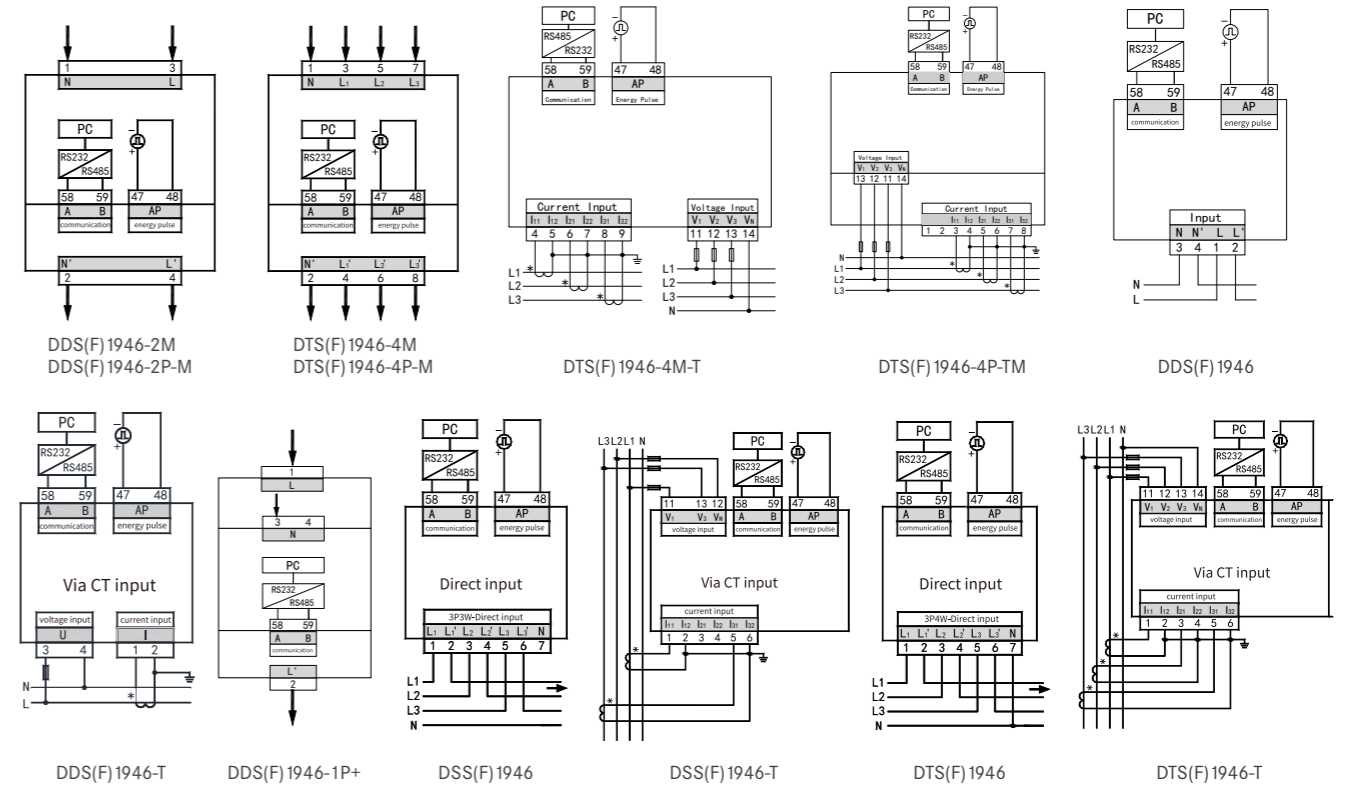DDS(F) 1946
DDS(F) 1946-T

DSS(F) 1946
DSS(F) 1946-T

DTS(F) 1946
DTS(F) 1946-T

TYPICAL WIRING

DDS(F) 1946-2M
DDS(F) 1946-2P-M

DTS(F) 1946-4M
DTS(F) 1946-4P-M

DTS(F) 1946-4M-T

DTS(F) 1946-4P-TM

DDS(F) 1946

Via CT input

Direct input

Via CT input

Direct input

Via CT input

DDS(F) 1946-T

DDS(F) 1946-1P+

DSS(F) 1946

DSS(F) 1946-T

DTS(F) 1946

DTS(F) 1946-T

TECHNICAL SPECIFICATION

Model		DDS/DSS/DTS 1946 Series
Normal voltage		230V, 3*400V, 3*230/400V
Frequency		45Hz~65 Hz
Voltage range		0.8Un~1.2Un
Start current	Direct input	0.004Ib
	Via CT input	0.001In
Consumption		< 4VA
Energy pulse		1 output, pulse width (80±20%) ms
RTC error		≤0.5s/day
Communication		RS485, Modbus-RTU/ MBUS protocol
IP degree		Front:IP51
Operating temperature		-25℃~55℃
Relative humidity		≤93%

MULTI-CIRCUIT
MONITORING SYSTEM

Digital Intelligent Power Distribution Solution Provider

http://en.sfere-elecnova.com

Sfere701

Specially designed for intelligent rack bus
Multi-circuit real-time measurement
Energy metering
Power quality monitoring
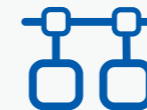Electrical safety monitoring

APPLICATIONS

Data
Center

Telecommunications

Rack Bus
Monitoring

Energy
management

Elecnova

Name	Model	Function
Display module	Sfere701-D10	To show measured data from measurement module, and be used to set parameter of measurement module.
Measurement module	Sfere701-M	Measure voltage, current, power, frequency, energy, demand, extreme value and harmonics of three-phase grid. 1 RS485 communication interface, 1 digital output, and external current transformers. Each module can be extended to one Sfere701-F.
Temperature module	Sfere701-F0	4-way temperature measurements.
Temperature & switch module	Sfere701-F1	4-way temperature measurements; 3-way digital input measurements.
Power supply module	Sfere701-P	Provide DC24V power supply to display and communication modules.

MODEL

Function		Sfere701-M1A
Real-time measurement	U, I, Hz, P, Q, S, PF	■
	Demand, max./ min. value, average value	■
Energy metering	Bi-direction energy, apparent energy	■
	Four-quadrant reactive energy	■
	Sub-phase energy	■
Power quality	THDu, THDi	■
	Individual harmonic ratio	2~31st
	Unbalance	■
	Crest factor, K factor	■
	Voltage deviation, frequency deviation	■
Data record	Demand record	■
	Max value, min value and average value record	■
	Off-limit alarm records	■

NOTE: "■": Yes

| Sfere701-M Ambient condition	
Working temperature	-20°C~70°C
Relative humidity	≤95%RH, no condensation
Working altitude	≤2000m
Protection	IP20
Insulation	Signal, power supply and output terminal to case resistance>100MΩ
Withstand voltage	≥2kV
Electromagnetic Compatibility	Better than Class III
Working power supply	
Rated range	AC/DC 80~270V 50/60Hz
Power consumption	≤0.5W
Voltage input	
Range	AC 3*230/400V
Resolution	0.1 V
Impedance	≥1.7 MΩ/phase
Consumption	≤0.1 VA /phase
Over-voltage	Continuous 1.2 times, Instantaneous: 2 times/10s
Frequency	45-65 Hz
Current input	
Range	External split-core/solid type CT
Communication port COM1	
Physical interface	RS485
Communication protocol	Modbus-RTU, up to 19200bps
Insulation voltage	4000 V AC
Communication port SBUS	
Physical interface	RS485
Communication port	Used to connect to Sfere701-F0/F1
Communication protocol	Modbus-RTU, up to 38400bps
Insulation voltage	4000 VAC

Elecnova

TECHNICAL SPECIFICATION

Sfere701-D10	Specification
Display	10.1" TFT LCD touch screen, resolution 1024*600
Protection	IP65(Front panel)
Working temperature	0℃~50℃
Relative humidity	≤90%RH (no condensation)
Working range	(24±20%)VDC
Consumption	6W

Sfere701-P	Specification
Input voltage	AC/DC: 80V~270V
Output voltage	DC: 24V
Output power	≤20W
Accuracy	±1%
Efficiency	≥75%
Withstand voltage	2000V AC

RACK BUS MONITORING SOLUTION

TYPICAL WIRING

| Sfere701-M1A + F0 | Sfere701-M1A + F0 | Sfere701-M1A + F0 |
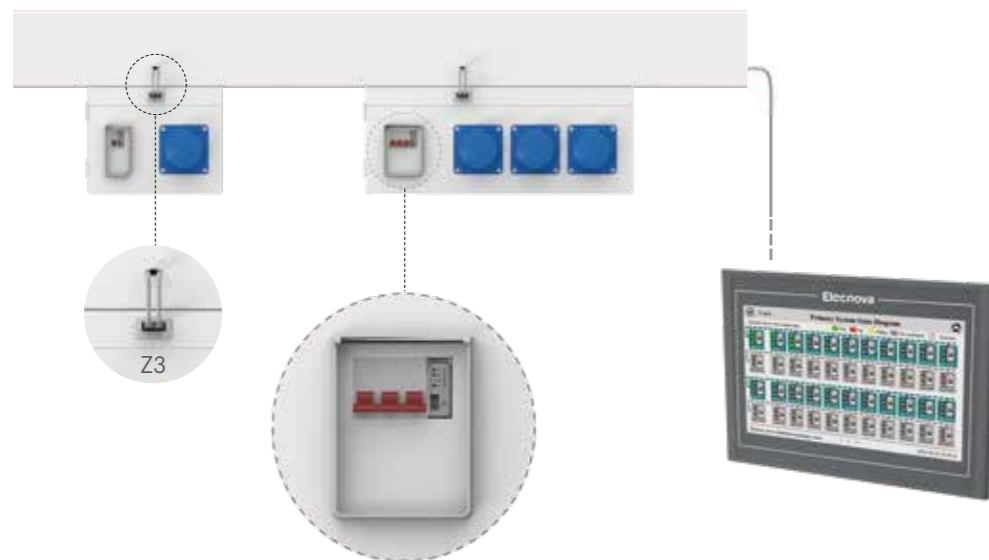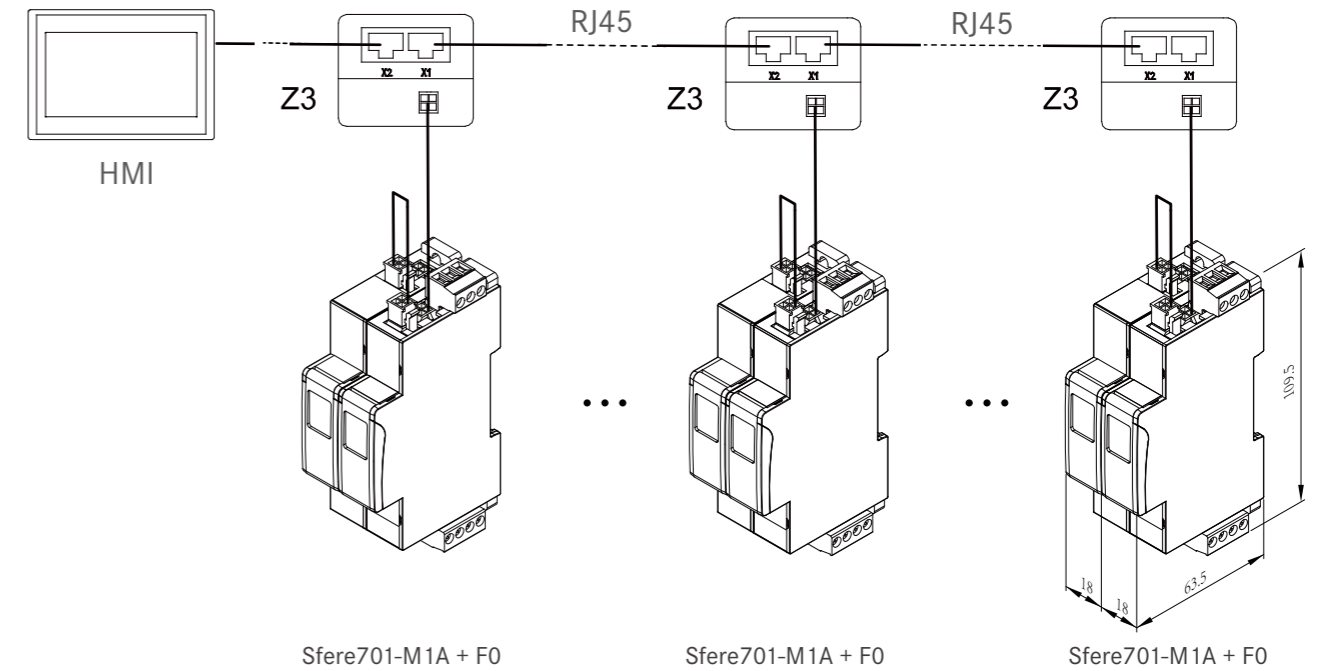
The measurement module can be equipped with various current transformers such as Solid-core CT, split-core CT, and Rogowski coil CT to adapt to various application scenarios.

| Solid-core CT | Split-core CT | Rogowski coil CT |
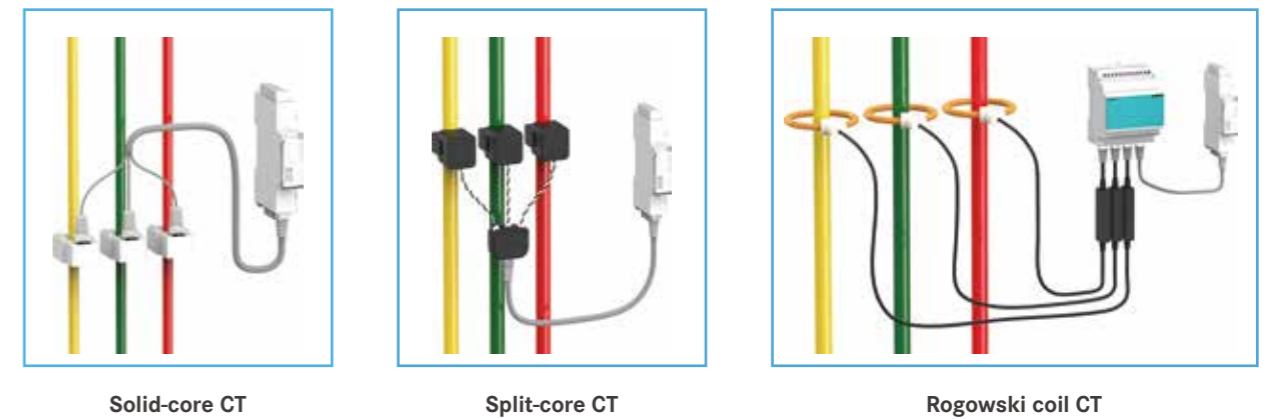
Solid-core CT components	T-BCTxx	High accuracy current measurement, optional rated values 5A, 100A.200A400A, 600A
Split-core CT components	T-SCTxx	Continuous electrical measurement, optional rated values 5A, 100A, 200A, 400A, 600A
Rogowski coil CT components	T-FCTxx	High current measurement, optional rated values of 600A, 1000A, 2000A, 3000A

CT MODEL

Solid-core CT

Model	SHI-BCT50	SHI-BCT100	SHI-BCT200	SHI-BCT400	SHI-BCT600
Aperture (mm)	8	18	24	29	29
Outline dimension (mm)	28x18x44	36x20x59	60x20x80	75x22.5x95	75x22.5x95

Split-core CT

Model	SHI-SCT50	SHI-SCT100	SHI-SCT200	SHI-SCT400	SHI-SCT600
Aperture (mm)	10	16	24	35	35
Outline dimension (mm)	31x38x43	36.5x40x50	51x47x70	57x41x84	67x52x83

Rogowski coil CT

Model	SHI-FCT600	SHI-FCT1000	SHI-FCT2000	SHI-FCT3000
Aperture (mm)	65	95	95	95

BCM101
Precision Power Distribution Monitoring Unit

Real-time measurement
Switch status monitoring
Power quality monitoring
Energy metering

SYSTEM STRUCTURE

BCM101 AC precision distribution monitoring unit is used to monitor electrical parameters of array cabinet, to measure electrical parameters such as voltage, current, energy and harmonics of inlet and outlet branches and to monitor the switch status of all circuit breakers in data center.

BCM101 is equipped with trip alarm function and over current alarm function which can be set in every output circuit by two-level users so as to prevent potential power failure.

BCM101 is configured with 7-inch human-machine interface and Ethernet communication interface which makes it simple to be connected to other systems.

Support to monitor 2 three-phase incoming circuits and 120 single-phase feeder circuits at most.

APPLICATIONS
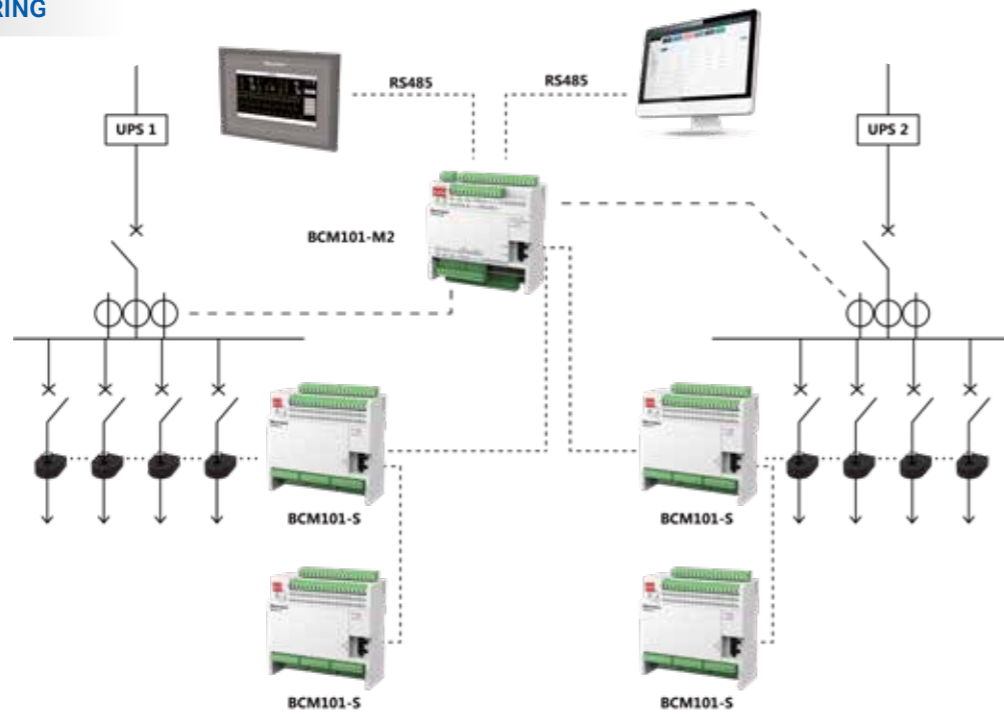
Data Center	Telecommunications	Power monitoring	Energy management

TYPICAL WIRING

FUNCTION

Name	Function
Main module (Incoming line monitoring module) **BCM101-M1** **BCM101-M2**	BCM101-M1 can measure the electrical parameters of one three-phase circuit, and BCM101-M2 canmeasure the electrical parameters of two three-phase circuits. The electrical parameters include voltagezero to earth voltage, current, power, frequency, energy, demand, extreme values, harmonics and temperature. The main modules are equipped with two RS485 communication ports, one Ethernet port foroption, four digital inputs and two relay outputs; they are also equipped with two busbar interfaces whictcan be connected with feeder monitoring module and switch monitoring module, The main modules canecord tariff energy and save the energy of ten years. They can record 1024 pieces of SOE event records1024 pieces of real-time alarm records and 12800 pieces of alarm records.
Slave module (Feeder monitoring module) **BCM101-S**	BCM101-S can measure the electrical parameters of thirty single-phase circuits. The electrical parameters include voltage, current, power, frequency, energy, demand, extreme values and harmonics. This module is equipped with busbar interface which is used to extend the module. It is also equipped with thirty digital inputs which can judge the opening and closing of circuit breaker through voltage values.
Switch monitoring module **BCM101-K**	BCM101-K can monitor the status of sixty switches with wet contact input, It is equipped with twobusbar interfaces which are used to extend this module.
Display module **BCM101-HMI**	BCM101 -HMI is used to display measuring electrical parameters of incoming line / feeder and status of circuit breaker.

