

# MULTI-CIRCUIT MONITORING SYSTEM



FUNCTION

## Multi-Circuit

-Up to 32 three-phase circuits

## Cost Saving

- <20W (Measuring 32 circuits)

## Power Quality

-THD  
-Harmonics up to 63rd  
-Unbalance  
-Sequence component  
-Crest and K factor

## Accuracy

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

## TFT

-TFT, 3.5", 320×240



Multi-circuit  
Cost Saving  
Harmonics  
Energy Accuracy 0.5S  
TFT





## AREAS OF APPLICATION



Data  
Acquisition



Energy  
Management

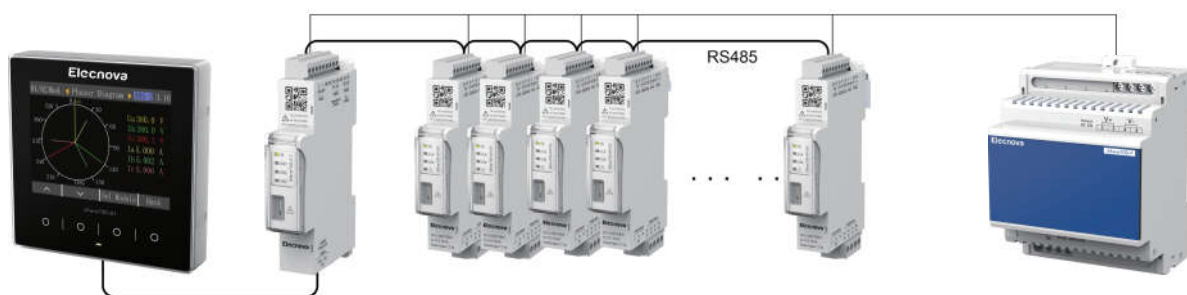


Remote Power  
Monitoring

POWER MONITORING



## PRODUCT COMPONENTS



### Sfere700 SERIES PRODUCTS LIST

One Display Module Sfere700-D1

One Communication Module Sfere700-C1

One Power Supply Module Sfere700-P

32 Monitoring Modules Sfere700-M At Most

Matched Current Transformers

Transfer Modules

Specialized Connection Lines

# Sfere700-M



High Accuracy Measurement  
Compact Design  
Plug Type Wiring Terminals  
Safe Power Supply  
Automatic Networking



## MAIN FEATURES

### High Accuracy Measurement

-Adopt solid current transformer to realize energy accuracy 0.5S

### Compact Design

-18mm width,  
installed near load point, less wiring

### Plug Type Wiring Terminals

-Quick installation

### Safe Power Supply

-DC 24V, wiring safety

### Automatic Networking

-Communication address of module can be set automatically or by manual



## COMPARISON TABLE

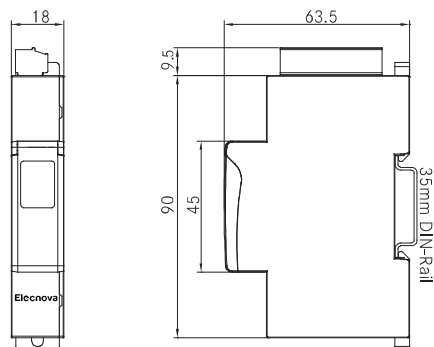


| Model                         | Sfere700-M1 | Sfere700-M2 | Sfere700-M3 |
|-------------------------------|-------------|-------------|-------------|
| V/A/F/P/Q/S/PF                | ■           | ■           | ■           |
| Demand                        | ■           | ■           | ■           |
| Max./Min./Avg. Value          | ■           | ■           | ■           |
| Fundamental V/A/P/Q/S/PF      | —           | —           | ■           |
| ±kWh/±kvarh/kVAh              | ■           | ■           | ■           |
| Four-quadrant Reactive Energy | ■           | ■           | ■           |
| Tariff Energy                 | —           | ■           | ■           |
| Fundamental Energy            | —           | —           | ■           |
| THD                           | ■           | ■           | ■           |
| Harmonics V/A                 | —           | 1st-63rd    | 1st-63rd    |
| Unbalance                     | —           | ■           | ■           |
| Crest Factor/K Factor         | —           | ■           | ■           |
| Flicker                       | —           | —           | ■           |
| Transient                     | —           | —           | ■           |
| Demand Record                 | —           | ■           | ■           |
| Max./Min./Avg. Value record   | —           | ■           | ■           |
| Off-limit Record              | —           | ■           | ■           |
| SOE Record                    | —           | ■           | ■           |
| Digital Input                 | 2           | 2           | 2           |
| Relay Output                  | 1           | 1           | 1           |

