MICROIDEA®

PRODUCT CATALOGUE

2020

PRESENTAZIONE AZIENDALE

MICROIDEA®

Via Serio, 39 - 24021 ALBINO (BG) Italy – ☎ +39.035.773 925/15

Microidea srl è situata in Albino - BG - ed ha oltre 30 anni di esperienza nell'assemblaggio, studio e sviluppo di soluzioni per l'automazione industriale e prodotti personalizzati.

Noi sviluppiamo e prototipiamo su richiesta ogni tipo di asservimento hardware e software come inverter per energie rinnovabili, apparecchiature per la pulizia domestica ed industriale, sterilizzazioni in campo medicale, comunicazioni e nel settore ferroviario ed automobilistico.
Abbiamo anche una ns. linea dedicata di alimentatori, caricabatterie, timers e relè, apparecchiature per il controllo dell'energia reattiva, commutatori di rete per applicazioni industriali.

Siamo a vostra disposizione per ogni tipo di produzione ed assemblaggio (5000 mq di area produttiva) e per studiare e sviluppare per voi ogni nuovo progetto.

COMPANY PRESENTATION

+39.035.773 933 - microidea@microidea.it - www.microidea.it

Microidea srl is located in Albino - BG - has a 30 years experience in assembling, study and development of industrial automation products and custom projects.

We develop and prototype on demand every kind of servo-hardware/sw controls like inverters for renewable energy, domestic care, medical, communications, rail transport applications and automotive.
We also have our own line of power supply, battery chargers, timers and relay, power factor control and genset for every industrial applications.

We are at your disposal for every production and assembly need, (production area actually sizes 5000 square meters) and study and development for every new project.

DPFC 1PH 1 STEP Power Factor Controllers

- ▶ SUPPLY VOLTAGE DEVICE FROM 230V~ - 50/60Hz
  - SINGLE-PHASE: 230 V~ - 1PH MODE (L+N)
  - THREE-PHASE: 3 x 400 V~ - 1PH MODE (L1 or L2 or L3+N)
  - THREE-PHASE: 3 x 230 V~ - 3PH MODE (L1+L2)
  - For other supply voltages, please contact our sales department
- ▶ MONITORING:
  - COSφ INDUCTIVE & CAPACITIVE
  - NEUTRAL TO PHASE VOLTAGE & CURRENT
  - SENSITIVITY
  - ALARMS
- ▶ MANUAL OR AUTOMATIC OPERATION
- ▶ SENSITIVITY ADJUSTABLE
- ▶ COMPACT SIZE - 2 MODULE - 35mm
- ▶ DIN RAIL MOUNTING EN50.022
- ▶ SELF-EXTINGUISHED MATERIAL UL94 V0

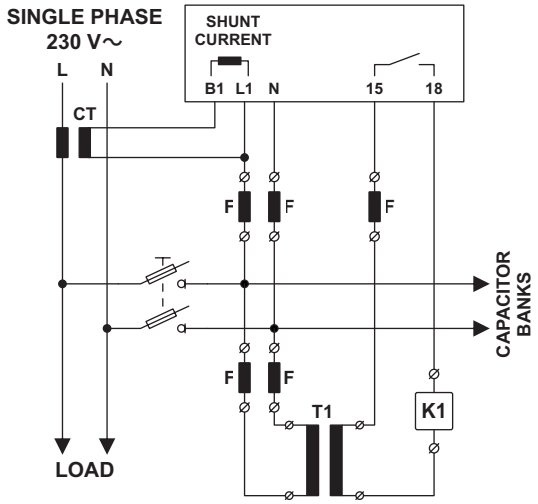
EU Directives - CE Marking:

> 2014/30/UE - EMC
> 2014/35/UE - LVD

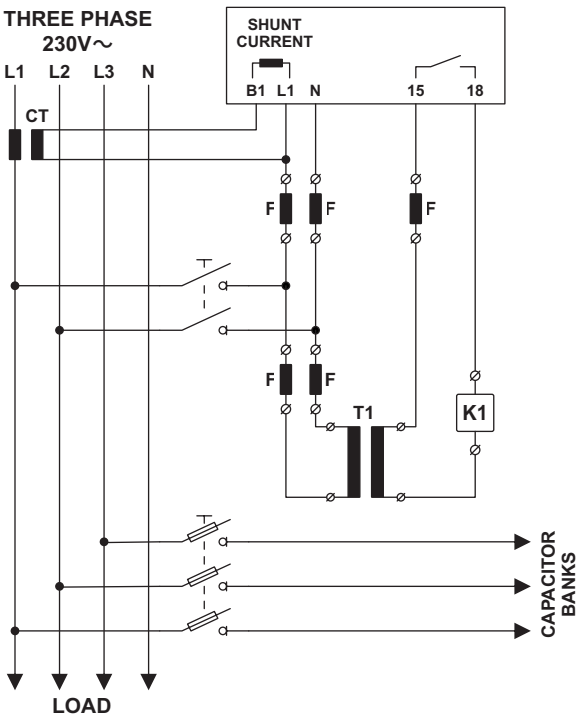
TECHNICAL DATA

	UNIT	DPFC01D
Supply voltage AC	V~	230
Operating Limits (Ue)	%	-15 / +10
Nominal Frequency	Hz	50 - 60 (range 47 - 63)
Power Consumption (max. AC)	VA	3.0
Immunity Time For Microbreakings	ms	< 6
Display Type	-	4 x LED Red
Rated Current	A	5
Voltage Reading Limits (N/Lx)	V~	196 - 253
Current Reading Limits	A	0.125 - 5.5
Measuring Values	-	RMS
Power Factor Correction	-	0.91 Ind - 0.96 Cap
Number of Output	Relay	1
Contact Capacity	-	5A - 250V~ (AC1)
Working temperature	°C	-10 / +50
Storage temperature	°C	-30 / +70
Electrical Insulation	kV	4
Overvoltage Category	-	II
Protection degree	IP	20
Pollution degree	-	2
Relative Humidity w/o cond.	RH%	90
Altitude up to	m	2000
Weight	g	140
Dimensions	mm	98 x 36 x 64

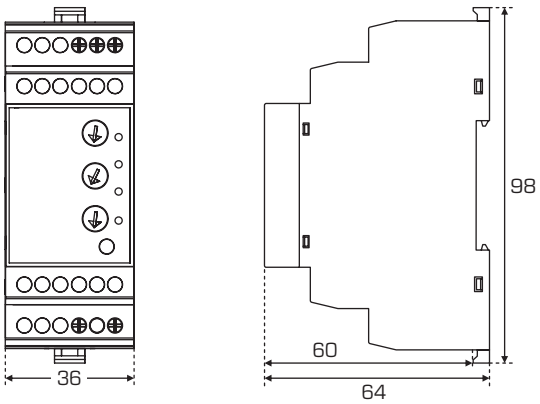
WIRING DIAGRAM - 1PH 230V~



WIRING DIAGRAM - 3PH 230V~



DIMENSIONS (mm)



DPFC 1PH 4-6 STEPS Power Factor Controllers

- ▶ MEASUREMENTS: - COSφ INDUCTIVE & CAPACITIVE
  - PHASE TO PHASE VOLTAGE & CURRENT
  - REACTIVE POWER NEEDED
  - COSφ DESIRED
  - TOTAL HARMONIC DISTORSION
  - SENSITIVITY
  - AMBIENT TEMPERATURE
- ▶ AUTORECOGNIZED CAPACITOR BANK
- ▶ ANTI-HUNTING FUNCTION
- ▶ FIXED STEP PROGRAMMABLE
- ▶ RELAY PROGRAMMABLE FOR ALARM OR FAN
- ▶ RJ11 - TTL STANDARD - SERIAL INTERFACE
- ▶ SELF-EXTINGUISHED MATERIAL UL94 V0
- ▶ AVAILABLE ON REQUEST: - DIN RAIL VERSION
  - SUPPLY 110V~
  - CT 1A

RoHS 2 COMPLIANT

CE

EU Directives - CE Marking:

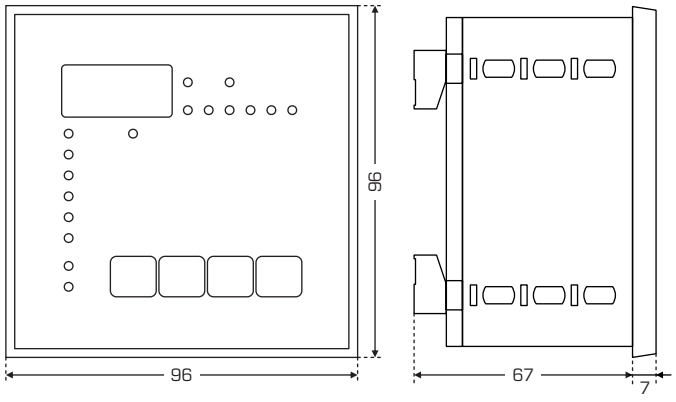
> 2014/30/UE - EMC
> 2014/35/UE - LVD

TECHNICAL DATA

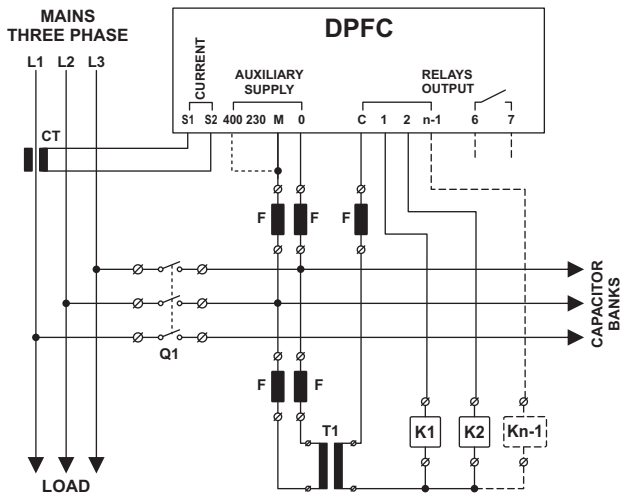
	UNIT	DPFC04A	DPFC06A
Supply voltage AC	V~	230 - 400 (range 220 - 440)	
Operating Limits (Ue)	%	-15 / +10	
Nominal Frequency	Hz	50 - 60 (range 47 - 63)	
Power Consumption (max. AC)	VA	5.8	
Immunity Time For Microbreakings	ms	< 6	
Display Type	-	1 Display - 3 Digit - 7 Segment	
Rated Current (CT)	A	5	
Voltage Reading Limits (L/Lx)	V~	180 - 485	
Current Reading Limits (CT)	A	0.125 - 5.5	
Measuring Values	-	True RMS	
Power Factor Correction	-	0.85 Inductive - 0.95 Capacitive	
FFT - Harmonic Spectrum	THD %	64 st	
Number of Output	Relay	4	6
Serial Interface	-	TTL - standard	
Communication Protocol	-	Owner - Modbus RTU	
Connector Type	-	RJ11	
Working temperature	°C	-10 / +50	
Storage temperature	°C	-30 / +70	
Electrical Insulation	kV	4	
Overvoltage Category	-	II	
Protection degree	IP	41 Front Cover - 20 Terminal Block Connections	
Pollution degree	-	2	
Relative Humidity w/o cond.	RH%	90	
Altitude up to	m	2000	
Weight	g	350	370
Dimensions	mm	96 x 96 x 74	

OPTIONAL

DIMENSIONS (mm)



WIRING DIAGRAM



DPFC 1PH 4-6-8-12 STEPS Power Factor Controllers

- ▶ MEASUREMENTS: - COSφ INDUCTIVE & CAPACITIVE
  - PHASE TO PHASE VOLTAGE & CURRENT
  - REACTIVE POWER NEEDED
  - COSφ DESIRED
  - TOTAL HARMONIC DISTORSION
  - SENSITIVITY
  - AMBIENT TEMPERATURE
- ▶ AUTORECOGNIZED CAPACITOR BANK
- ▶ ANTI-HUNTING FUNCTION
- ▶ FIXED STEP PROGRAMMABLE
- ▶ RELAY PROGRAMMABLE FOR ALARM OR FAN
- ▶ RJ11 - TTL STANDARD - SERIAL INTERFACE
- ▶ SELF-EXTINGUISHED MATERIAL UL94 V0
- ▶ AVAILABLE ON REQUEST: - SUPPLY 110V~
  - CT 1A