TECHNICAL SPECIFICATION

BCM101-M1
BCM101-M2

Parameters			Specification
	Accuracy		U, l: 0.2 class , P , Q , PF: 0.5 class , Active energy: 0.5S
Signal input	Voltage	Rated value	Three-phase AC 3x230/400V，single phase AC 230V
		Overload	Continuous: 1.2Un, Instantaneous: 2Un/1min
	Current	Rated value	AC5A/AC1A
		Overload	Continuous: 1.2ln, Instantaneous: 10ln/5s
	Frequency		45~65Hz, accuracy: ±0.01Hz
Digital input			4 Digital inputs, dry contact
Relay output			2 relay outputs, AC 250V/5A DC 30V/3A（AC1)
Temperature			2 temperatures, NTC
Communication			2 RS485 communication ports, Modbus-RTU protocol (Optional)
			1 RJ45 communication port, Modbus-TCP protocol
Busbar interface			2
Power supply		Working rage	DC: 24V
Installation dimension			L x W x H(mm): 126*133*50, DIN35mm rail mounted

BCM101-SC

Parameters			Specification
	Accuracy		U, l: 0.2 class , P , Q , PF: 0.5 class , Active energy: 0.5S
Signal input	Voltaɟe	Rated value	Phase AC 230V
		Overload	Continuous: 1.2Un, Instantaneous: 2Un/1min
		Others	30 digital inputs, judging the opening and closing of circuit breaker through voltage value. If voltage > 120V, circuit breaker closes; if voltage < 110V, circuit breaker opens.
	Current	Rated value	50A
		Overload	Continuous: 1.2ln, Instantaneous: 10ln/5s
	Frequency		45~65Hz, accuracy: ±0.01Hz
Installation dimension			L x W x H(mm): 126*125*50, DIN35mm rail mounted

Current transformer module

Parameters	Specification
Rated value	SHI-BCT50Ⅱ: 5(50)A，SHI-BCT100Ⅱ: 5(100)A
Accuracy	Class 0.1
Overload	Continuous: 1.2ln, Instantaneous: 10ln/5s
Power consumption	≤0.2VA (each phase)
Impedancen	≤20mΩ
Insulation	4000V/min
Installation dimension	5(50)A - L×W×H(mm): 26*33.5*11.5，pore diameter: φ8.9mm 5(100)A- L×W×H(mm): 45*52.5*17.5，pore diameter: φ19mm

Elecnova

PD194Z-E14

Multi-circuit
Harmonics
Modbus Interface
Energy Accuracy 0.5S
Pulse Output

APPLICATIONS

Data Acquisition	Energy Management	Remote Power Monitoring

FUNCTION

◉ **Networks**
-TN, TT, IT networks

◉ **Accuracy**
-Energy: 0.5S(Solid-core CT)
-Voltage: 0.2%
-Current:0.2%

◉ **Communication**
-Interface: RS485
-Protocol: Modbus-RTU
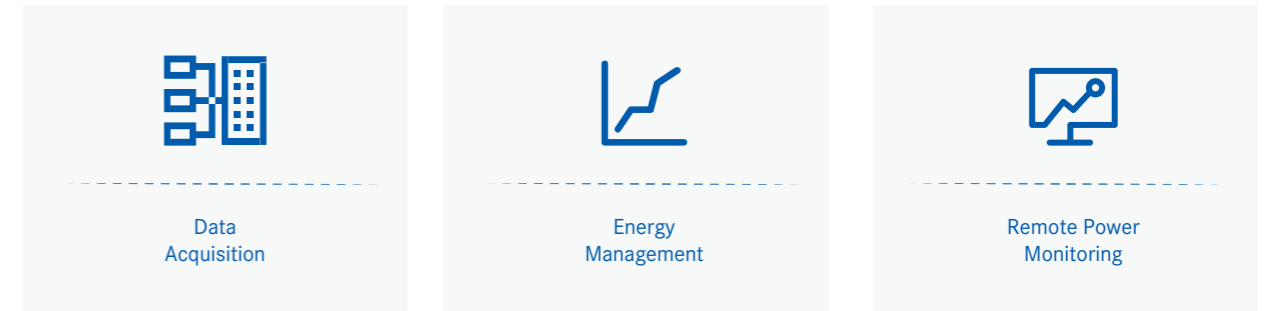
◉ **Measuring**
-Fundamental V/A
-Demand
-Max./Min. Value

◉ **Power Quality**
-THD
-Harmonics up to 31st
-Sequence component
-Unbalance
-Crest factor and K factor

◉ **Energy Metering**
-Bi-directional energy
-Four-quadrant reactive energy
-Tariff energy
-Fundamental energy

DIMENSIONS
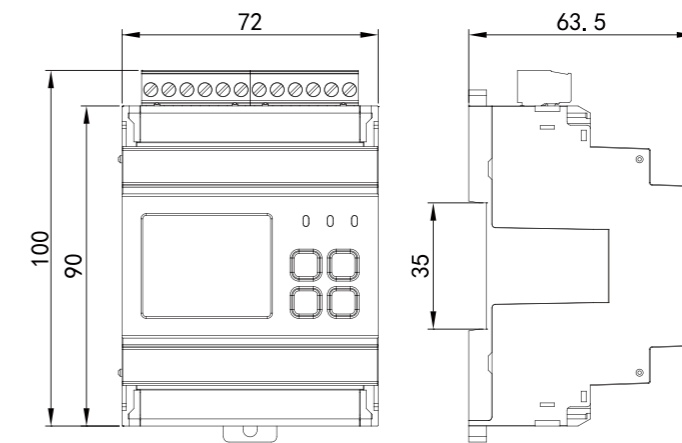
PD194Z-E14

EK1

TYPICAL WIRING

Three phase four wire

Current Inputs(External CT)

PD 194Z-E 14

PD 194Z-E 14   SC2

LoRa

Open distance 2-3km

RS485

SC2

System

Solid-core CT
SHI-BCT

TECHNICAL SPECIFICATION

Display mode		LCD
Accuracy	V/A	0.2%
	P/Q/S/PF	0.5%
	F	±0.01Hz
	±kWh	Class 0.5S (Closed Type CT)
	±kvarh	Class 2
Voltage input	Rated value	3*230V/400V
	Overload	Continuous: 1.2Vn Instantaneous:2Vn/10s
	Burden	≤0.1VA (per phase)
	Impedance	≥1.7MΩ
	Frequency	45Hz~65Hz
Current input	Rated value	External CT
	Overload	Continuous: 1.2In Instantaneous: 2In/5s
	Burden	≤0.2VA (per phase)
	Impedance	≤20mΩ
Auxiliary power supply	Working range	AC/DC 80~270V 50/60Hz
	Consumption	≤5VA
Communication port	RS485	Modbus-RTU, 2-wire, up to 9600bps
Energy pulse output		1 photocoupler output, pulse width (80±20%) ms
Optional module(EK1)	Digital inputs	Dry digital inputs, Isolation: ≥2kV AC
	Relay outputs	Contact rated at AC 250V/5A or DC 30V/5A (AC 1)
Ambient condition	Operating temperature	−20℃~70℃
	Relative humidity	≤95%RH, no condensation
	Altitude	≤2500m
Insulation		≥ 2kV AC

ENERGY METER
FOR EV CHARGER

Digital Intelligent Power Distribution Solution Provider

http://en.sfere-elecnova.com

PD195Z-CD31F

Programmable
Wide Range of Working Temperature
High DC Voltage Input

FUNCTION

◉ **Networks**
  -DC netwoks

◉ **Accuracy**
  -Voltage: 0.5%
  -Current: 0.5%
  -Energy: Class 1

◉ **Communication**
  -Interface: RS485
  -Protocol: Modbus-RTU

MAIN FEATURES

◉ **Measuring**
  -V/A/P

◉ **Energy Metering**
  -Active energy
  -Tariffs

APPLICATIONS

| Solar Power Generation | EV Charger | Remote Power Monitoring |

Elecnova

DIMENSIONS

72

90

63.5

35

TYPICAL WIRING

TECHNICAL SPECIFICATION

Electrical Characteristics		
Accuracy		Voltage, current: Class 0.5, Power: Class 1 Energy: Class 1
Voltage input	Rated voltage Un	DC 1000V CATII
	Over voltage	Continuous: 1.2Un
	Power consumption	≤0.2 W
Current input	Rated value In	75mV（input via shunt）
	Minimum current	0.05In
	Maximum current	1.2In
	Start-up current	0.004In
	Power consumption	≤0.1 W
Working power supply		
Rated range		AC/DC：80～270V or DC：9～36V
Power consumption		≤5VA or ≤2W
Communciation characteristics		
RS485 communication port		Modbus- RTU protocol, baud rate up to 38400bps
Output interface		
Energy pulse		Pulse width 80ms±20ms
Real-time clock		
Error		≤0.5s/24h
Mechanical characteristics		
Dimension(mm)		72×90×63.5
IP protection		Front case: IP54, rear case IP20
Ambient condition		
Working temperature		(-40~70)℃
Relative humidity		(5~95)%(no condensation)
Altitude		≤2000m
Comply to standards		
Safety		IEC61010-1
EMC		IEC61326-1

PD195Z-CD32F

Programmable
Wide Range of Working Temperature
High DC Voltage Input

FUNCTION

◉ **Networks**
-DC netwoks

◉ **Accuracy**
-Voltage: 0.5%
-Current: 0.5%
-Energy: Class 1

◉ **Communication**
-Interface: RS485
-Protocol: Modbus-RTU

MAIN FEATURES

◉ **Measuring**
-Fundamental V/A
-Demand
-Max./Min. Value

◉ **Energy Metering**
-Active energy
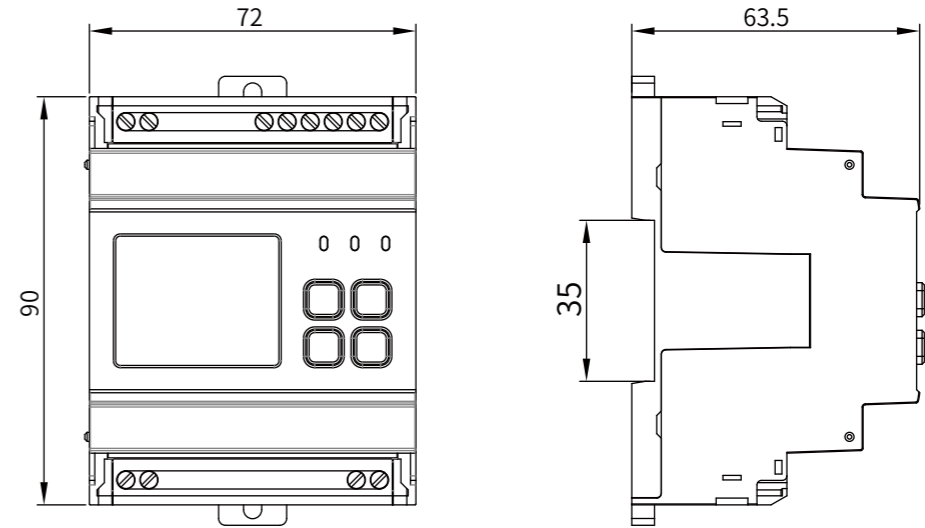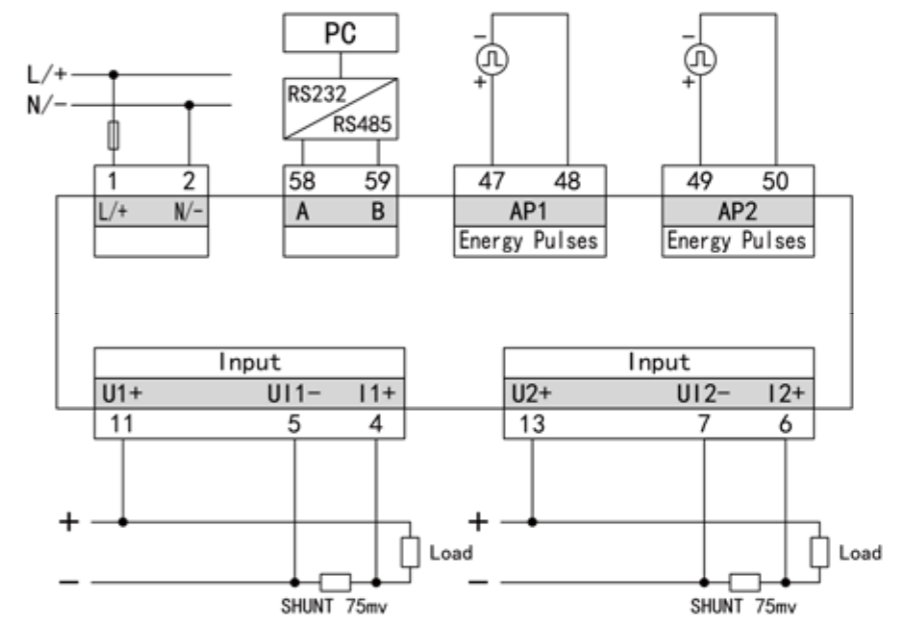-Tariffs

APPLICATIONS

Solar Power Generation

EV Charger

Remote Power Monitoring

MODEL

Product model	Measurement (2 channels)				Communication	Energy pulse
	Voltage U	Current I	Power P	Energy E		
PD195Z- CD32F	DC 1000V	DC 75mV	■	■	1 channel	2 channels

NOTE: "■": Yes

DIMENSIONS

72   63.5   90   35

TYPICAL WIRING

Digital Intelligent Power Distribution Solution Provider

Elecnova

Electrical characteristics		
Accuracy		Voltage, current: Class 0.5, Power: Class 1 Energy: Class 1
Voltage input	Rated voltage Un	DC 1000V CATII
	Over voltage	Continuous: 1.2Un
	Power consumption	≤0.2 W
Current input	Rated value In	75mV（input via shunt)
	Minimum current	0.05In
	Maximum current	1.2In
	Start-up current	0.004In
	Power consumption	≤0.1 W
Working power supply		
Rated range		AC/DC：80～270V or DC：9～36V
Power consumption		≤5VA or ≤2W
Communciation characteristics		
RS485 communication port		Modbus- RTU protocol, baud rate up to 38400bps
Output interface		
Energy pulse		Pulse width 80ms±20ms
Real-time clock		
Error		≤0.5s/24h
Mechanical characteristics		
Dimension(mm)		72×90×63.5
IP protection		Front case: IP54, rear case IP20
Ambient condition		
Working temperature		(-40~70)℃
Relative humidity		(5~95)%(no condensation)
Altitude		≤2000m
Comply to standards		
Safety		IEC61010-1
EMC		IEC61326-1

DTSF1946-4M-01

MID

Programmable
Wide Range of Working Temperature (-40~70℃)
MID Certification

DTSF1946-4M-01

FUNCTION

◉ **Wiring**
  -Down in and up out

◉ **Accuracy**
  —Active energy Class index B

◉ **Communication**
  -Interface: RS485
  -Protocol: Modbus-RTU

MAIN FEATURES

◉ **Measuring**
  -V/A/P/Q/PF/F/±kWh

◉ **Energy Metering**
  -Bi-directional energy
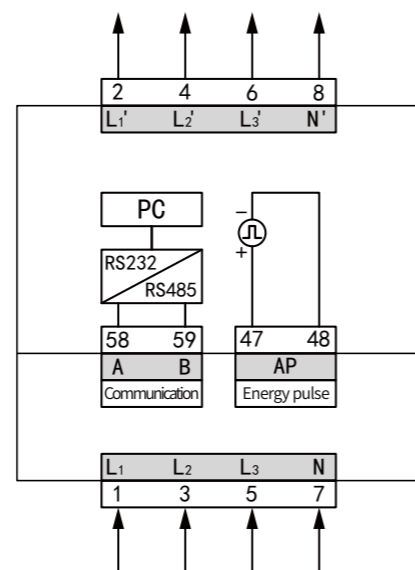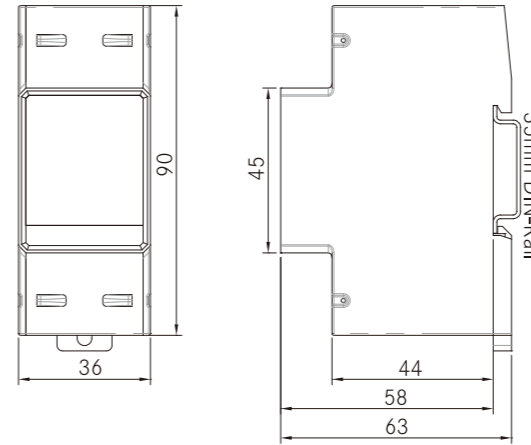 -Tariffs

APPLICATIONS

Intelligent
Buildings

EV
Charger

Remote Power
Monitoring

DIMENSIONS
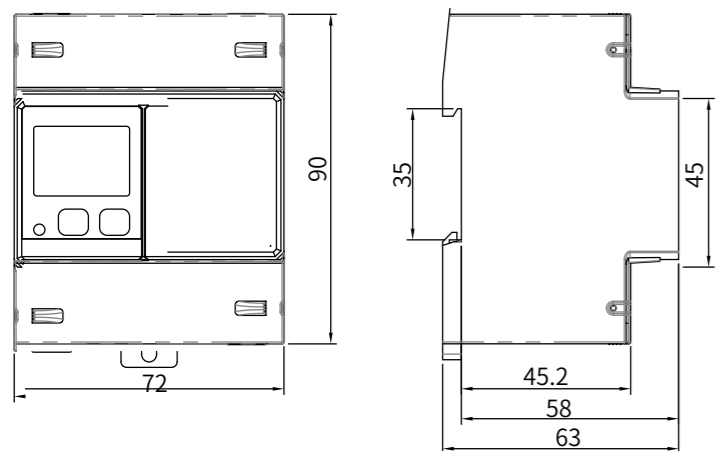
TYPICAL WIRING

DTS1946-4M-01(Three phase, down in and up out)