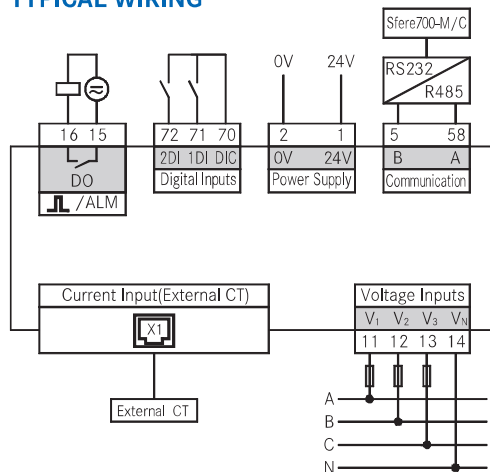
NOTE: "■": Yes "—": No



## DIMENSIONS



## TYPICAL WIRING



## TECHNICAL SPECIFICATION

|                          |                                                                   |                                          |
|--------------------------|-------------------------------------------------------------------|------------------------------------------|
| Environmental Conditions | Operating temperature                                             | -20 °C ~ 70 °C                           |
|                          | Storage temperature                                               | -40 °C ~ 85 °C                           |
|                          | Relative humidity                                                 | ≤95%RH                                   |
|                          | Altitude                                                          | ≤2500m                                   |
| Safe Power Supply        | Working range                                                     | DC: 24V±20%                              |
|                          | Consumption                                                       | ≤0.5W                                    |
| Voltage Input            | Rated value                                                       | 3×220V/380V                              |
|                          | Impedance                                                         | ≥1.7 MΩ/per phase                        |
|                          | Burden                                                            | ≤0.1 VA /per phase                       |
|                          | Overload                                                          | Continuous: 1.2Vn Instantaneous: 2Vn/10s |
|                          | Frequency                                                         | 45Hz~65 Hz                               |
| Current Input            | External CT                                                       |                                          |
| Relay Output             | Contact rated at AC: 0.12A/400V; DC: 0.12A/400V, Isolation: 5kVAC |                                          |
| Digital Input            | 2 dry contact inputs, Isolation: 4kVAC                            |                                          |
| Communication Port       | RS485, Modbus-RTU, 2-wire, up to 9600bps                          |                                          |
| IP Degree                | IP20                                                              |                                          |
| Insulation               | ≥2kVAC                                                            |                                          |

# Sfere700-D1



Display  
Button  
Breathing Light  
Simple Installation  
Compact Design  
High IP  
Safe Power Supply



POWER MONITORING



## MAIN FEATURES

### Display

-3.5" TFT, 320×RGB×240, 16.7M colors

### Button

-Capacitive buttons

### Breathing Light

-LCD OFF: 1Hz  
-Alarm: 2Hz

### Simple Installation

-Screw mounting, plastic accessories are suitable for different cut-out sizes

### Compact Design

-Panel thickness 18mm, RJ12 connection cable, small occupied space in cabinet

### High IP

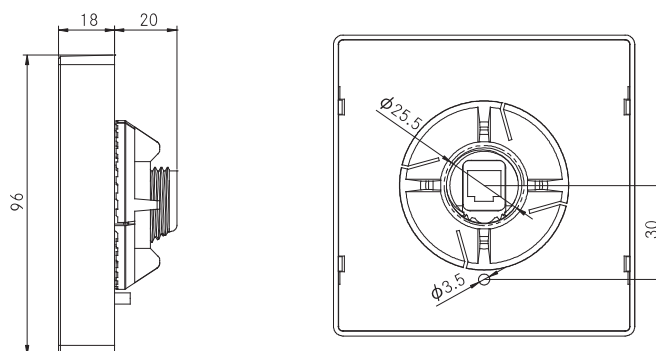
-IP67

### Safe Power Supply

-DC 24V, wiring safety

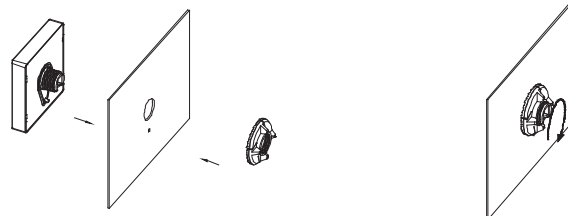
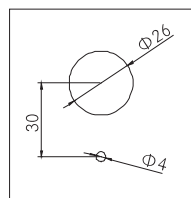


## DIMENSIONS

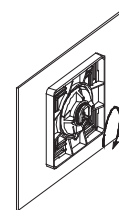
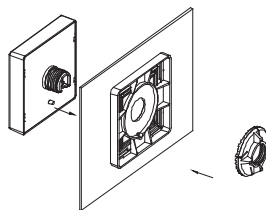
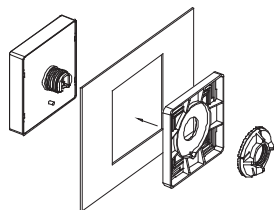