RoHS 2 COMPLIANT

CE

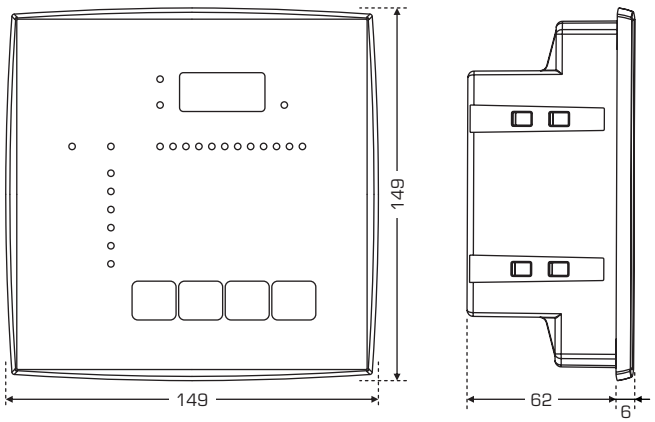
EU Directives - CE Marking:

> 2014/30/UE - EMC
> 2014/35/UE - LVD

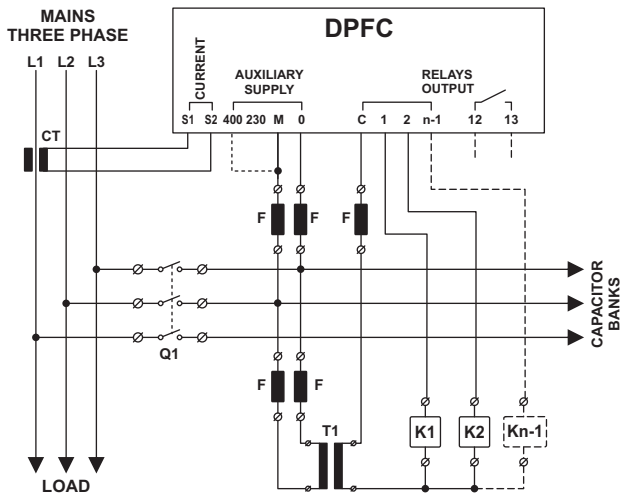
TECHNICAL DATA

	UNIT	DPFC04B	DPFC06B	DPFC08B	DPFC12B
Supply voltage AC	V~	230 - 400 (range 220 - 440)			
Operating Limits (Ue)	%	-15 / +10			
Nominal Frequency	Hz	50 - 60 (range 47 - 63)			
Power Consumption (max. AC)	VA	6.1			
Immunity Time For Microbreakings	ms	< 6			
Display Type	-	1 Display - 3 Digit - 7 Segment			
Rated Current (CT)	A	5			
Voltage Reading Limits (Lx/Lx)	V~	195 - 460			
Current Reading Limits (CT)	A	0.125 - 5.5			
Measuring Values	-	True RMS			
Power Factor Correction	-	0.85 Inductive - 0.95 Capacitive			
FFT - Harmonic Spectrum	THD %	64 st			
Number of Output	Relay	4	6	8	12
Serial Interface	-	TTL - standard			
Communication Protocol	-	Owner - Modbus RTU			
Connector Type	-	RJ11			
Working temperature	°C	-10 / +50			
Storage temperature	°C	-30 / +70			
Electrical Insulation	kV	4			
Overvoltage Category	-	II			
Protection degree	IP	41 Front Cover - 20 Terminal Block Connections			
Pollution degree	-	2			
Relative Humidity w/o cond.	RH%	90			
Altitude up to	m	2000			
Weight	g	520	540	650	700
Dimensions	mm	149 x 149 x 68			

DIMENSIONS (mm)