MODEL

Function		DTSF1946-4M-01
Wiring	3P4W	■
Voltage	3×230/400V	■
Current	Direct	0.25-5(63)A
Real-time measurement	U, I, P, Q, S, PF, Hz	■
	THD	■
Energy metering	Bi-directional energy	■
	Four-quadrant reactive energy	■
	Tariff energy	■
Demand		■
Max/Min value		■
Event log		■
RS485 Interface		■
Energy pulse		■
Display		LCD

NOTE: "■": Yes

TECHNICAL SPECIFICATION

Electrical characteristics		
Accuracy class		Class B
Rated voltage		3*230/400V
Frequency		50/60 Hz
Wiring mode		3P4W
Operating voltage range		0.8Un ~ 1.2Un
Power consumption	Power consumption of voltage circuit	<4VA
	Power consumption of current circuit	<1VA
Energy pulse		1 channel active energy pulse, pulse width 80ms±20%
Clock error		≤0.5s/day

Communication characteristics	
RS485 communication interface	Modbus RTU communication protocol, baud rate up to 9600bps

Mechanical properties	
Dimensions(mm)	72×90×63.5
IP protection	IP20

Ambient condition	
Working temperature	- 25℃ ~ +70℃
Relative humidity	(5~95)%，Non condensing
Operating altitude	Altitude≤2000m
Pollution degree	No corrosive gas
Insulation	Resistance of signal, power supply and output terminals to case ≥ 100MΩ

DDSF1946-2M

Programmable
MID Certification

FUNCTION

⊙ **Accuracy**
—Active energy Class index B

⊙ **Communication**
-Interface: RS485
-Protocol: Modbus-RTU

MAIN FEATURES

⊙ **Measuring**
-V/A/P/Q/PF/F/±kWh

⊙ **Energy Metering**
-Bi-directional energy
-Tariffs

APPLICATIONS

Intelligent Buildings

EV Charger

Remote Power Monitoring

DIMENSIONS

35mm DIN-Rail

90

45

36

44

58

63

TYPICAL WIRING
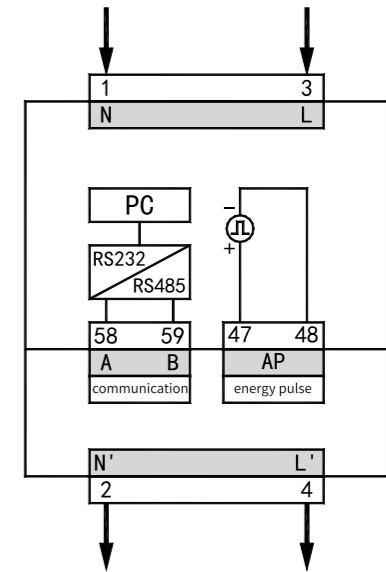
MODEL

Function		DDSF1946-2M
Wiring	1P2W	■
Voltage	230V	■
Current	Direct	0.25-5(63)A
Real-time measurement	U, I, P, Q, S, PF, Hz	■
Energy metering	Bi-directional energy	■
	Four-quadrant reactive energy	■
	Tariff energy	■
Demand		■
Max/Min value		■
Event log		■
RS485 Interface		■
Energy pulse		■
Display		LCD

NOTE："■": Yes

Electrical characteristics

Accuracy class		Class B
Rated voltage		230V
Frequency		50/60 Hz
Wiring mode		Single-phase
Operating voltage range		0.8Un ~ 1.2Un
Power consumption	Power consumption of voltage circuit	<4VA
	Power consumption of current circuit	<1VA
Energy pulse		1 channel active energy pulse, pulse width
Clock error		≤0.5s/day

Communication characteristics

RS485 communication interface	Modbus RTU communication protocol, baud rate up to 9600bps

Mechanical properties

Dimensions(mm)	36×90×63.5
IP protection	IP20

Ambient condition

Working temperature	- 25℃ ~ +70℃
Relative humidity	(5~95)%, Non condensing
Operating altitude	Altitude≤2000m
Pollution degree	No corrosive gas
Insulation	Resistance of signal, power supply and output terminals to case≥100MΩ

DC
MULTI-FUNCTIONAL POWER METER

Digital Intelligent Power Distribution Solution Provider

http://en.sfere-elecnova.com

PD195E-5SY1

Programmable
Wide Range of Working Temperature
High Protection Level
High DC Voltage Input

DIMENSIONS

FUNCTION

- **Accuracy**
  - -Voltage: 0.5%
  - -Current: 0.5%

- **Communication**
  - -Interface: RS485
  - -Protocol: Modbus-RTU

MAIN FEATURES

- **Measuring**
  - -Fundamental V/A/P/E

- **I/O**
  - -Analog outputs
  - -Digital inputs
  - -Relay outputs

TYPICAL WIRING

Current input through shunt

APPLICATIONS

Solar Power
Generation

Industrial
Control

Remote Power
Monitoring

Current input through hall component or isolation transmitter

Elecnova
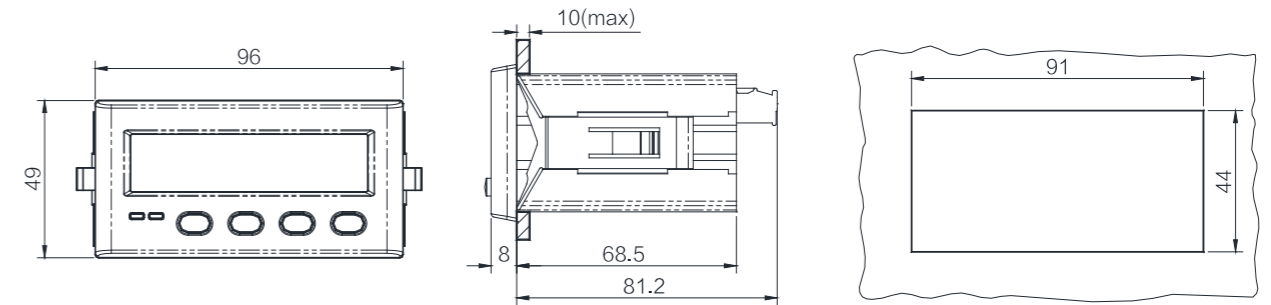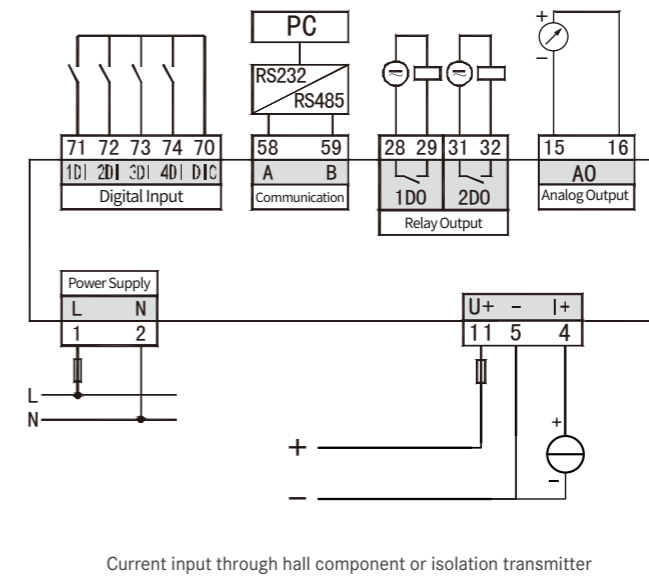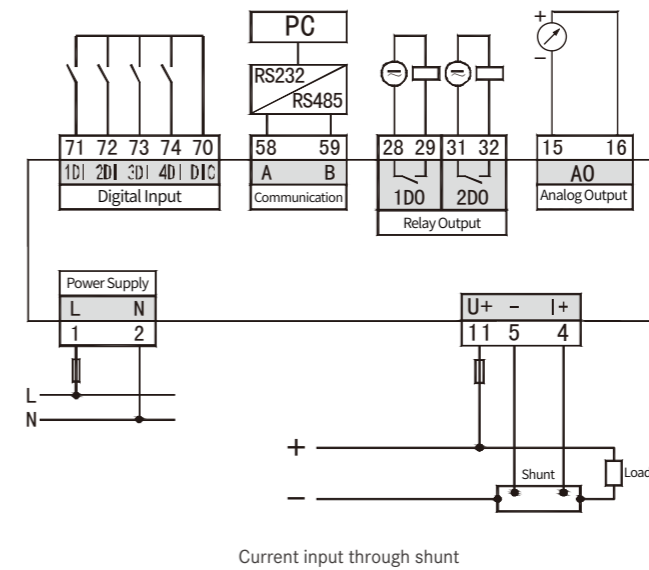
TECHNICAL SPECIFICATION

Item			Parameter
Accuracy class			U, I, P Class 0.5, energy Class 1
Display data update time			1s
Input characteristics	Voltage	Rated value	DC 1000V
		Overload	Continuous: 1.2Vn
	Current	Rated value	DC±4V, 75mV(External current diverter)
		Overload	Continuous: 1.2In
Power supply	Working range		AC/DC 80~270V 50/60Hz
	Power consumption		≤5VA
Digital input			≤0.1mW (each channel)
Relay output			Contact Capacity AC 5A/250V, DC 5A/30V (AC 1)
Analog output	Current output		DC 4~ 20mA, 0~ 20mA and etc. load ≤350Ω
	Voltage output		DC 0~5V, 1~5V and etc. load≥20kΩ
Communication			RS-485 interface, Modbus-RTU protocol, baud rate 2400~9600bps
Protection level			IP64(Front panel), IP20(Rear case)
Working temperature			-10~55°C
Relative humidity			≤93%RH
Insulation ability			Power supply, input and output≥ AC 2kV
Altitude			≤2500m

PD195Z-E33

Programmable
Optional Modules
DIN Rail Mounted

FUNCTION

⊙ **Accuracy**
-Voltage: 0.5%
-Current: 0.5%

⊙ **Communication**
-Interface: RS485
-Protocol: Modbus-RTU

MAIN FEATURES

⊙ **Measuring**
-V/A/P/E

⊙ **I/O**
-Digital inputs/Relay outputs(add EK1 module)
-Measure up to 21 circuits(add EM2D modules)

APPLICATIONS

Wind Power
Generation

Industrial
Control

Remote Power
Monitoring

DIMENSIONS

PD195Z-E33   EM2D

72   72   63.5

90   35

TYPICAL WIRING

PD195Z-E33   EM2D
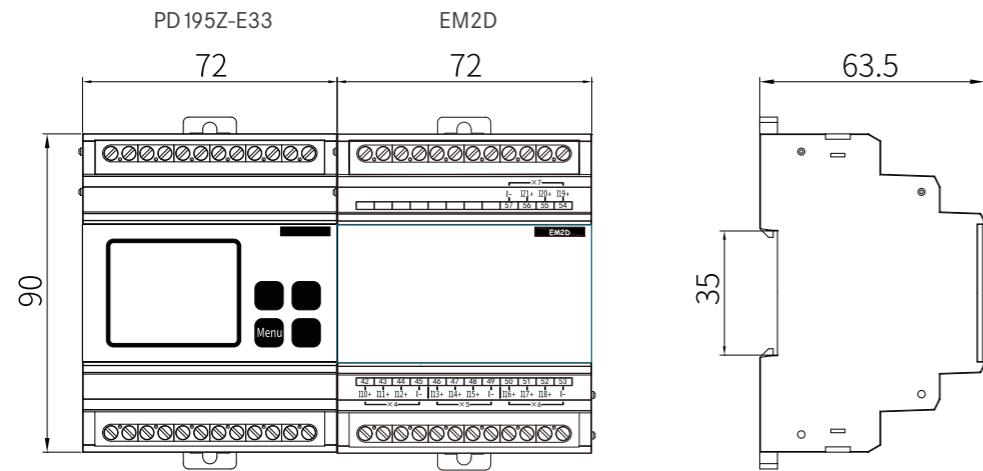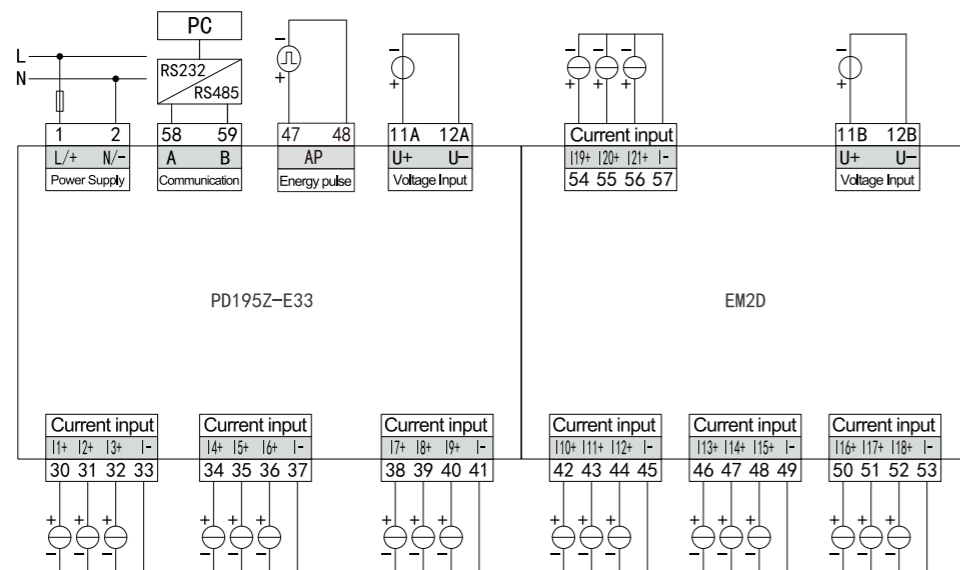
TECHNICAL SPECIFICATION

Item			Parameter
Accuracy class			Measuring module: U, I, P Class 0.5, Energy Class 1 Measuring module+ Hall sensor: U Class 0.5, I, P Class 1, Energy Class 2
Display mode			LCD
Signal input	Voltage	Rated value	DC(40 ~ 1000)V direct access
		Overload	Continuous: 1.2Vn
		Power consumption	≤0.2W
		Impedance	≥6MΩ
	Current	Rated value	DC(0 ~ 4)V(External hall sensor) Continuous:1.2In
		Overload	Continuous: 1.2In
		Power consumption	≤0.1mW (each channel)
Power supply		Working Range	AC/DC 80~270V 50/60Hz
		Power consumption	≥5VA
Communication			RS-485 interface, Modbus-RTU protocol, commmunication rate up to 9600bps, higher rate can be customized
Digital input			Optocoupler isolation, dry contact type(Optional EK1 module)
Relay output			Capacity: AC250V/5A, DC30V/5A (AC 1) (Optional EK1 module)
Working temperature			-20~ 70℃, ≤93%RH, altitude: ≤4000m
Protection level			IP50 (Front panel), IP20 (Rear Case)
Safety		Insulation	Signal, power supply, output terminal to case resistance ≥100MΩ
		Withstand voltage	Power supply, input and output ≥AC2kV

Elecnova

DIGITAL
POWER METER

Digital Intelligent Power Distribution Solution Provider

http://en.sfere-elecnova.com

LNF90 Series

LED

Ultra-thin Design
Bracket Free Installation
LED Display
High-level Protection

FUNCTION

◉ **Accuracy**
-Voltage: 0.5%
-Current: 0.5%

◉ **Communication**
-Interface: RS485
-Protocol: Modbus-RTU

APPLICATIONS

Control
System

Smart
Building

Power Transformation and
Distribution Automation

Industrial
Automation

Elecnova

MODEL

	LNF90U3	LNF90I	LNF90I3
Dimension(mm)	96×96×34	96×96×34	96×96×34
Real-time measurement	Three-phase voltage	Single-phase current	Three-phase current
LED display	■	■	■
RS485	■	■	■

NOTE: "■": Yes

DIMENSIONS

5 (max)

91

91

96

96

12.5   34
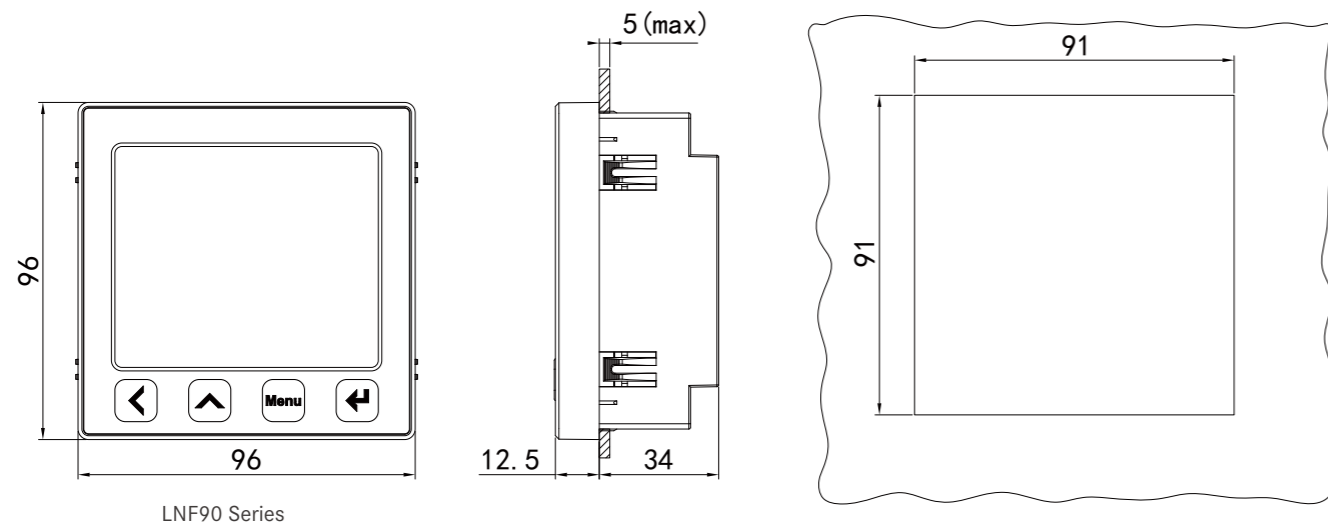
LNF90 Series

TYPICAL WIRING

PC
RS232
RS485
58 59 60
A   B   S

L/+
N/−
1   2
L/+ N/−
Aux.

Voltage Inputs
V1 V2 V3 VN
11 12 13 14

LNF90U3

L1
L2
L3
N

PC
RS232
RS485
58 59 60
A   B   S

L/+
N/−
1   2
L/+ N/−
Aux.

