



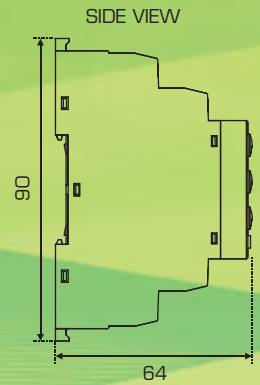
ELECTRICAL COMPONENTS SDN BHD

THE FIRST CHOICE IN ENERGY EFFICIENCY

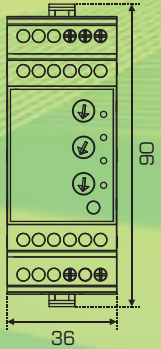
PFR1ELC00001

- **Supply Voltage Device From 230vac - 50/60hz**
 - Single-phase: 230 Vac - 1ph Mode (L+n)
 - Three-phase: 3 X 400 Vac - 1ph Mode (L1 Or L2 Or L3+n)
 - Three-phase: 3 X 230 Vac - 3ph Mode (L1+I2)
- **Monitoring:**
 - Cos ϕ Inductive & Capacitive
 - Neutral To Phase Voltage & Current
 - Sensitivity
 - Alarms
- **Manual or Automatic Operation**
- **Sensitivity Adjustable**

DIMENSIONS (mm)



FRONT VIEW



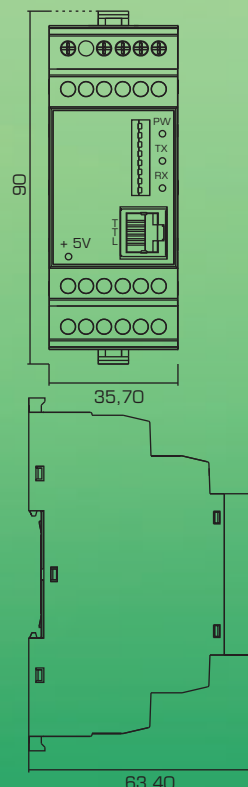
| SPECIFICATIONS | UNIT | PFR1ELC00001 |
|------------------------------------|-------|------------------------------|
| SupplyVoltage | VAC | 230 |
| OperatingLimits (Ue) | % | -15 to +10 |
| RatedFrequency | Hz | 50 or 60 |
| Power Consumption L/N - 230VAC | VA | 3.0 |
| ImmunityTime For Microbreakings | ms | <6 |
| DisplayType | - | 4 x LED Red |
| RatedCurrent | A | 5 |
| VoltageReading Limits (N/Lx] | VAC | 196 to 253 |
| CurrentReading Limits | A | 0.125 to 5.5 |
| MeasuringValues | RMS | Real Effective Value |
| PowerFactor Adj. | - | 0.91 Ind. - 0.96 Cap |
| Numberof Output | Relay | 1 |
| Contact Capacity | - | 5A - 250VAC (AC1) |
| Working temperature | °C | -10 /+50 |
| Storage temperature | °C | -30 /+70 |
| Electrical Insulation | KV | 4 |
| Protection degree | IP | 41 Front - 20 Terminal Block |
| Relative Humidity w/o condensation | RH-% | 95 |
| BoxType | mm | 2M - DIN module |
| Dimensions | mm | 90 x 36 x 64 |
| Weight | g | 140 |

PFRAELCOU485

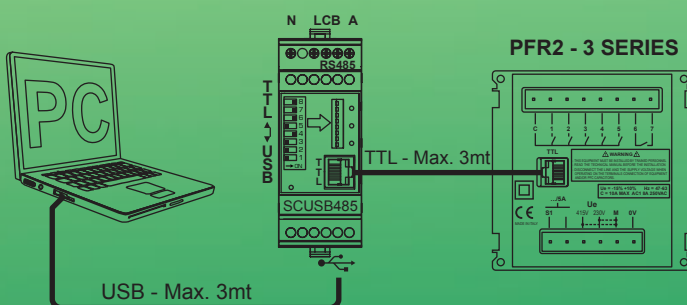
TTL-USB Adapter

- USB And RS-485 Serial Interface With Cables
- Surge Protection On RS-485 Line
- Connect Remote Serial Device To A PC
- One Serial Server Creates One Virtual Com-port On A PC
- Power And Data Flow Indicator For Troubleshooting
- The RS-485 Standard Supports Half-duplex (2 Wire)
- Real Time Transfer Ascii Protocol
- Compact Size - 2 Module - 35mm
- Easy To Setup And Install Din Rail