WIRING DIAGRAM



DPFC 3PH 6-12 STEPS Power Factor Controllers

- ▶ MEASUREMENTS: - COSφ INDUCTIVE & CAPACITIVE
  - THREE PHASE VOLTAGE & CURRENT
  - POWER: W - VAr - VA (Real - Reactive - Apparent)
  - TOTAL HARMONIC DISTORSION V - I
  - WORK HOURS
  - AMBIENT TEMPERATURE
  - ALARMS
- ▶ AUTORECOGNIZED CAPACITOR BANK
- ▶ ANTI-HUNTING FUNCTION
- ▶ FIXED STEP PROGRAMMABLE
- ▶ RELAY PROGRAMMABLE FOR ALARM OR FAN
- ▶ RJ11 - TTL STANDARD - SERIAL INTERFACE
- ▶ SELF-EXTINGUISHED MATERIAL UL94 V0

RoHS 2 COMPLIANT

CE

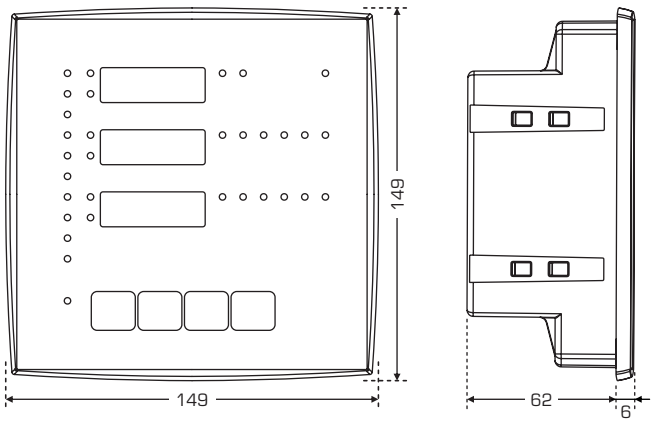
EU Directives - CE Marking:

> 2014/30/UE - EMC
> 2014/35/UE - LVD

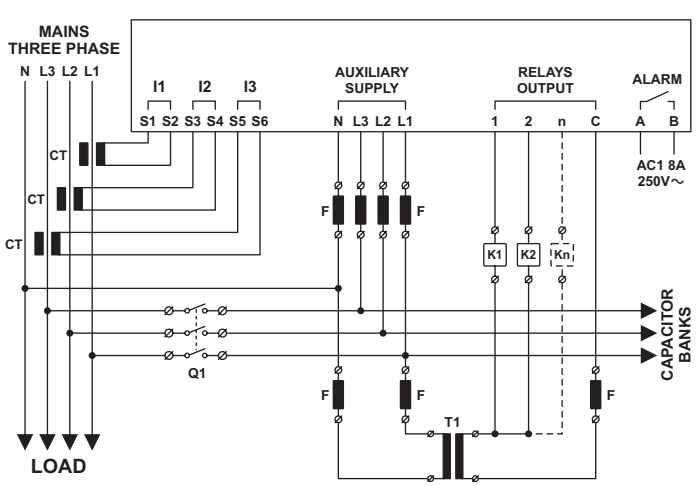
TECHNICAL DATA

	UNIT	DPFC06B3	DPFC12B3
Supply voltage AC	V~	3 x 400 +N	
Operating Limits (Ue)	%	-15 / +10	
Nominal Frequency	Hz	50 - 60 (range 47 - 63)	
Power Consumption (max. AC)	VA	12	
Immunity Time For Microbreakings	ms	< 6	
Display Type	-	3 Display - 4 Digit - 7 Segment	
Rated Current (CT)	A	5	
Voltage Reading Limits (N/Lx)	V~	110 - 265	
Current Reading Limits (CT)	A	0.125 - 5.5	
Measuring Values	-	True RMS	
Power Factor Correction	-	0.85 Inductive - 0.95 Capacitive	
FFT - Harmonic Spectrum	THD %	64 st	
Number of Output	Relay	6	12
Serial Interface	-	TTL - standard	
Communication Protocol	-	Owner - Modbus RTU	
Connector Type	-	RJ11	
Working temperature	°C	-10 / +50	
Storage temperature	°C	-30 / +70	
Electrical Insulation	kV	4	
Overvoltage Category	-	II	
Protection degree	IP	41 Front Cover - 20 Terminal Block Connections	
Pollution degree	-	2	
Relative Humidity w/o cond.	RH%	90	
Altitude up to	m	2000	
Weight	g	720	770
Dimensions	mm	149 x 149 x 68	