Voltage Inputs
V1   V3 V2
11 12 13 14

LNF90U3

L1
L2
L3

PC
RS232
RS485
58 59 60
A   B   S
Communication

L/+
N/−
1   2
L/+ N/−
Aux.

Current Input
I
4   5

L   *

LNF90I

PC
RS232
RS485
58 59 60
A   B   S
Communication

L/+
N/−
1   2
L/+ N/−
Aux.

Current Inputs
I11 I12 I21 I22 I31 I32
4   5   6   7   8   9

L1 *
L2   *
L3   *
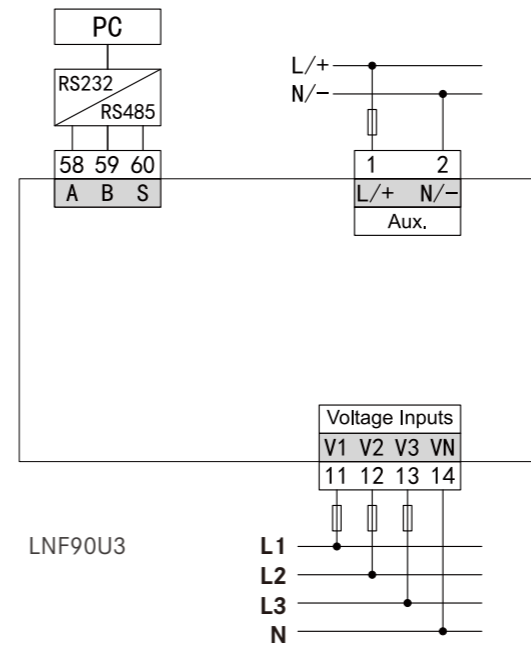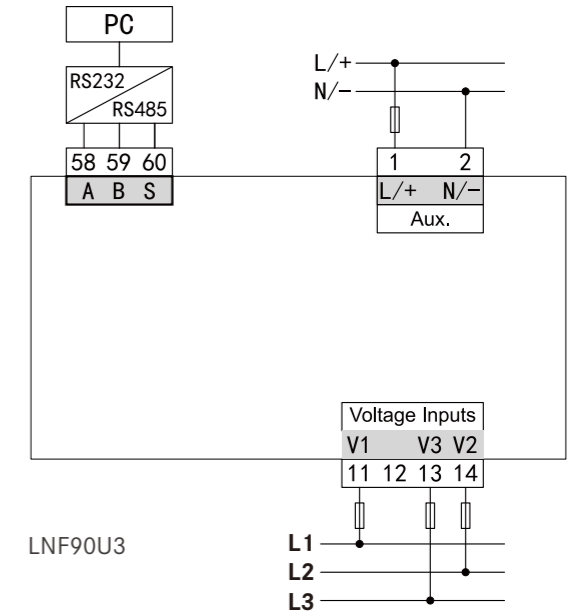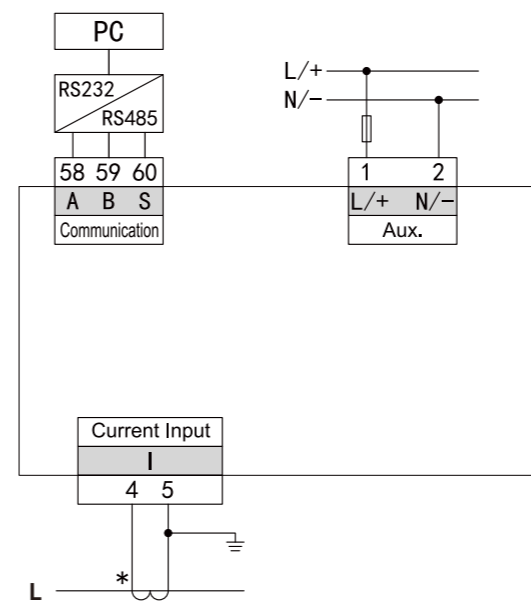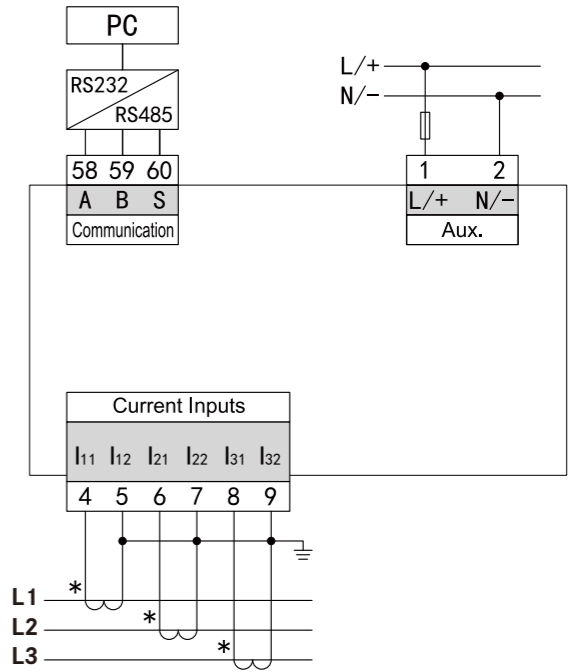
LNF90I3

Item		Parameter
Display mode		LED
Accuracy		Voltage, current: 0.5%; Frequency: ±0.01Hz
Current input	Range	5A/1A
	Resolution	1mA
	Impedance	≤20mΩ/phase
	Power consumption	≤0.2 VA/phase
	Over current	Continuous: 1.2In; Instantaneous: 10In/5s
	Frequency	45Hz~65Hz
Voltage input	Range	3*230/400V 3*100V etc.
	Resolution	0.1 V
	Impedance	≥1.7 MΩ/phase
	Power consumption	≤0.1 VA /phase
	Over voltage	Continuous:1.2Vn; instantaneous: 2Vn/1min
	Frequency	45Hz~65Hz
Communication port	Physical interface	RS-485
	Communication speed	Up to 9.6 kbps
	Communication protoco	Modbus-RTU
	Isolation voltage	2000 VAC (1 min)
Working power supply	Rated range	AC/DC 80~270V 50/60Hz
	Power consumption	≤3VA
	Withstand voltage	≥2kV
Ambient condition	Working temperature	-10℃~55℃
	Relative humidity	≤95%RH, no condensation
	Working altitude	≤2500m
	Anti-pollution degree	No corrosive gas
	Protection degree	Front case IP54, rear case IP20
	Insulation	Resistance between signal, power supply, output terminals and case >100MΩ
	Withstand voltage	Input and power supply ≥2kV, input and output ≥2kV, power supply and output ≥2kV

LNF70 series

Ultra-thin Design
Bracket Free Installation
LCD Display
High-level Protection

This series of digital display AC electrical measurement meters are applied for voltage and current measurement in power distribution system.They support programmable transformation ratio and can be equipped with communication interface. They are featured with good appearance and compact structure.

FUNCTION

⊙ **Accuracy**
-Voltage: 0.5%
-Current: 0.5%
-Overload: 1.2Un，1.2In

⊙ **Communication**
-Interface: RS485
-Protocol: Modbus-RTU

APPLICATIONS

Intelligent
Device

Smart
Building

INC
Industrial and
Mining Enterprise

Public
Facilities

MODEL

|	**LNF70IY-C**	**LNF70I3Y-C**	**LNF70U3Y-C**
Dimension(mm)	72x72x44.5	72x72x44.5	72x72x44.5
Real-time measurement	Single-phase current	Three-phase current	Three-phase voltage
LCD Display	■	■	■
RS485	■	■	■

NOTE："■": Yes

TECHNICAL SPECIFICATION

Item			Parameter
Accuracy			0.5%
Display data update time			1s
Signal input	Voltage	Rated value	3*230/400V 3*100V etc.
		Overload	Continuous: 1.2Vn, instantaneous: 2Vn/1min
		Energy consumption	≤0.1VA
	Current	Rated value	1A/5A
		Overload	Continuous: 1.2In, instantaneous: 10In/5s
		Energy consumption	≤0.2VA
	Frequency		45~65Hz
Communication	RS485 interface		Modbus-RTU protocol, baud rate up to 9600bps
Power supply	Working range		AC/DC 80~270V 50/60Hz
	Energy consumption		≤5VA
Ambient condition	Working temperature		-10°C~55°C
	Relative humidity		≤95%RH
	Altitude		≤2500m
Safety	Insulation		Signal, power supply, output terminals to case resistance≥100MΩ
	Withstand voltage		Power supply, input and output≥2kV
Protection level			Front IP54, Rear IP20

DIMENSIONS

LNF70I3Y

LNF70IY

LNF70U3Y

TYPICAL WIRING

LNF70I3Y

LNF70IY

LNF70U3Y
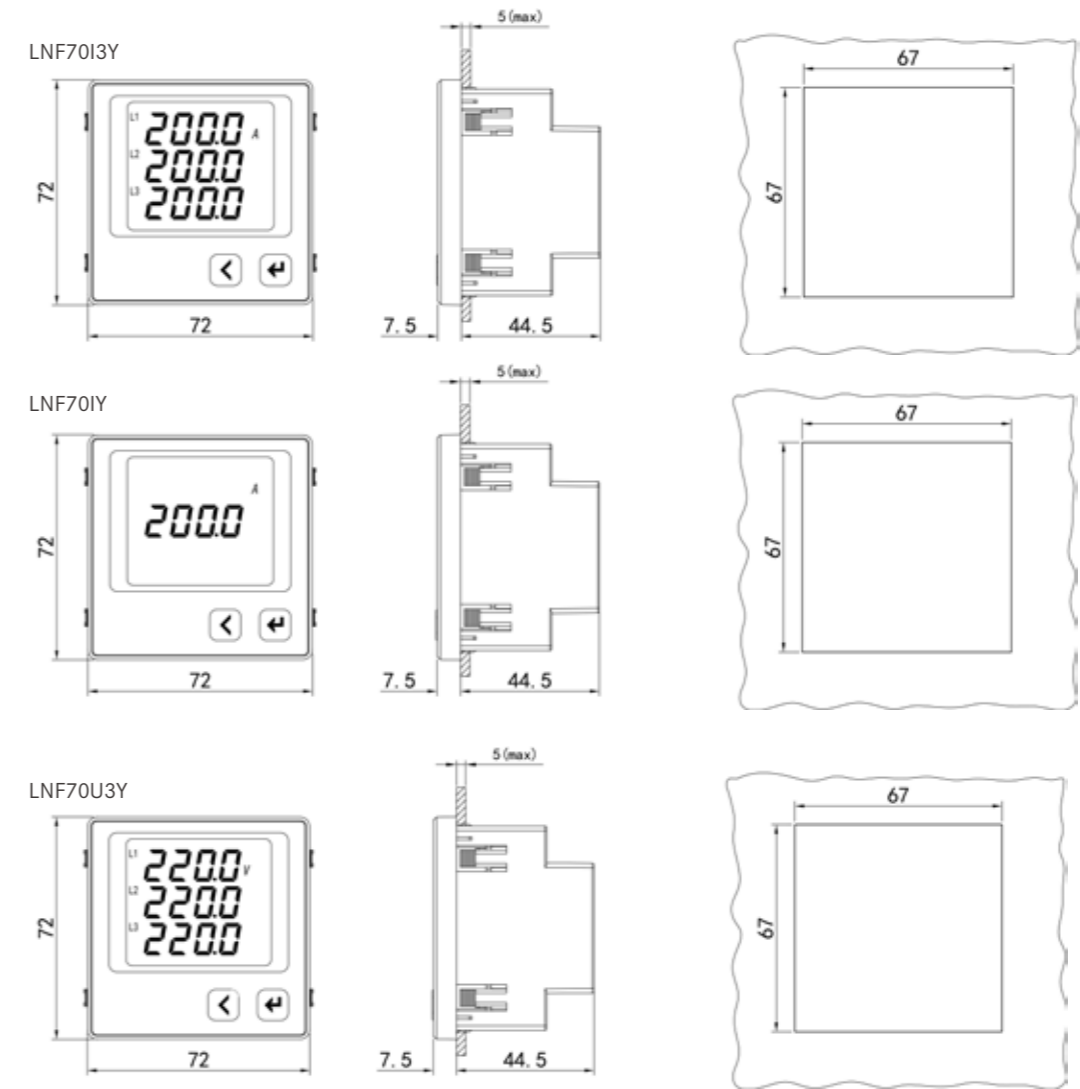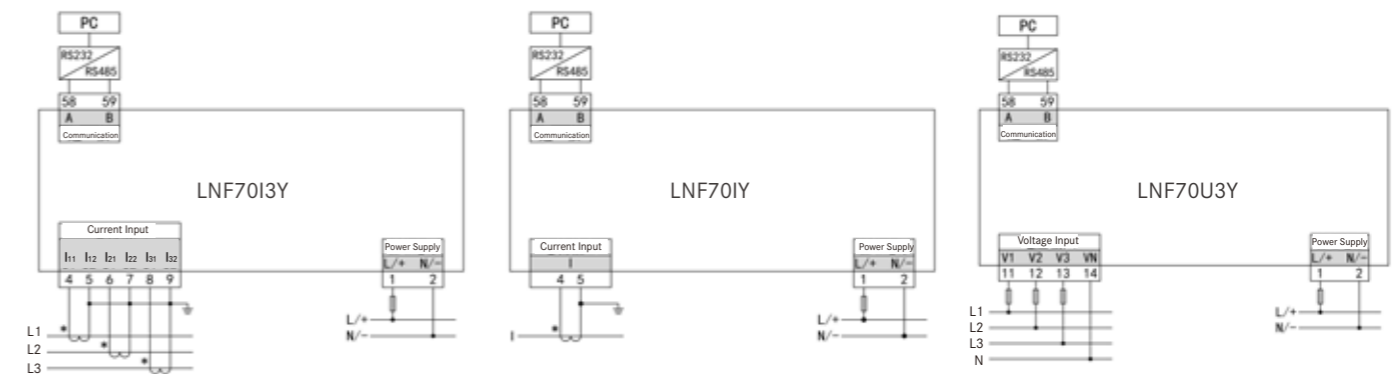
SMART MODULE

Digital Intelligent Power Distribution Solution Provider

http://en.sfere-elecnova.com

Sfere700-TM
Sfere700-TS

Distributed multi-channel temperature monitoring module

Distributed design
Scale flexibly
Up to 24 temperature measurements
RS485 communication interface

Low-voltage power distribution system

Temperature monitoring

FUNCTION

Model	Sfere700-TM	Sfere700-TS
Type	Master module	Slave module
Temperature monitoring channel	6	6
RS485 communication interface	1-way slave station (to external) 1-way master station (to slave module)	1-way slave station

Elecnova

DIMENSIONS
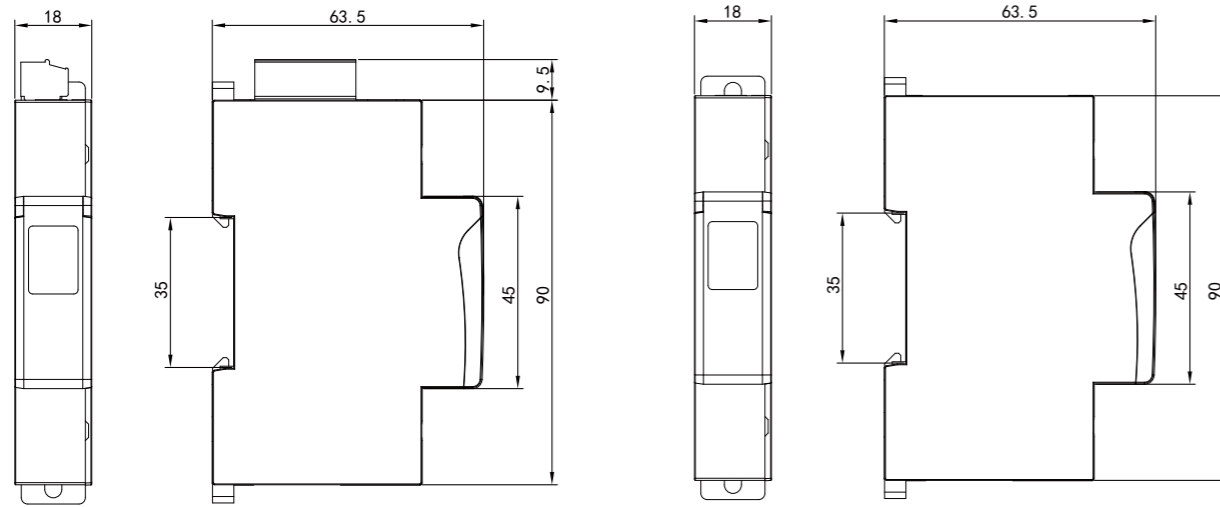
Sfere701-TM

Sfere701-TS

TYPICAL WIRING
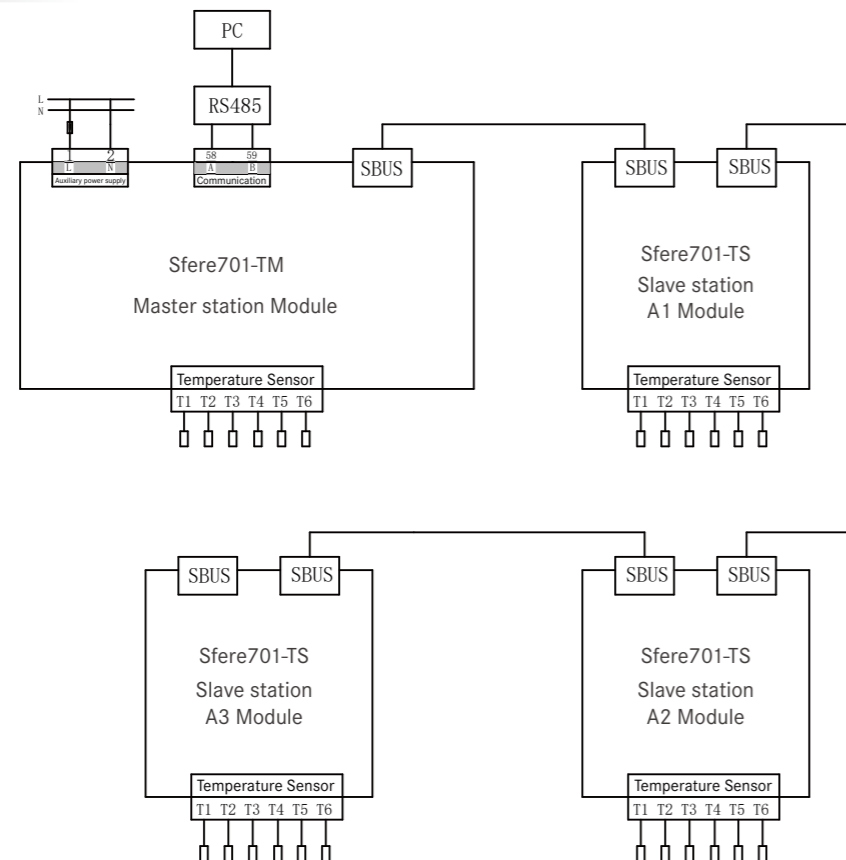
TECHNICAL SPECIFICATION

Function	Sfere700-TM	Sfere700-TS
Temperature measurement		
Number	6 (Single module)	
Type	NTC 10k	
Accuracy	±1 ℃	
Range	-20~140 ℃	
Power supply		
Voltage Range	AC/DC 80～270V, 50/60Hz	SBUS Power
Consumption	≤5VA	
Communication		
Interface	RS485	
Protocol	Modbus-RTU, 4800-115200bps	
Isolation	4000V AC	
Ambient condition		
Operating temperature	-20℃～70℃	
Relative humidity	≤95%RH, Non condensing	
Altitude	≤2500m	
IP Degree	IP20	
Withstand	IEC 61010-1	
EMC		
Electrostatic discharge immunity	IEC 61000-4-2-Level III	
Radio frequency electromagnetic field radiation immunity	IEC 61000-4-3- Level III	
Electrical fast transient immunity	IEC 61000-4-4- Level III	
Impact (surge) immunity	IEC 61000-4-5- Level III	
Immunity to conducted interference induced by RF field	IEC 61000-4-6- Level III	
Power frequency magnetic field immunity	IEC 61000-4-8- Level III	
Immunity to voltage sags and short interruptions	IEC 61000-4-11- Level III	