DIMENSIONS (mm)



WIRING DIAGRAM





ELECTRICAL COMPONENTS SDN BHD

THE FIRST CHOICE IN ENERGY EFFICIENCY

PFR2ELC00004 / PFR2ELC00006

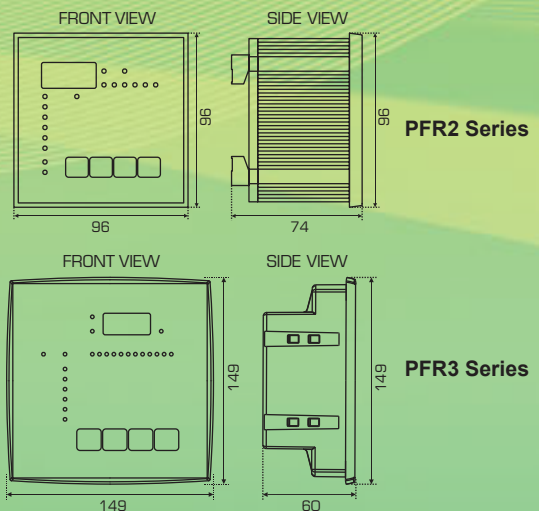


PFR3ELC00008 / PFR3ELC00012

PFR2ELC00004 / PFR2ELC00006 PFR3ELC00008 / PFR3ELC00012

- **Measurement**
 - Cos ϕ Inductive & Capacitive
 - Phase To Phase Voltage & Current
 - Reactive Power Needed
 - Cos ϕ Desired
 - Total Harmonic Distorsion
 - Sensitivity
 - Ambient Temperature
- **Autorecognized Capacitor Bank**
- **Anti-hunting Function**
- **Fixed Step Programmable**
- **Function & Alarm Relay Programmable**
- **Fan Relay Programmable**
- **RJ11 - Ttl Standard - Serial Interface (Optional)**
 - Owner / Modbus RTU Communication Protocol

DIMENSIONS (mm)



| SPECIFICATIONS | UNIT | PFR2ELC00004 | PFR2ELC00006 | PFR3ELC00008 | PFR3ELC00012 |
|------------------------------------|-------|--|--------------|--|--------------|
| SupplyVoltage | VAC | 220 to 440 | | 220 to 440 | |
| OperatingLimits (Ue) | % | -15 to +10 | | -15 to +10 | |
| RatedFrequency | Hz | 50 or 60 | | 50 or 60 | |
| Power Consumption L/L - 400VAC | VA | 5.8 | | 6.1 | |
| ImmunityTime For Microbreakings | ms | <6 | | <6 | |
| DisplayType | - | 1 Display - 3 Digit - 7 Segment | | 1 Display - 3 Digit - 7 Segment | |
| RatedCurrent (CT) | A | 5 | | 5 | |
| VoltageReading Limits (Lx/Lx) | VAC | 180 to 485 | | 195 to 460 | |
| CurrentReading Limits (CT) | A | 0.125 to 5.5 | | 0.125 to 5.5 | |
| MeasuringValues | TRMS | True Real Effective Value | | True Real Effective Value | |
| PowerFactor Adj. | - | 0.85 Inductive - 0.95 Capacitive | | 0.85 Inductive - 0.95 Capacitive | |
| FFT - Harmonic Spectrum | THD% | 64 st | | 64 st | |
| Numberof Output | Relay | 4 | 6 | 8 | 12 |
| Serial Interface | - | TTL - standard | | TTL - standard | |
| Communication Protocol | - | Owner - Modbus RTU | | Owner - Modbus RTU | |
| Connector Type | - | RJ11 | | RJ11 | |
| Working temperature | °C | -10 /+50 | | -10 /+50 | |
| Storage temperature | °C | -30 /+70 | | -30 /+70 | |
| Electrical Insulation | kV | 4 | | 4 | |
| Protection degree | IP | 41 Front Cover - 20 Terminal Block Connections | | 41 Front Cover - 20 Terminal Block Connections | |
| Relative Humidity w/o condensation | RH% | 95 | | 95 | |
| BoxType | mm | Flush Mount | | Flush Mount | |
| Dimensions | mm | 96 x 96 x 74 | | 149 x 149 x 60 | |
| Weight | g | 350 | 370 | 650 | 700 |