## INSTALLATION

### Installation Method 1



### Installation Method 2 (Used for Cut-out Size 91×91mm, 76×76mm, 67×67mm)



## TECHNICAL SPECIFICATION

|                       |                                     |
|-----------------------|-------------------------------------|
| Connection            | RJ12 cable                          |
| Display               | 3.5" TFT, 320×RGB×240, 16.7m colors |
| Button                | 4 Capacitive buttons with backlight |
| Breathing Light       | LCD OFF: 1Hz, Alarm: 2Hz            |
| IP Degree             | Front: IP67                         |
| Operating Temperature | -20 °C ~ 70 °C                      |
| Storage Temperature   | -30 °C ~ 80 °C                      |
| Relative Humidity     | ≤95%RH                              |
| Safe Power Supply     | (24±20%)VDC                         |
| Consumption           | ≤2W                                 |

# Sfere700-C1



3 RS485 Ports  
DIN-rail Mounting  
Safe Power Supply



POWER MONITORING



## FUNCTION

### 3 RS485 Ports

-Sfere700-C1 has three communication ports. One port is used to connect to Sfere700-D1 by adopting RJ12, and the other two ports are used to connect to Sfere700-M and communication manager by adopting plug terminals.



## MAIN FEATURES

### DIN-rail Mounting

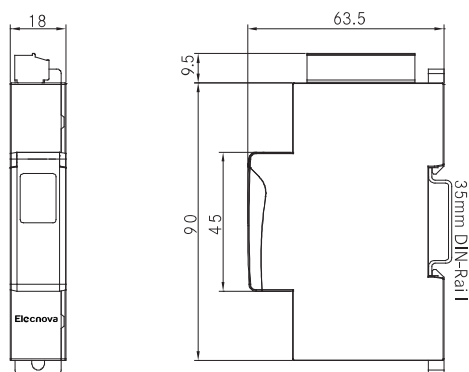
-Small occupied space

### Safe Power Supply

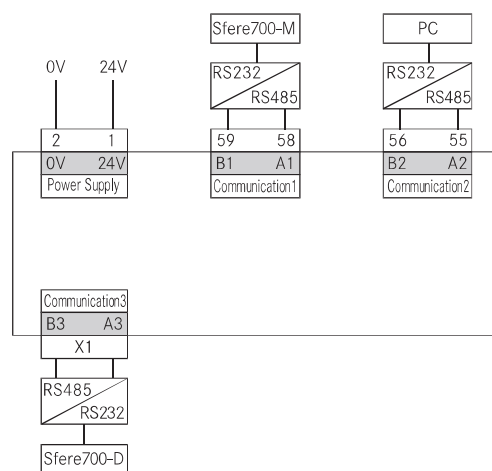
-DC 24V, wiring safety



## DIMENSIONS



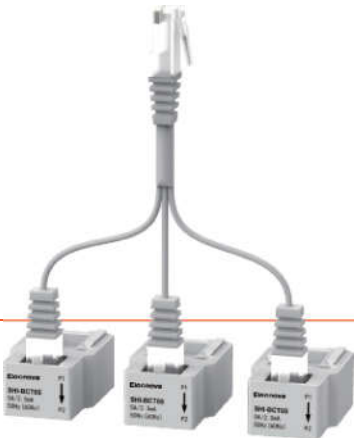
## TYPICAL WIRING



## TECHNICAL SPECIFICATION

|                          |                                   |
|--------------------------|-----------------------------------|
| Operating Temperature    | -20 °C ~ 70 °C                    |
| Storage Temperature      | -20 °C ~ 70 °C                    |
| Relative Humidity        | ≤95%RH                            |
| Altitude                 | ≤2500m                            |
| IP Degree                | IP20                              |
| Insulation               | ≥2kVAC                            |
| Safe Power Supply        | DC 24V                            |
| Consumption              | ≤0.5W                             |
| Communication Port(COM3) | RS485, Modbus-RTU, up to 38.4kbps |