Sfere700-DI3
Switching monitoring module

Easy to install
RS485 communication interface
Compact design

APPLICATIONS

Low-voltage power
distribution system

Temperature
monitoring

DIMENSIONS

TYPICAL WIRING

Sfere700-DI3

Sfere700-DI3B
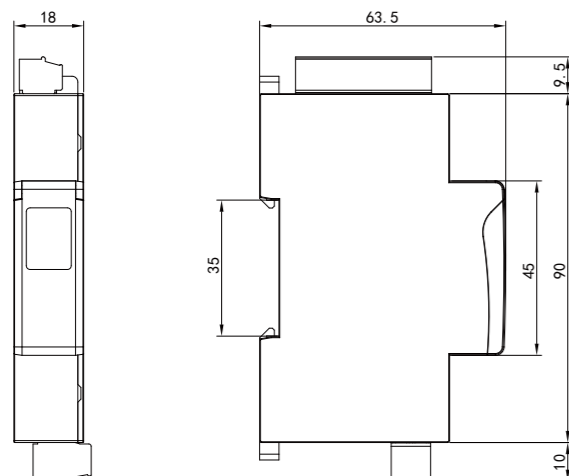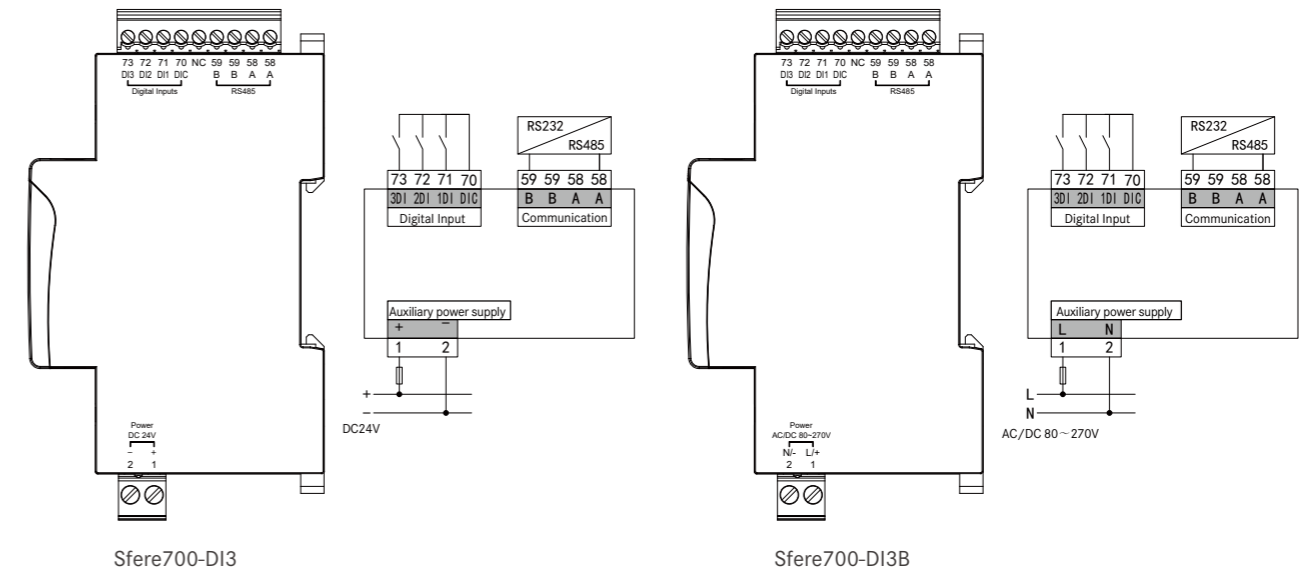
TECHNICAL SPECIFICATION

Digital input	
Number	3
Input type	Dry contact
Insulation	2000 V AC
Scan time	10 ms
Filter time	30 ms
Communication	
Interface	RS485
Protocol	Modbus-RTU, up to 19200bps
Insulation	2000 V AC
Power supply	
Rated range	Sfere700-DI3: DC24V ±20%; Sfere700-DI3B: AC/DC 80～270V
Consumption	≤0.5W
Ambient condition	
Operating temperature	-25℃～70℃
Relative humidity	≤95%RH
Altitude	≤2000m
IP Degree	IP20
EMC	Better than level III

BUSWAY TEMPERATURE
MONITORING SYSTEMEM

Digital Intelligent Power Distribution Solution Provider

http://en.sfere-elecnova.com
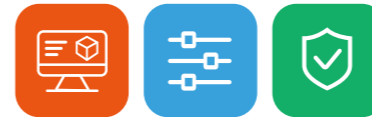
Sfere702

Specially designed for busway temperature monitoring
RS-485 & RJ45 Ethernet ccommunication interfaces
Safe and reliable

SYSTEM STRUCTURE

Sfere702 busway temperature monitoring system is composed of monitoring host, temperature & humidity acquisition module and temperature sensor. The system adopts DC24V power supply, which makes it safe and reliable. The monitoring host is equipped with RS-485 and RJ45 Ethernet interfaces, providing Modbus-RTU and Modbus-TCP communication protocols externally, which can be connected to other standard systems.

RS485
Ethernet

2-core
Twisted pair

#1 Two bus
#2 Two bus
#3 Two bus
#4 Two bus

Elecnova
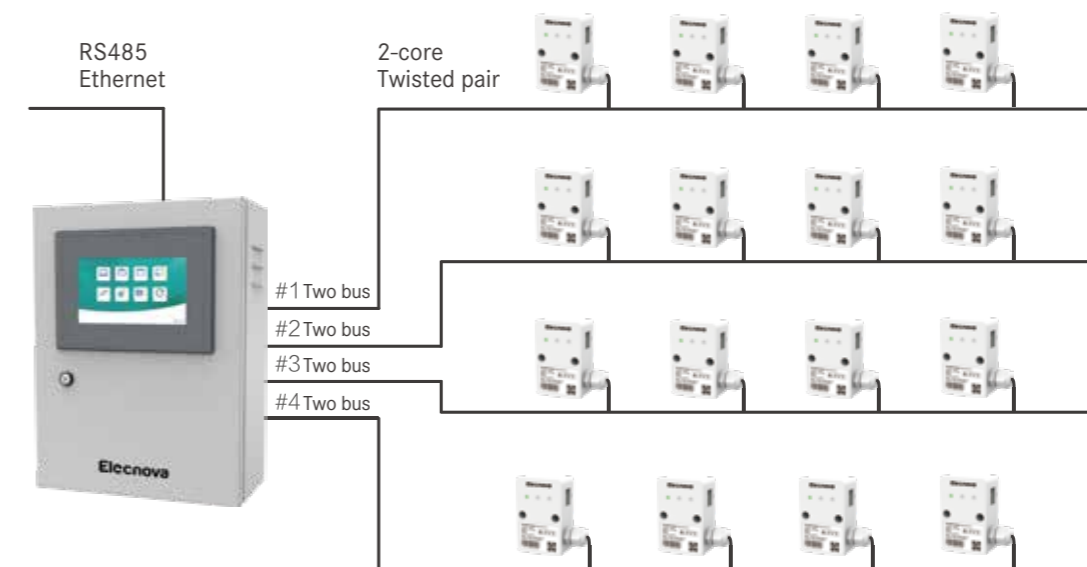
Items	Sfere702-B	Sfere702-BM
Bus type	Non-polarity two bus	Non-polarity two bus
Monitoring capacity (accessible module)	Sfere702-B-2: two bus lines 2 * 128 = 256 modules Sfere702-B-4: four bus lines 4 * 128 = 512 modules	Sfere702-B-2: four bus lines 2 * 128 = 256 modules
Outline dimension	420(W) X 560(H) X 195(D) 587(H) (including waterproof adapter)	298(W) X 398(H) X 155(D) 425(H) (including waterproof adapter)
External communication interface	1 RS232, 1 RS485, 1 RJ45 Ethernet (2 more can be added)	1 RS485, 1 Ethernet
Display mode	10-inch HMI	7-inch HMI
Input and output	Four relay outputs	Two relay outputs
Sound and light alarm	High decibel buzzer LED indicator	Built in buzzer
Backup power supply	Two emergency batteries, 12V/12AH battery	–
Printing function	Micro printer	–
Installation method	Wall mounted	Wall mounted

Items	Sfere702-TC	Sfere702-TD
Monitoring position	Busway junction point	Busway shell
Power supply	Bus power supply DC24V	
Bus type	Non-polarity two bus	
Outline dimension		
Temperature measurement channel	1 channel of temperature measurement/ 1 channel of humidity measurement	4 channel of temperature measurement/ 1 channel of humidity measurement
Temperature probe	Non-contact infrared type	Round hole contact type
Display mode	–	–
Outline dimension	72*48*28	72*48*28

NOTE："–": No

MOTOR PROTECTION
CONTROLLER

Digital Intelligent Power Distribution Solution Provider

http://en.sfere-elecnova.com

WDH-31-200

MODBUS

9 PROTECTION

Modbus Interface
Protection (9 Types)
Analog Output

APPLICATIONS

M

Motor
Control Centre

MODEL

WDH-31-203K − □ / □ / □ + □

Current Code		Optional Code	Installation Mode	Cable Length for CT
2A	100A	L: Residual current	Y: Integrated	1m
6.3A	200A	M2: Analog output	F: Split	3m
30A	5A(Secondary curent)			

Current	Rated Current for Motor	SHI-I CT Code
2A	1A~2A	SHI01-I, Φ20mm
6.3A	2A~6.3A	SHI30-I, Φ20mm
30A	6.3A~30A	
100A	50A~100A	SHI200-I, Φ20mm
200A	100A~200A	SHI300-I, Φ30mm
5A	>200A	SHI30-I, Φ20mm +3pcs of external CT XA:5A

OPTIONAL CT

	THREE-PHASE CT		EXTERNAL CT	RESIDUAL CURRENT CT	
Model	SHI30-1 /SHI200-1	SHI300-1	SHI-ZT40	SHI-ZT30	SHI-ZT100
Diameter(mm)	20	30	42x30	31	100
Dimension(mm)	93x45x96	185x36x72	75x44x102	75x44x98	185x44x190

DIMENSIONS

Splited Installation (Cut-out Size: 94x46mm)

96 · 48 · 9 · 74 · 94(min) · 93 · 45
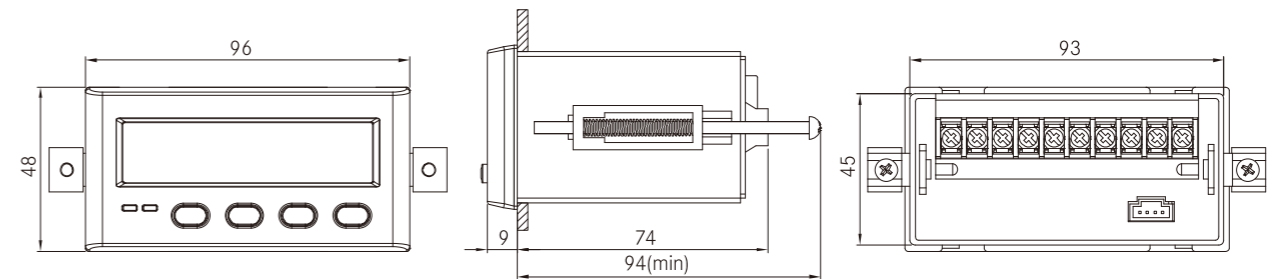
Integrated Installation

66 · 89 · 96 · 93 · 9 · 13.5 · 45 · 164

Measurement function	Three-phase current	■
	Current unbalance	■
	Thermal capacity	■
	Residual current (leakage) 50mA~5000mA	□
	Single-phase voltage	■
Relay output	Control & Signal relay	■
Analog output	1 channel of DC 4-20mA analog output	□
Maintenance information	Alarm information/fault record	■
Display mode	LED display (operate/fault indicate)	■
	LCD display (operation status, fault information, parameter setting, etc)	■
Installation mode	Optional for integrated or split installation	Panel mounting, (94*46)mm, integrated type can be Mounted on 35mm DIN-rail
Protection function	Overload inverse time protection	■
	Start acceleration timeout protection	■
	Locked rotor (starting overcurrent) protection	■
	Blocking (operation overcurrent) protection	■
	Leakage protection	■
	Current unbalance/phase failure protection	■
	Overvoltage protection	■
	Undervoltage protection	■
	Residual current (leakage) (50~5000) mA	□
Control protection	Protection mode	■
Communication function	Modbus-RTU	■

NOTE: "■": Yes   "□": Optional

System operating parameter	Motor rated voltage	AC400V, 50Hz
	Motor rated current	0.1A~800A
	Insulation resistance	＞100MΩ
Controller auxiliary power	Working range	AC/DC 80V~270V
Ambient condition	Operating temperature	-20℃~ 60℃
	Relative humidity	≤93%RH
	Storage temperature	-40℃~70℃
	Protection degree (Panel)	IP64
	Notice	No explosive medium, metal corroding gas and conducting medium at site
Protection action accuracy	Current/voltage start value	±2% of the set value
	Accumulated value of thermal capacity	±1% of the set value
Action delayed time	Action delayed time set value＜2s	±100mS
	Action delayed time set value ≥2s	±5%
Relay output	Control relay output contact capacity	AC250V/5A
	Signal relay output contact capacity	AC250V/3A, DC30V/3A
	Service time of relay output	100000 times
EMC	Electrostatic discharge test	Severe degree：Class III
	Electrical fast transient burst immunity test (EF)	Severe degree：Class III
	Surge	Severe degree：Class III
	Oscillatory waves immunity	Severe degree：Class III
	Radiated radio-frequency electrom agnetic field immunity(RF -EMS)	Severe degree：Class III
	Radio frequency radiation immunity	Severe degree：Class III
	Power frequency immunity	Severe degree：Class A
	CE limit test	150kHz~30MHz
	Conducted emission limit test	30MHz~ 1000MHz
Withstand voltage	Between power supply and input	AC2kV/1 min
	Between power supply and output	AC2kV/1 min
	Between input and output	AC1kV/1 min

TYPICAL WIRING

Wiring Diagram With Residual Current Function

Wiring Diagram With Analog Output Function
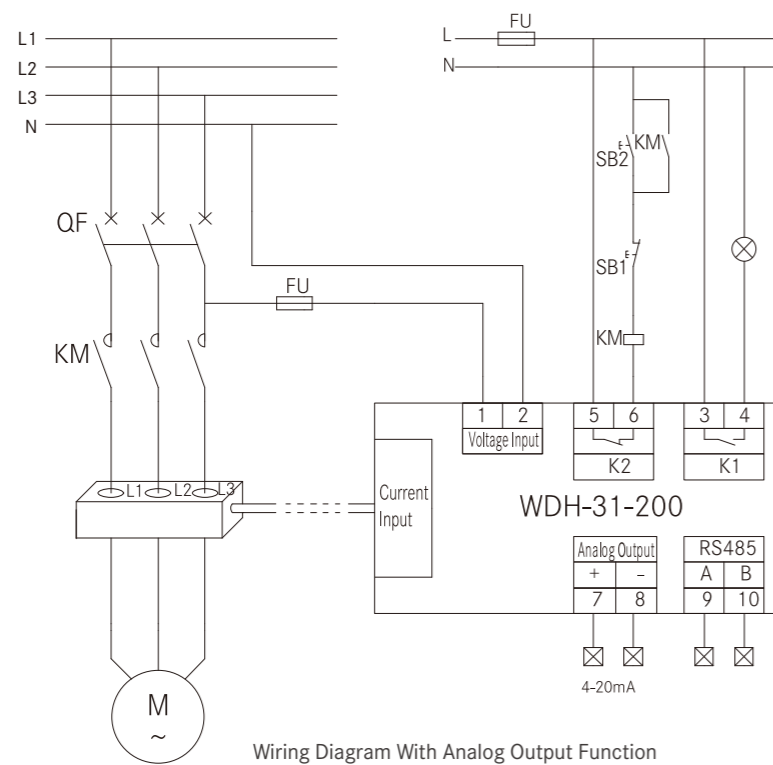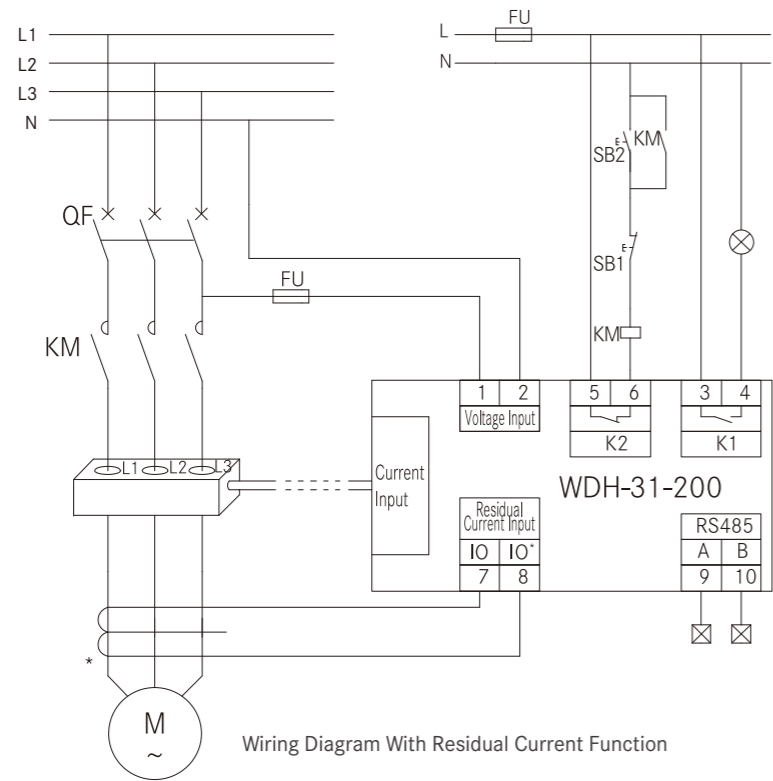
WDH-31-530

16 protection functions
5 programmable digital inputs
4 programmable relay outputs
Intelligent Human-machine interface
SOE record
FSTN/TFT LCD display module optional

MODEL

WDH-31-53 ☐ ☐ – ☐ / ☐ ☐

Communication protocol	Control mode	Current specification of protection controller	Main circuit voltage	Optional functions
1(1 Modbus-RTU/Display integration)	A: Direct start	5A	AC400V	V: Anti voltage sag/ Low voltage restart
2(1 Profibus-DP+1 Modbus-RTU)	B: Bi-directional start	25A	AC660V	
3(1 Modbus-RTU)	C: Double speed start	100A	AC100V	
4(2 Modbus-RTU)	D: Resistor divider start	300A		
7(1 Modbus-RTU/1 Modbus-TCP/IP)	E: Y/ △start	500A		
9(1 Modbus-RTU/1 Profinet)	H: Autotransformer start	800A		
	K: Protection mode			
	R: Start with soft-starter			
	P: Start with inverter			

Adjustable range	Configurable Motor Power	Diameter
0.2A~5A	5A	Φ10.5mm
5A~25A	25A	Φ10.5mm
25A~100A	100A	Φ18mm
>100A	5A	Φ10.5mm+3pcs of external CT XA:5A

Measurement function	Three-phase current	■
	Current unbalance	■
	Thermal capacity	■
	Residual current (grounding) 0.3Ie~8.0Ie	■
	Residual current (leakage) 50mA~5000mA	■
	Three-phase voltage	■
	Positive & negative sequence current	■
	Power and energy	■
Real-time clock	Year, month, day, hour, minute, second	■
Digital input	Dry contact (built-in DC 24V)	5 channels
Relay output	Control relay	3 channels
	Signal relay	1 channels
Analog output	1 channel of DC 4-20mA analog output, parameter programmable	■
Maintenance information	Alarm information/fault record	■
	Start/stop record, switch status changing record	■
	Operation times, total operation time and total shutdown time	■
Display mode	LED display (operate/fault indicate)	■
	LCD display (operation status, fault information, parameter setting, etc)	■
Installation mode	Controller main body	Mounted on 35mm DIN-rail
	Display module	Panel mounting, (92*55)mm
Communication function (Select any one)	1 (1 Modbus-RTU/Display integration)	□
	2 (1 Profibus-DP+1 Modbus-RTU)	□
	3 (1 Modbus-RTU)	□
	4 (2 Modbus-RTU)	□
	7 (1 Modbus-RTU/1 Modbus-TCP/IP)	□
	9 (1 Modbus-RTU/1 Profinet)	□

NOTE："■": Yes   "□": Optional

Protection function	Overload inverse time protection	■
	Start acceleration timeout protection	■
	Locked rotor (starting overcurrent) protection	■
	Blocking (operation overcurrent) protection	■
	Leakage protection	■
	Voltage/current unbalance/phase failure protection	■
	Underload/undercurrent protection	■
	Overvoltage protection	■
	Undervoltage protection	■
	Phase sequence protection	■
	PT disconnection protection	■
	Residual current (grounding)（0.3~8.0）Ie protection mode	■
	Residual current (leakage)(50~5000)mA	■
	External fault protection (process interlocking)	■
	tE time protection (increased safety motor)	□
Control protection	Protection mode	■
	Direct start	■
	Bi-directional start	■
	Double speed start	■
	Y/ △start	■
	Resistor divider start	■
	Autotransformer start	■
	Start with soft-starter	■
	Start with inverter	■
	Anti voltage sag(low voltage restart)	□
	Power-on automatic start	■

System operating parameter	Motor rated voltage	AC400V, 50Hz
	Motor rated current	0.1A~800A
	Insulation resistance	＞100MΩ
Controller auxiliary power	Working range	AC/DC 80V~270V
Ambient condition	Operating temperature	-20℃~60℃
	Relative humidity	≤93%RH
	Protection degree (Panel)	IP64
	Notice	No explosive medium, metal corroding gas and conducting medium at site
Protection action accuracy	Current/voltage start value	±2% of the set value
	Accumulated value of thermal capacity	±1% of the set value
Action delayed time	Action delayed time set value＜2s	±100ms
	Action delayed time set value ≥2s	±5%
Relay output	Control relay output contact capacity	AC250V/5A
	Signal relay output contact capacity	AC250V/3A, DC30V/3A
	Service time of relay output	100000 times
EMC	Electrostatic discharge test	Severe degree：Class III
	Electrical fast transient burst immunity test (EF)	Severe degree：Class III
	Surge	Severe degree：Class III
	Oscillatory waves immunity	Severe degree：Class III
	Radiated radio-frequency electrom agnetic field immunity (RF -EMS)	Severe degree：Class III
	Radio frequency radiation immunity	Severe degree：Class III
	Power frequency immunity	Severe degree：Class A
	CE limit test	150kHz~30MHz
	Conducted emission limit test	30MHz~ 1000MHz
Withstand voltage	Between power supply and input	AC2kV/1 min
	Between power supply and output	AC2kV/1 min
	Between input and output	AC1kV/1 min

NOTE："■": Yes   "□": Optional

Controller installation (5A/25A perforated connection)
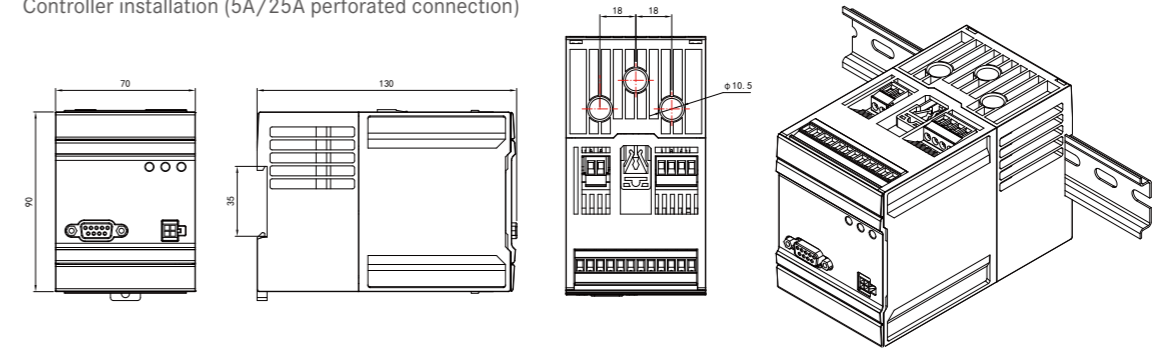
Controller installation (100A perforated connection)
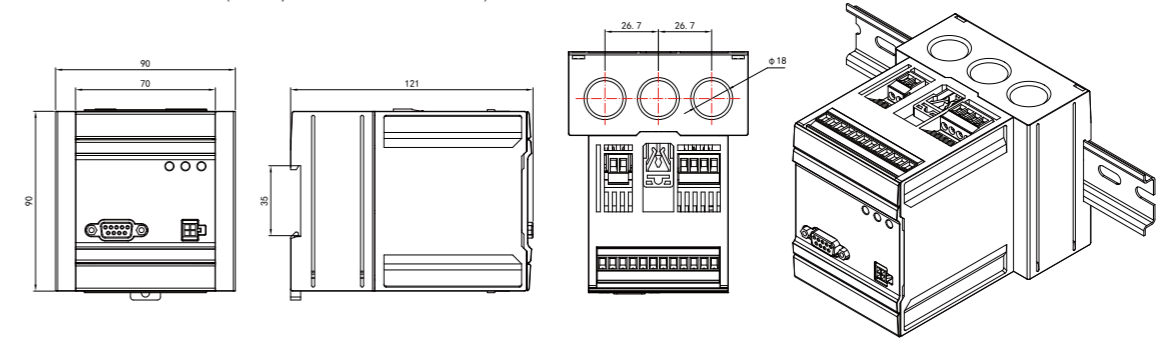
Display panel installation

WDH-31-53XC (TFT)

WDH-31-53X (LCD)
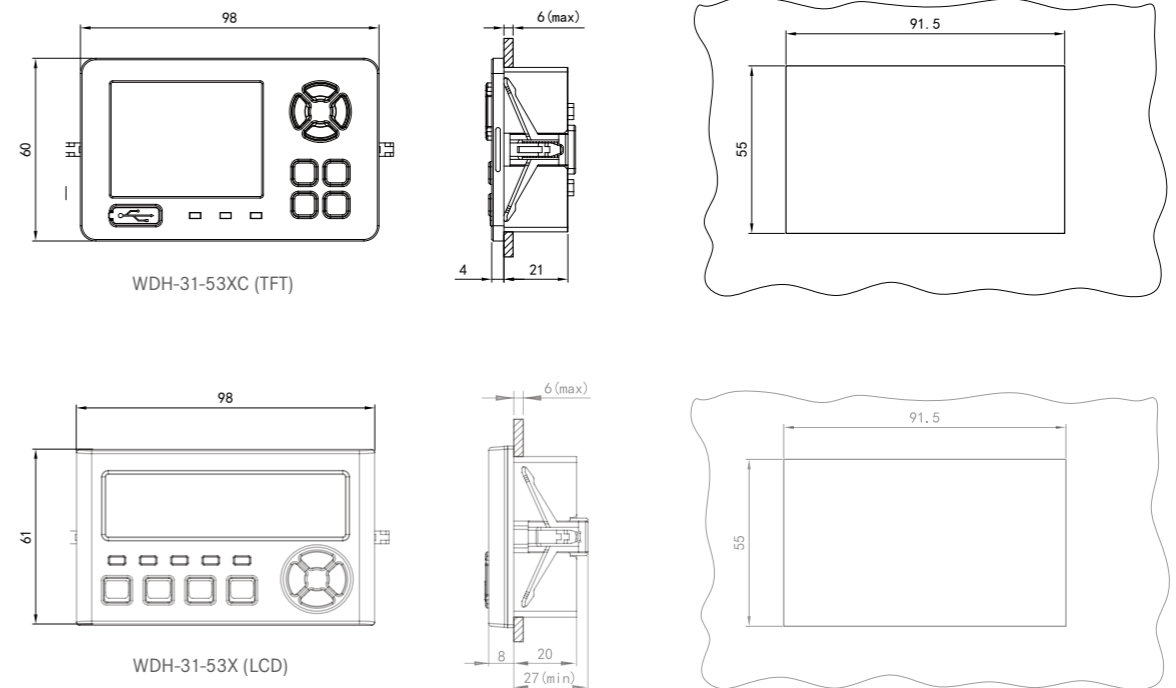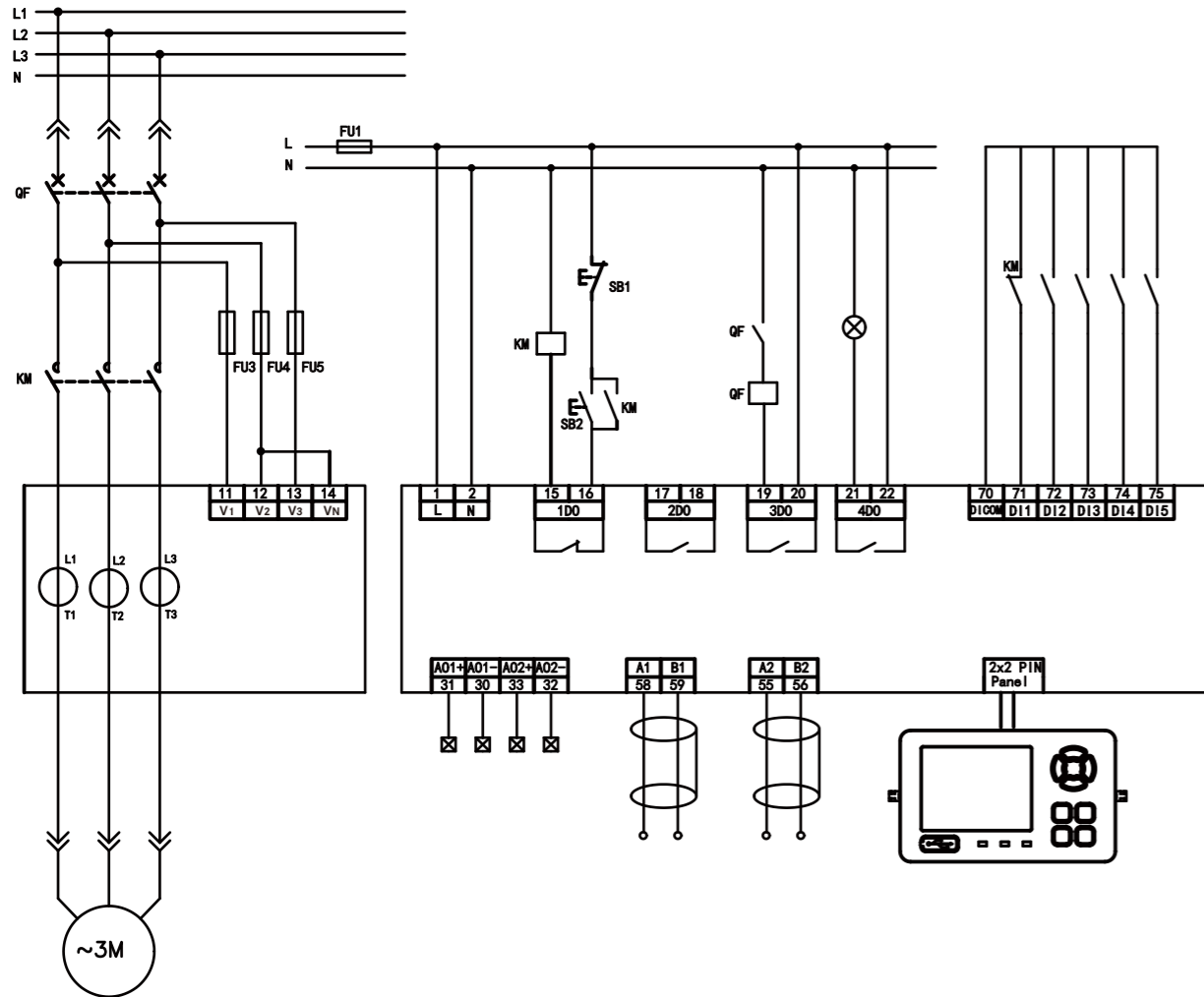
Thermal relay

Under the thermal relay mode, WDH does not participate in the start and stop operation of motor (DI terminal and panel control are invalid).
– The start/stop running of the motor must implement by the Start/Stop external button
– As drawing shown, press the start button SB2, motor start, press stop button SB1, motor stop
– Protection trip relay 1DO is NC contract, when fault was detected, 1DO open, contactor(KM) off, motor will stop
– After fault reset, 1DO closed, allow the motor start again.

Direct start
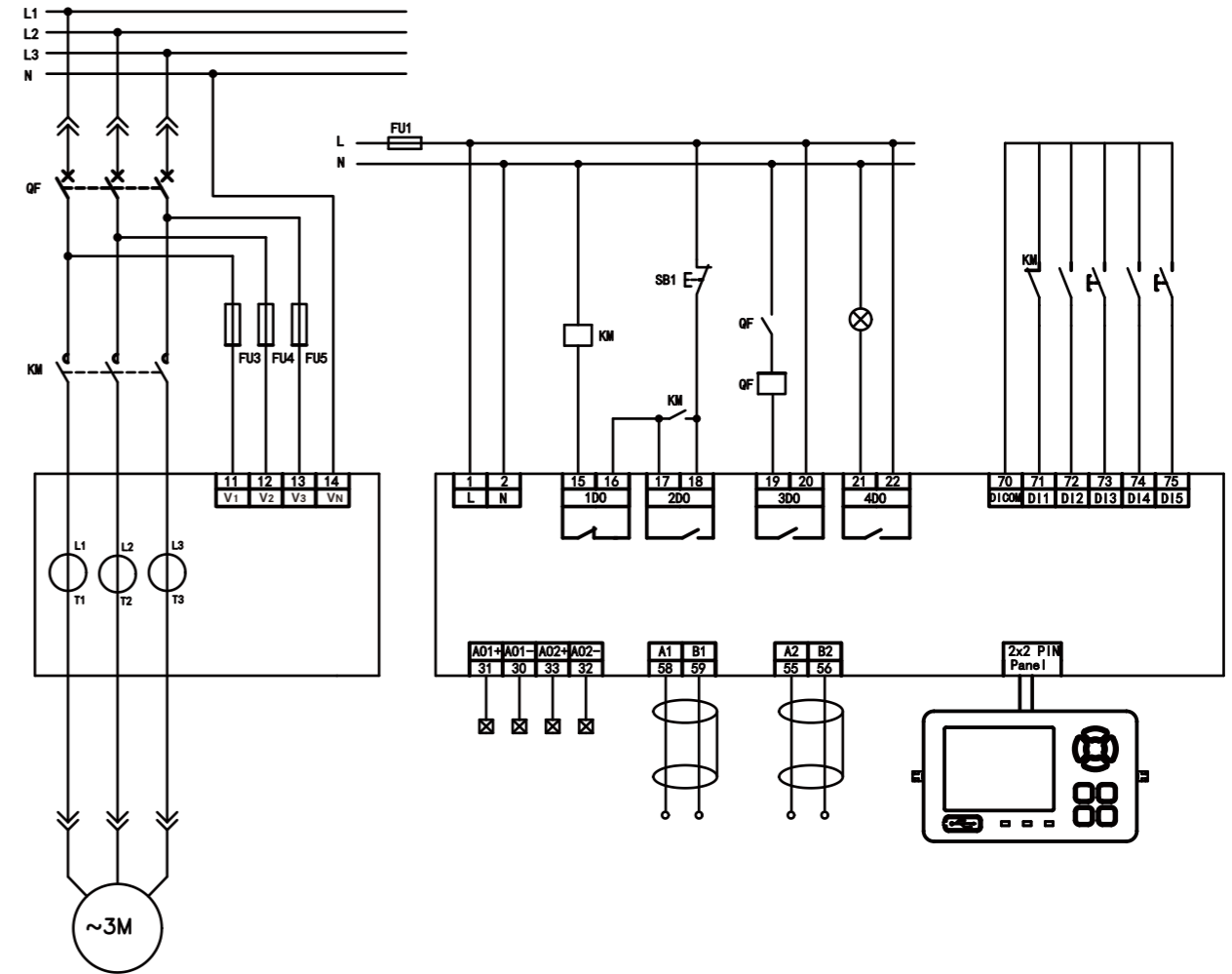
– Under the direct start mode, WDH controls the motor start/stop by relay 1DO(NC)/2DO(NO).
– As drawing shown, when the controller receive the start command(such as 3DI terminal or display interface), 2DO closed(pulse), contactor(KM) power on, motor start
– When the controller receives the stop command(such as 5DI terminal or display interface),1DO open(pulse), contractor KM power off, motor stop.
– When faults were detected,1DO open(level), contractor KM power off, motor stop.
– After reset, IDO closed, controller allows the motor restart again.