# CURRENT TRANSFORMER



## SOLID CORE CT



| Model                 | SHI-BCT05 | SHI-BCT100 | SHI-BCT200 | SHI-BCT400 | SHI-BCT600 |
|-----------------------|-----------|------------|------------|------------|------------|
| Rated Current         | 5A        | 100A       | 200A       | 400A       | 600A       |
| Maximum Current       | 10A       | 120A       | 240A       | 480A       | 720A       |
| Accuracy              | 0.1%      | 0.1%       | 0.1%       | 0.1%       | 0.1%       |
| Isolation Voltage     | 4kVAC     | 4kVAC      | 4kVAC      | 4kVAC      | 4kVAC      |
| Operating Temperature | -40℃~70℃  | -40℃~70℃   | -40℃~70℃   | -40℃~70℃   | -40℃~70℃   |
| Storage Temperature   | -40℃~70℃  | -40℃~70℃   | -40℃~70℃   | -40℃~70℃   | -40℃~70℃   |
| Diameter(mm)          | 8         | 18         | 24         | 29         | 29         |
| Dimension(mm)         | 28×18×44  | 36×20×59   | 60×20×80   | 75×22.5×95 | 75×22.5×95 |

## SPLIT CORE CT



| Model                 | SHI-SCT05  | SHI-SCT100 | SHI-SCT200 | SHI-SCT400 | SHI-BCT600 |
|-----------------------|------------|------------|------------|------------|------------|
| Rated Current         | 5A         | 100A       | 200A       | 400A       | 600A       |
| Maximum Current       | 6A         | 120A       | 240A       | 480A       | 720A       |
| Accuracy              | 1%         | 0.5%       | 0.5%       | 0.5%       | 0.5%       |
| Isolation Voltage     | 4kVAC      | 4kVAC      | 4kVAC      | 4kVAC      | 4kVAC      |
| Operating Temperature | -40℃ ~ 70℃ | -40℃ ~ 70℃ | -40℃ ~ 70℃ | -40℃ ~ 70℃ | -40℃ ~ 70℃ |
| Storage Temperature   | -40℃ ~ 70℃ | -40℃ ~ 70℃ | -40℃ ~ 70℃ | -40℃ ~ 70℃ | -40℃ ~ 70℃ |
| Diameter(mm)          | 10         | 16         | 24         | 35         | 35         |
| Dimension(mm)         | 29×27×42   | 30×31×53   | 44×39×70   | 57×41×84   | 57×41×84   |

## FLEXIBLE CT



| Model                 | SHI-FCT600 | SHI-FCT1000 | SHI-FCT2000 | SHI-FCT3000 |
|-----------------------|------------|-------------|-------------|-------------|
| Rated Current         | 600A       | 1000A       | 2000A       | 3000A       |
| Range                 | 60~720A    | 100~1200A   | 200~2400A   | 300~3600A   |
| Accuracy              | 1%         | 1%          | 1%          | 1%          |
| Lead Length           | 2m         | 2m          | 2m          | 2m          |
| Operating Temperature | -20℃ ~ 70℃ | -20℃ ~ 70℃  | -20℃ ~ 70℃  | -20℃ ~ 70℃  |
| Storage Temperature   | -30℃ ~ 90℃ | -30℃ ~ 90℃  | -30℃ ~ 90℃  | -30℃ ~ 90℃  |
| Diameter(mm)          | 65         | 95          | 95          | 95          |

# SFERE700-P



DIN Rail Mounted  
Safe Power Supply  
Cable Length



POWER MONITORING



FUNCTION

## DIN Rail Mounted

-Quick installation

## Safe Power Supply

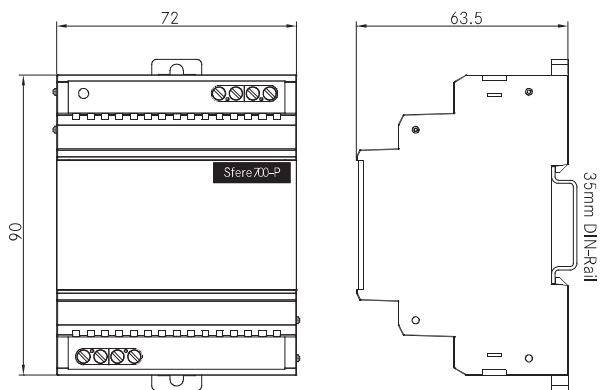
-DC 24V, wiring safety

## Cable Length

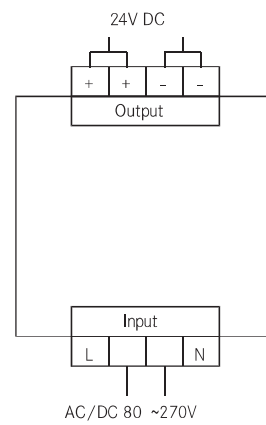
-Power supply cable length  $\leq 100m$



## DIMENSIONS



## TYPICAL WIRING



## TECHNICAL SPECIFICATION

|                   |                |
|-------------------|----------------|
| Safe Power Supply | AC/DC 80V~270V |
| Output Voltage    | DC: 24V        |
| Output Power      | ≤20W           |
| Accuracy          | ±1%            |
| Effectiveness     | ≥75%           |
| Insulation        | ≥2kVAC         |