Elecnova

WDH-31-580

Modbus Interface
Protection (21 Types)
Analog Output
Temperature
Harmonics

FUNCTION

◉ Motor Protection

-Start timeout	-Over voltage
-Stall	-Low voltage
-Locked rotor	-Residual current
-Overload	-Phase loss
-Under load	-Phase-sequence
-Current unbalance	-Under power

◉ Measuring

-Temperature
-Analog input
-External fault
-tE time

-3-phase voltage
-3-phase current
-Residual current
-Energy
-Harmonics

◉ Communication

-Profibus-DP
-Modbus-RTU
-Ethernet Modbus/TCP

MODEL

WDH-31-58 □ □ – □ □ □ / □ / □

Communication protocol	Control Mode	Current Specification of Protection Controller	Main Circuit Voltage	Digital Input Type	Optional Functions	Additional Components
2:1 Profibus-DP protocol +1Modbus-RTU protocol	A: Direct start	1:5A	1:AC 400V	1: Internal DC24V power supply	R: Insulation resistance monitoring	D: Switching module-DC24V
	B: Bi-directional start	2:25A	2:AC 660V			DA: Switching module-AC220V
3: 2 Modbus-RTU protocol	C: Double speed start	3:100A	3:AC 100V	2: External AC220V power supply	V: Anti voltage sag/under voltage restart	X: Display module
	D: Resistor divider start	4:250A				
7:1 Modbus-RTU protocol +1 Ethernet Modbus/TCP protocol	E: Y/△ start	5:500A				
	H: Autotransformer start	6:800A				
	K: Protection mode					
	R: Start with soft-starter					
	P: Start with inverter					

Code	Adjustable Range	Configurable Motor Power (400V system)	Measurement Module	Diameter
1	0.2A~5A	0.13kW~2kW	WM1/05	φ 18mm
2	5A~25A	2kW~11kW	WM1/25	φ 18mm
3	25A~100A	11kW~55kW	WM1/100	φ 18mm
4	100A~250A	45kW~115kW	WM1/250	Copper Bar
5	200A~500A	90kW~280kW (Configured with 3pcs of external CT 500A:5A)	WM1/05	φ 18mm
6	500A~800A	280kW~400kW (Configured with 3pcs of external CT 800A:5A)	WM1/05	φ 18mm

OPTIONAL CT

Model	External CT	
	SHI-ZT40	SHIZT60
Diameter(mm)	42x30	32x62.5
Dimension(mm)	75x44x102	100x50x112

DIMENSIONS

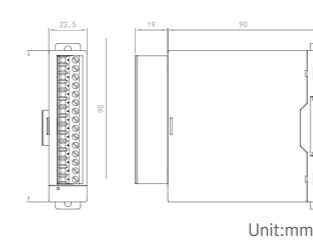Measurement Module
WM1: 5A, 25A, 100A(Perforation connection mode)

Aperture and spacing dimesions
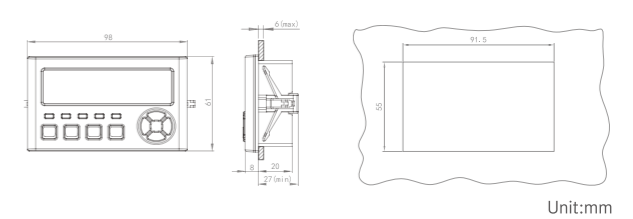Unit:mm
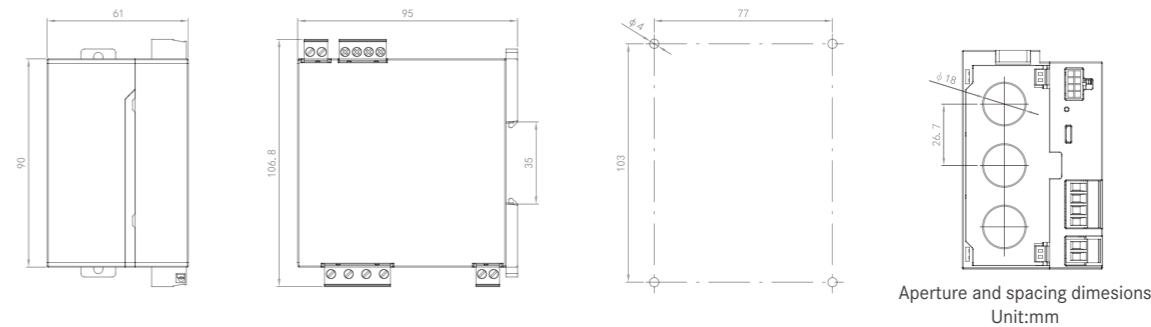
WM2: 250A (Copper bar connection mode)

Unit:mm

Main Control   Swtiching   Display

Unit:mm

Unit:mm

Elecnova

Measurement function	Three-phase current	■
	Current unbalance	■
	Thermal capacity	■
	Residual current (grounding) 0.3Ie~8.0Ie	■
	Residual current (leakage) 50mA~5000mA	■
	Three-phase voltage	■
	Frequency	■
	Power and energy	■
	Up to 31st harmonics	■
	Thermistor (10kΩ)	■
	Thermal resistance (PT100)	■
	Insulation resistance (200MΩ)	□
Real-time clock	Year, month, day, hour, minute, second	■
Digital input (either-or)	Dry contact (built-in DC 24V)	5 channels 12 channels optional
	Wet contact (external AC220V)	5 channels 12 channels optional
Relay output	Control & Signal relay	4 channels 8 channels optional
Analog output	2 channel of DC 4-20mA analog output, parameter programmable	■
Maintenance information	Fault recorder	■
	Alarm information / fault record	■
	Start/stop record, switch status changing record	■
	Operation times, total operation time and total shutdown time	■
Communication function (either-or)	1 Profibus-DP + 1 Modbus-RTU	□
	2 Modbus-RTU	□
	1 Modbus-RTU+1 Ethernet Modbus/TCP	□
Display mode	LED display (operate / fault indicate)	■
	LCD display (operation status, fault information, parameter setting, etc)	□

NOTE： "■": Yes   "□": Optional

Installation mode	Main control module	Mounted on 35mm DIN-rail
	Measurement module	Mounted on 35mm DIN-rail
	Switch module	Mounted on 35mm DIN-rail
Protection function	Display module	Panel mounting, (92*55)mm
	Overload inverse time protection	■
	Start acceleration timeout protection	■
	Locked rotor (starting overcurrent) protection	■
	Blocking (operation overcurrent) protection	■
	Leakage protection	■
	Voltage unbalance/current unbalance/phase failure	■
	protection Underload/undercurrent protection	■
	Underload / undercurrent protection	■
	Overvoltage protection	■
	Undervoltage protection	■
	Phase sequence protection	■
	PT disconnection protection	■
	Residual current (grounding) (0.3~8.0)	■
	Ie protection mode	■
	Residual current (leakage) (50~5000)mA	■
	External fault protection (process interlocking)	■
	Temperature protection	■
	tE time protection (increased safety motor)	□
Control protection	Protection mode	■
	Direct start	■
	Bi-directional start	■
	Double speed start	■
	Y/ △start	■
	Resistor divider start	■
	Autotransformer start	■
	Start with soft-starter	■
	Start with inverter	■
	Anti voltage sag (low voltage restart)	□
	Power-on automatic start	■

System operating parameter	Motor rated voltage	AC400V, 50Hz
	Motor rated current	0.1A~800A
	Insulation resistance	＞100MΩ
Controller auxiliary power	Working range	AC/DC 80V~270V
Ambient condition	Operating temperature	-20℃~60℃
	Relative humidity	≤93%RH
	Storage temperature	-40℃~70℃
	Protection degree (Panel)	IP64
	Notice	No explosive medium, metal corroding gas and conducting medium at site
Withstand voltage	Between power supply and input	AC2kV/1 min
	Between power supply and output	AC2kV/1 min
	Between input and output	AC1kV/1 min
Protection action accuracy	Current/voltage start value	±2% of the set value
	Accumulated value of thermal capacity	±1% of the set value
Action delayed time	Action delayed time set value＜2s	±100mS
	Action delayed time set value ≥2s	±5%
Relay output	Control relay output contact capacity	AC250V/5A
	Signal relay output contact capacity	AC250V/3A, DC30V/3A
	Service time of relay output	100000 times
EMC	Electrostatic discharge test	Severe degree：Class III
	Electrical fast transient burst immunity test (EF)	Severe degree：Class III
	Surge immunity	Severe degree：Class III
	Oscillatory waves immunity	Severe degree：Class III
	Radiated radio-frequency electrom agnetic field immunity(RF -EMS)	Severe degree：Class III
	Radio frequency radiation immunity	Severe degree：Class III
	Power frequency immunity	Severe degree：Class A
	CE limit test	150kHz~30MHz
	Conducted emission limit test	30MHz~1000MHz

NOTE："■": Yes　"□": Optional

Digital Intelligent Power Distribution Solution Provider

Typical Wiring Diagram for Direct Start
(with input/output)
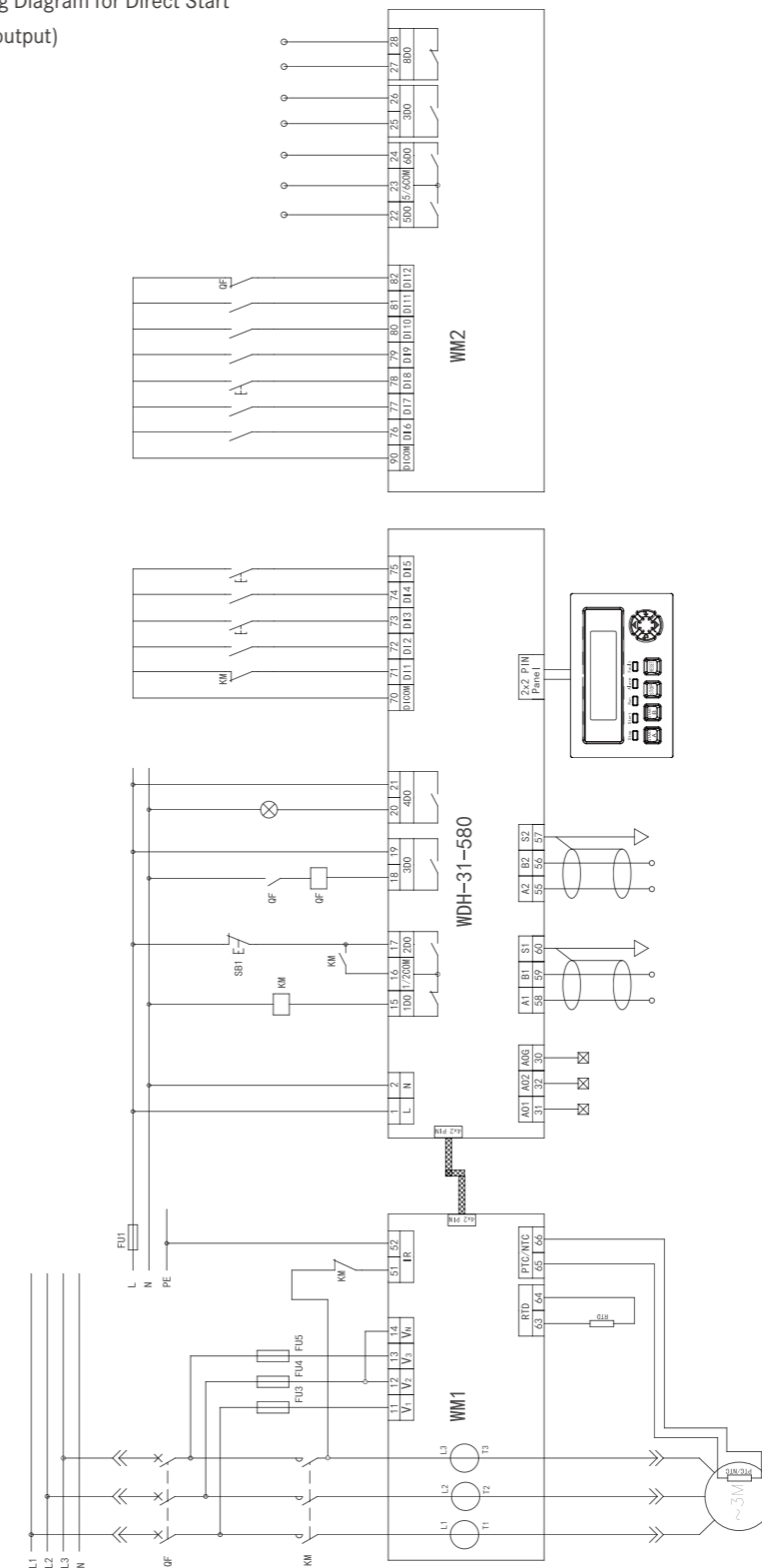
-Under the direct start mode, WDH-31-580 controls the motor start/stop by relay 1DO (NC)/2DO(NO).
-As drawing shown, when the controller receive the start command (such as 3DI terminal or display interface), 2DO closed(pulse), contactor(KM) power on, motor start.
-When the controller receives the stop command(sunch as 5DI terminal or display interface),1DO open(pulse), contractor KM power off, motor stop.
-When faults were detected,1DO open(level), contractor KM power off, motor stop.
-After reset, 1DO closed, controller allows the motor restart again.

Elecnova

Typical Wiring Diagram for Bi-directional Start
(with input/ output)
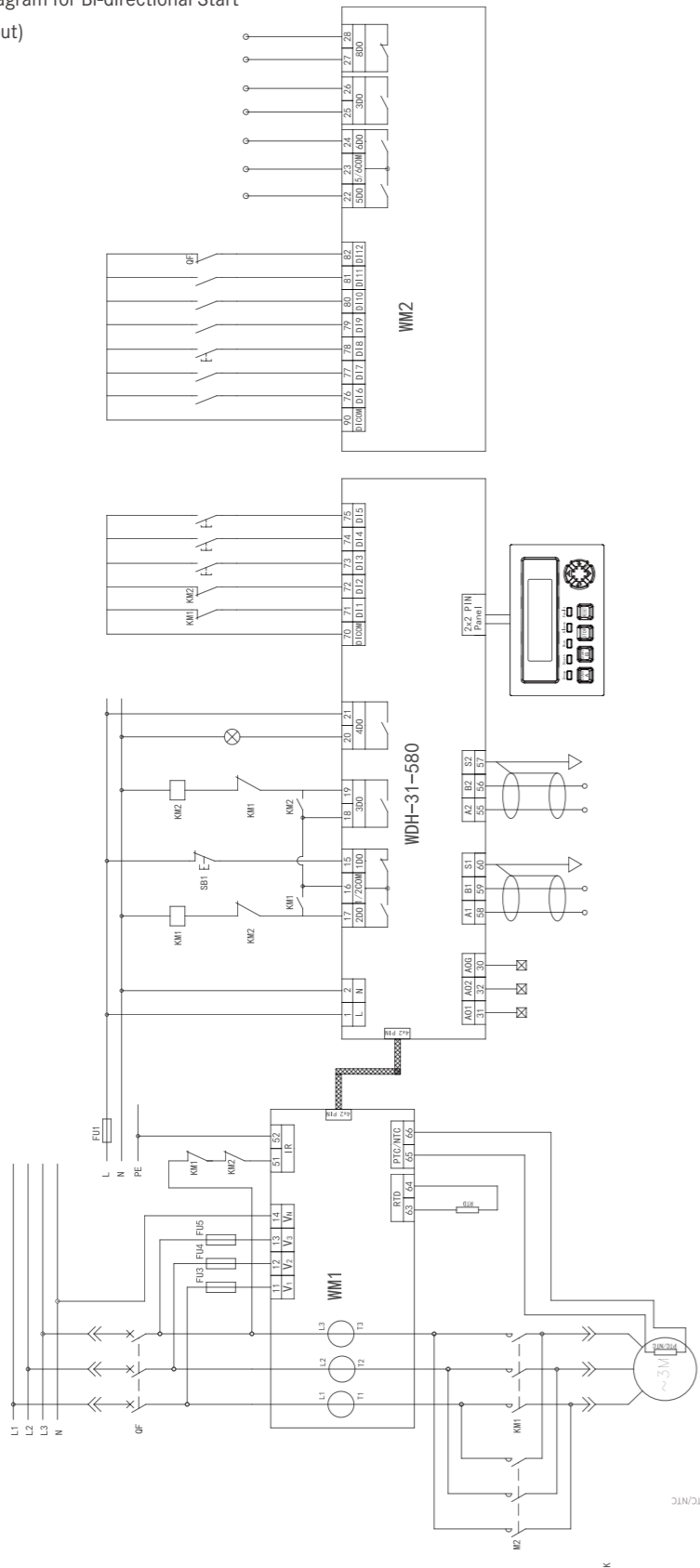
-In the bi-directional mode (forward/reverse rotation, WDH-31-580 controls the motor forward rotation start/stop by relay 1DO(NC) /2DO(N0) and by realy 1DO (NC)/3DO(NO) to the reverse direction start/stop of the motor.

-As the drawing shown, when the controller receives the forward directional start command (such as 3DI terminal or display interface), 2DO closed(pulse), contactor KMI power on, the motor start with forward direction.

-When the controller receives the reverse direction start command (such as 4DI terminal or display interface, 3DO closed (pusel), contractor KM2 power on. the motor starts with reverse direction.

-When the controller receives the stop command (such as 5DI terminal or display interface), 1DO open (pulse),contractor KM1/2 power off, the motor stop

-If enable "Continuous Switching",if the current rotation direction is forward, the controller receives the reverse start sienal, the motor wil stop than delay 1s and start in

GATEWAY

Digital Intelligent Power Distribution Solution Provider

http://en.sfere-elecnova.com

S20

Equipment management
Data calculation
Protocol conversion
Off-line cache
History record

S20 series gateways are commonly used for communication control in industrial field. They have the functions of multi-channel data acquisition, multi-protocol conversion, data analysis & calculation and automatic logic control. They also support docking with multiple platforms and flexible WEB configuration.

APPLICATIONS

- Smart city
- Industrial control
- Energy management

DIMENSIONS

160
10.4
35
40
126
9.5
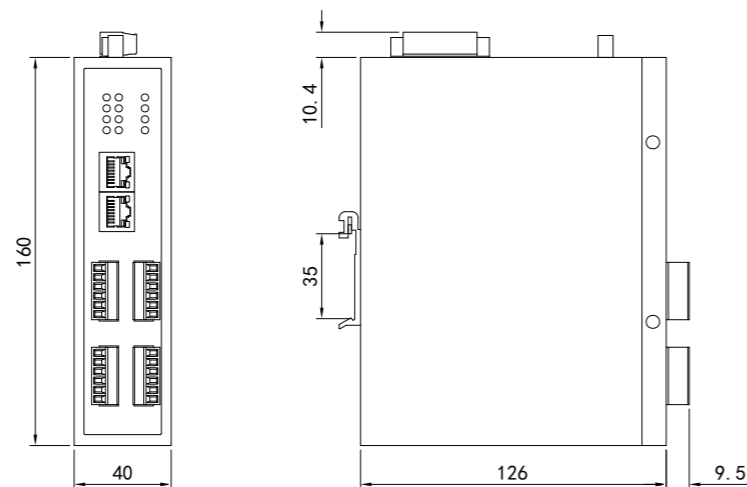
TECHNICAL SPECIFICATION

Items	S20C4	S20C8
CPU	ARM9	
Uplink	2 Ethernet	2 Ethernet
Downlink	4 RS485	8 RS485
Communication protocol	Modbus-RTU, Modbus-TCP, IEC 101, IEC 104, MQTT etc.	
Power supply	DC 18~36V	
Power consumption	<5VA	
Working temperature	-25~70℃	

MAIN FUNCTION

Item	
Multiple protocols	Modbus-RTU, Modbus-TCP, MQTT, IEC 104, etc.,
General Modbus RTU/TCP	Modbus register points can be customized to support different byte order.
Device template	Describe devices with multiple protocols.
Database	Built-in Sqlite3 database for data storage and event recording
Web server	Built-in web server, flexible configuration via web browser
Status monitoring	Support to check whether the connected device to the gateway is online or not.
Digital display	The value of the specific point of the online device can be viewed.
Message monitoring	Support to view message information and manual message debugging
Time synchronization	Support NTP and webpage time synchronization
Resume broken-point transfer	After the data upload fails, the data will be cached locally, and the data will be re-uploaded to the platform afterthe link is restored successfully.
Virtual equipment	Select the required monitoring points and reorganize them into new equipment.

Digital Intelligent Power Distribution Solution Provider

Elecnova

S15

Multi-protocol Support
Multiple Data Point Acquisition
Event Configuration & Event Recording

S15 is a communication gateway device that can collect multiple protocol buses and upload data to the cloud platform. It has multiple functions such as multi-channel data acquisition, protocol conversion between multiple protocols (Modbus-RTU/TCP, IEC101/104, MQTT...), simple numerical calculation, automatic logic control, data storage, event recording, offline cache, docking with multiple platforms, flexible WEB configuration, etc.

MAIN FEATURES

◉ **Message Debugging**
 -Manual

◉ **Programming**
 -Global lua script logic

◉ **Firmware Upgrade**
 -Available via Ethernet

APPLICATIONS

Smart city

Industrial control

Energy management

TYPICAL CONNECTIVITY

LoRa

RS485

RS485

Power Meters

4G/MQTT

Cloud

DIMENSIONS

72   63.5
35   90   106.6

TYPICAL WIRING

L
N

| 1 | 2 | E1 | E2 |
| L | N | | |
Power Supply

Communication1
A1 B1 S
58 59 60
RS485
RS232
PC

Communication2
A2 B2 S
55 56 60
RS485
RS232
PC
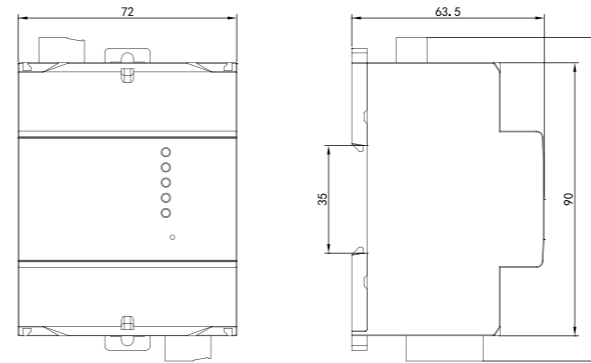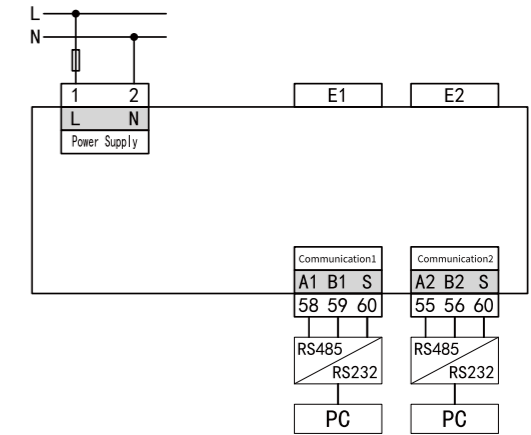
TECHNICAL SPECIFICATION

		S15-T	S15
Communication	RS485	■	■
	ENET	■	■
	LoRa	□	□
	4G	■	—
	Communication protocol	Modbus TCP/IP, Modbus RTU, MQTT, etc.	
Hardware	RS485	2	
	Ethernet	2 Switch port	
	Working voltage	AC/DC 80~270V 50/60Hz	
	Standard	IEEE 802.3	
Ambient condition	Working temperature	-25~+70℃, ≤95%RH	
	Protection level	IP20	

NOTE: "■": Yes   "—": No   "□": Optional

Elecnova

SC2

470M/868M/912M Multi-band
Wireless Transmission
Long-range

The LoRa communication gateway uses a serial port for data transmission and reception. which reduces the threshold for wireless applications and can realize one-to-one or one-to-many communication.

APPLICATIONS

Long distance	Anti-interference	Hardware watchdog

TYPICAL CONNECTIVITY

Power Meter

LoRa
Open distance 2-3km

System

RS485

RS485

TECHNICAL SPECIFICATION

36   63.5

90   35

MODEL DESCRIPTION

SC2 — A   470   M2

Transmit power:
M2:1W Max

Frequency band :
470:470M~510M
868:848M-888M
915:895M~935M

Operating voltage:
A:AC/DC80-270V
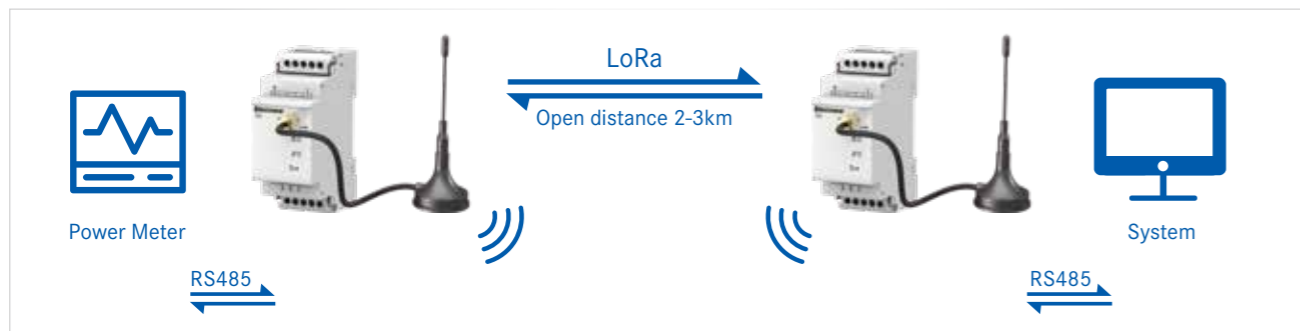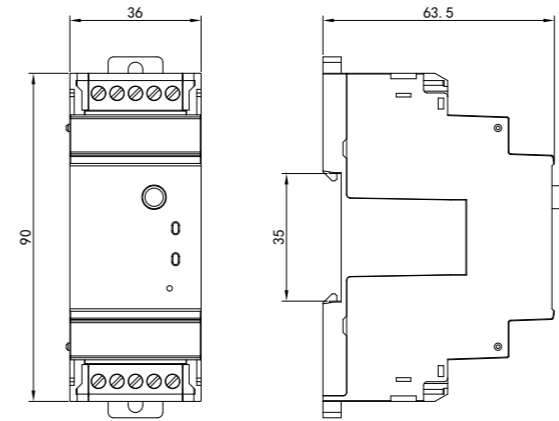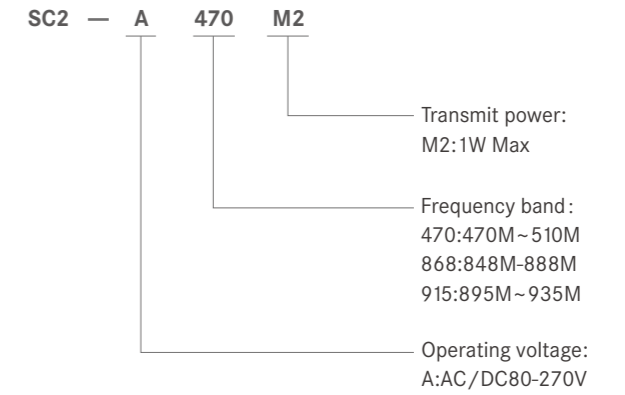
PRODUCT PARAMETERS

Model		SC2-A470	SC2-A868	SC2-A915
LoRa interface	Working frequency band	470: 470M-510M, 868: 848M-888M, 915: 895M~935M		
	Transmit power	M2: Max.1W		
	Receiving sensitivity	-138dBm@0.3Kbps		
Parameters	RS485interface	Baud rate: 1200bps-115200bps Data format: N.8.1, O.8.1, N.8.2, E.8.1		
	Operating voltage	AC/DC 80~270V		
	Operating temperature	-25℃—70℃		
	Relative humidity	≤95%RH, no condensation		
	Working altitude	≤2000m		
	Anti-pollution grade	No corrosive gas		
	Protection level	IP20		
	Insulation	Signal, power, output terminal to case resistance >100MΩ		
	Withstand voltage	Input and power supply 2kV, input and output 2kV, power supply and output 2kV		
	Insulation	IEC61010-1		

ELECTRIC INTEGRATION OPERATION PLATFORM EIOP

EIOP Introduction

Concept

- With the help of existing computer and network technology, EIOP provides users with the business services such as intuitive real-time status monitoring, energy consumption datastatistics and analysis and event management.

- Through the operation of EIOP, the user's overall level of energy management is improved, the workload of various types of staff in monitoring, management, inspection, oper-ation and maintenance is reduced, the efficiency of human resource is improved, and the costs of energy management,operation and maintenance are reduced.

- Through scientific energy efficiency analysis, EIOP can identify key links of energy consumption, find out weak parts in energy efficiency and excavate energy-conservation potential, which facilitate formulating energy-saving programs and implementing energy-saving measures, in order to reduce energy costs.

Reliable
Each business system operates independently

Safe
Perfect user management operation permission Settings and data backup

Convenient
Automatic generation of remote meter reading report and data comparison and analysis function

Good expansibility
Extensible business system and system function module to meet users' customized needs

Advanced and efficient system docking
Support data docking with other third-party intelligent software system

Convenient configuration
Convenient equipment configuration configuration design and project management

Elecnova

MOBILE EIOP

APP gives full play to the advantages of mobile and portable and integrates the business functions of web end, which make it convenient for users to grasp the operation status of electrical system anytime and anywhere.
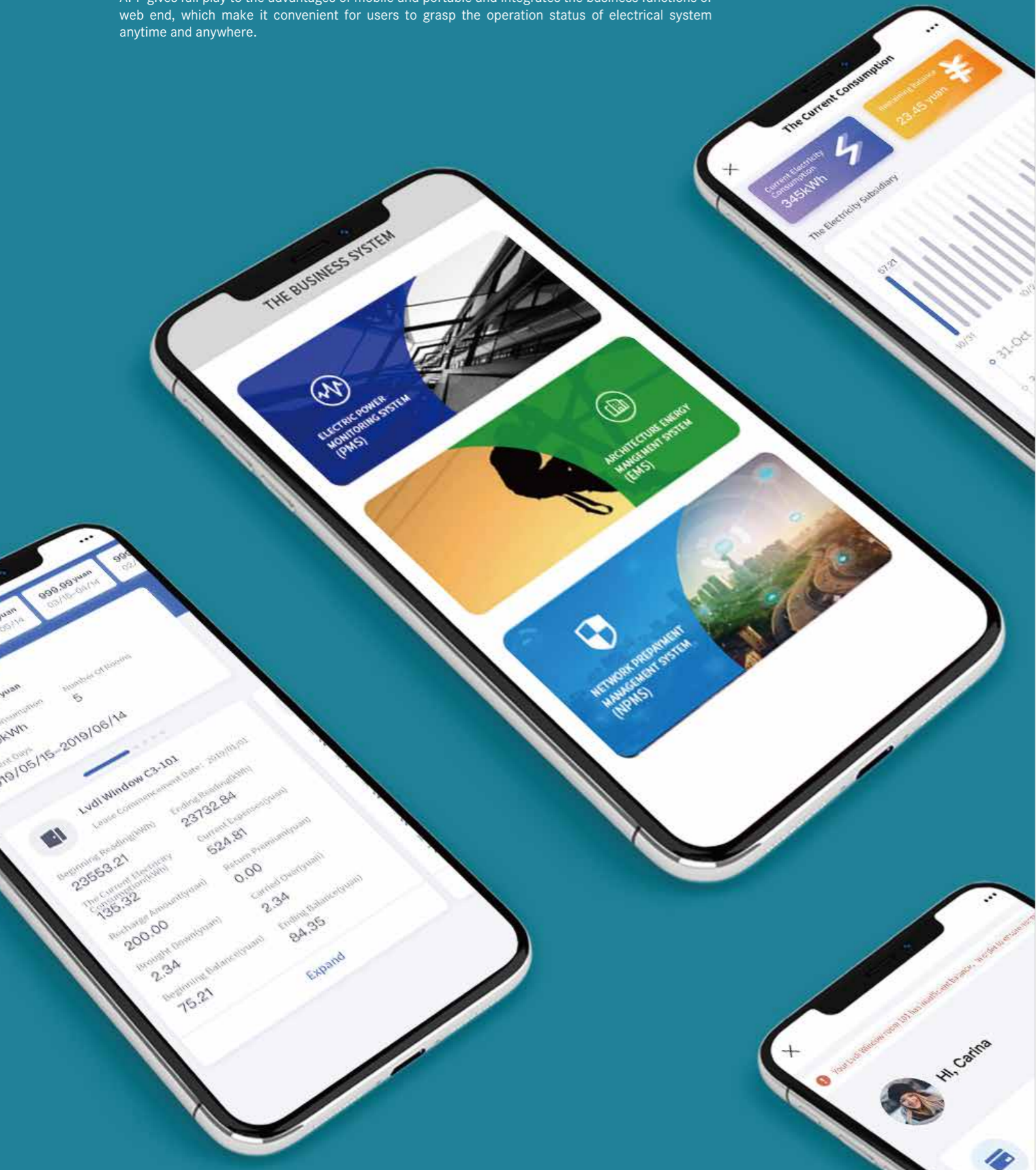
PLATFORM FEATURE

Electric Power Monitoring System (PMS)

The power monitoring system (PMS) integrates various terminal hardware such as smart meters, integrated protection devices, smart circuit breakers, and temperature control meters through network communication equipment to achieve business functions such as data collection, remote control, event alarm, and data analysis, in order to improve the comprehensive management level of users' power distribution.

- Ensure the safety of the power distribution system
- Improve daily inspection efficiency
- Identify key control objects
- Reduce overall operating costs

Network Prepayment Management System (NPMS)

The network prepayment management system NPMS is based on smart meter technology, Internet technology, IT technology and communication technology.This system realizes online monitoring of energy consumption and property charging management with the help of terminal meters.

- Unified platform deployment
- Flexible billing scheme
- Tenant friendly
- Billing design
- Balance alert & Overdraft amount & Ensuring power supply on holidays
- Detailed report records

Elecnova

PLATFORM FEATURE

Architecture Energy Management System (EMS)

Architecture Energy Management System (EMS) takes the concept of networking, integration and intelligence as the design concept. It implements centralized monitoring, measurement and management of energy, water, gas and other energy consumed in buildings.It can perform dynamic trend analysis on statistical data of building energy consumption from various dimensions such as classification, item, partition and household so as to help users grasp the status of building energy consumption, analyze and judge building energy efficiency levels. It plays a role in improving energy efficiency, reducing building energy consumption and optimizing building energy use, and provides detailed data to support the excavation of energy-conservation potential and the evaluation of energy-saving benefit.
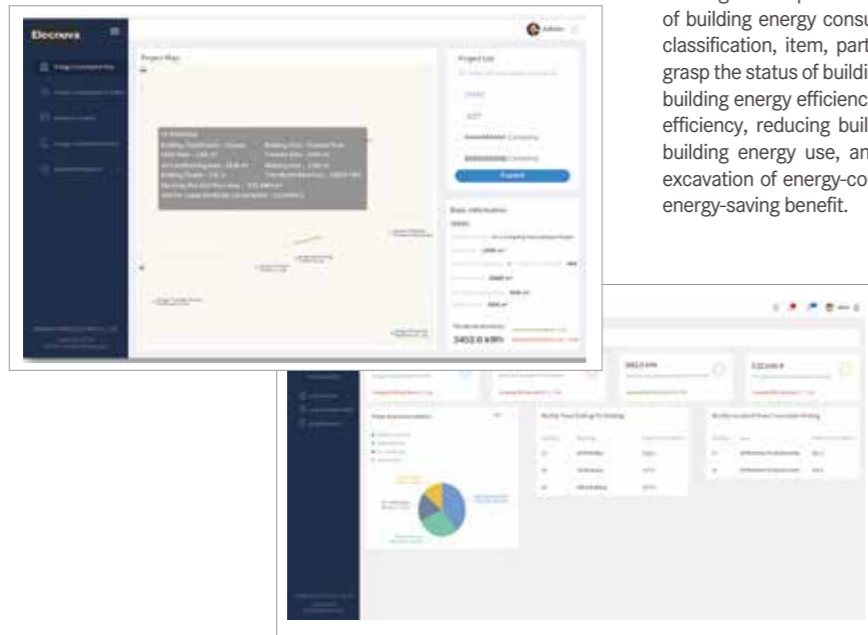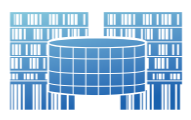
Architecture Energy Management System(EMS)

- Ensure the safety of the power distribution system
- Improve daily inspection efficiency
- Identify key control objects
- Reduce overall operating costs

PROJECTS

- Vietnam
  Viettel Group
- Russian
  VTB Group
- Pakistan
  Gwadar Port
- Hong Kong-Zhuhai-Macao
  Bridge
- ST Telemedia
  Data Center
- Shanghai
  Disneyland
- Raffles
  Medical Group
- Thailand
  Don Mueang Airport
- Stock Exchange Data
  Center in Golden Bridge
- Singapore
  PowerGrid Data Center
- Singapore
  Nanyang Technological University
- Indonesia
  DCI Data Center II, JK5
- Hong Kong
  Hopewell Center
- BCA
  Academy

Visit us for more information http://www.sfere-elec.net

Elecnova