DIMENSIONS (mm)



WIRING DIAGRAM



EPFCB 7-13 STEPS LCD Power Factor Controllers

- EASIER PROGRAMMING
- 4 QUADRANTS OPERATIVITY
- LCD GRAPHIC DISPLAY
- LIGHTED KEYBOARD
- MEASURE CIRCUIT SEPARATED FROM SUPPLY
- COMM PORTS: RS485 MODBUS RTU/ETHERNET (optional)
- NTC EXTERNAL PROBE FOR TEMP MONITORING (optional)
- INSTANT SYSTEM STATUS VIEW (VISIO system)
- DOUBLE Cosφ PROGRAMMABLE
- SELF-EXTINGUISHED MATERIAL UL94 V0

AVAILABLE NEW PRODUCT NOW

RoHS 2 COMPLIANT

CE

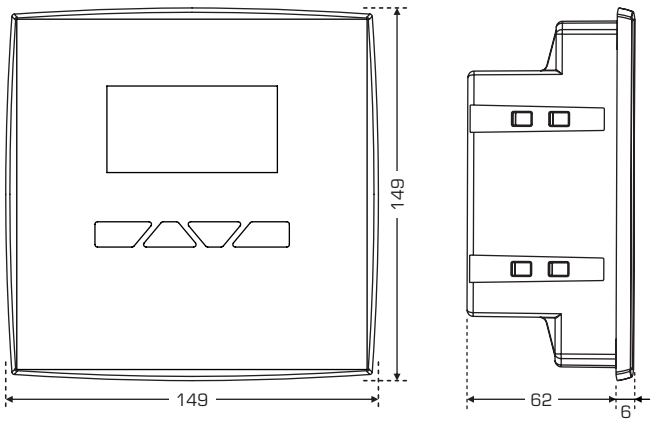
EU Directives - CE Marking:

> 2014/30/UE - EMC
> 2014/35/UE - LVD

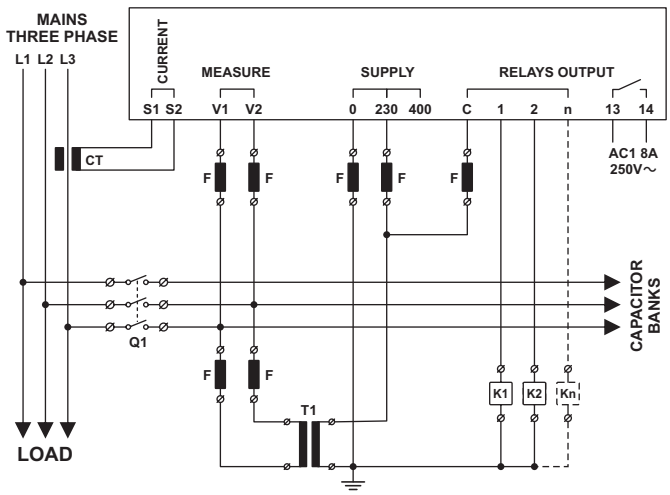
TECHNICAL DATA

	UNIT	EPFCB07	EPFCB13
Supply voltage AC	V~	230 - 400 (range 220 - 440)	
Operating Limits (Ue)	%	-15 / +10	
Nominal Frequency	Hz	50 - 60 (range 47 - 63)	
Power Consumption (max. AC)	VA	5.5	
Immunity Time For Microbreakings	ms	< 30	
Display Type	-	64x128 Dot Matrix LCD COG	
Rated Current (CT)	A	1 or 5	
Voltage Reading Limits (N/Lx)	V~	10 - 460	
Current Reading Limits (CT)	A	0.020 - 5.5	
Measuring Values	-	True RMS	
Power Factor Correction	-	0.85 Ind - 0.95 Cap (operates in all Four-Quadrants)	
FFT - Harmonic Spectrum	THD %	64 st	
Number of Output	Relay	7	13
Serial Interface	-	RS-485 (not insulated)	
Communication Protocol	-	Owner - Modbus RTU or TCP/IP	
Working temperature	°C	-10 / +50	
Storage temperature	°C	-30 / +70	
Electrical Insulation	kV	4	
Overvoltage Category	-	II	
Protection degree	IP	41 Front Cover - 20 Terminal Block Connections	
Pollution degree	-	2	
Relative Humidity w/o cond.	RH%	90	
Altitude up to	m	2000	
Weight	g	650	730
Dimensions	mm	149 x 149 x 68	

DIMENSIONS (mm)



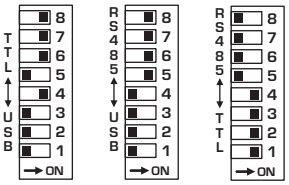
WIRING DIAGRAM



SCUSB485 ADAPTER USB <=> RS-485 <=> TTL

- 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
- DIN RAIL MOUNTING EN50.022
- SELF-EXTINGUISHED MATERIAL UL94 V0

DIP-SWITCH CONFIGURATION



Windows 10 Compatible

RoHS 2 COMPLIANT

CE

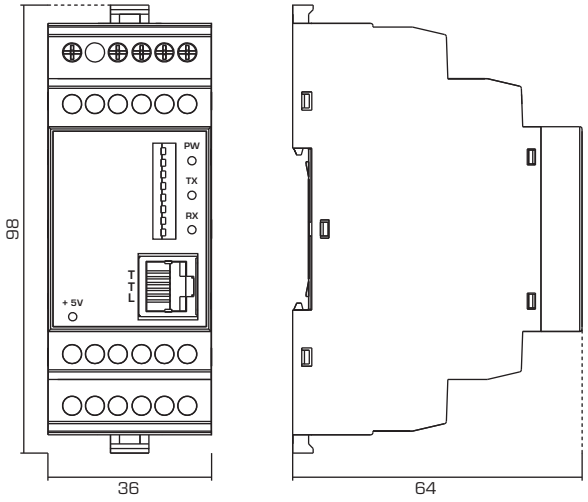
EU Directives - CE Marking:

> 2014/30/UE - EMC
> 2014/35/UE - LVD

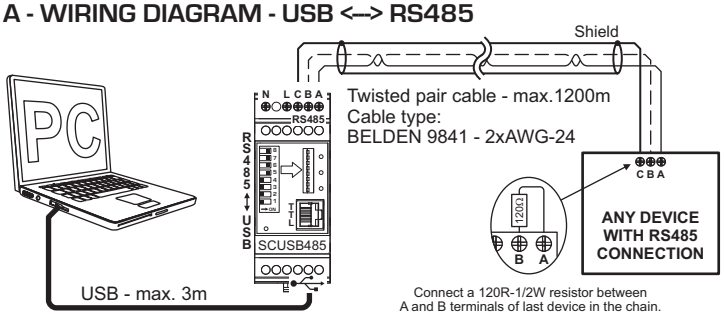
TECHNICAL DATA

	UNIT	SCUSB485
Supply voltage AC	V~	230
Operating Limits (Ue)	%	-15 / +10
Nominal Frequency	Hz	50 - 60 (range 47 - 63)
Power Consumption (max. AC)	VA	2.7
Serial Interface	-	1 USB + 1 RS-485
Protocol Type	-	Owner - Modbus RTU - ASCII
Baud Rate	kbit/s	up to 115.2
Max device connection (TTL/RS-485)	n°	1...99
Working temperature	°C	-10 / +50
Storage temperature	°C	-30 / +70
Electrical Insulation (USB_TTL/RS485)	kV	1
Electrical Insulation (N_L/RS485)	kV	3
Overvoltage Category	-	II
Protection degree	IP	20
Pollution degree	-	2
Relative Humidity w/o cond.	RH%	95
Altitude up to	m	2000
Weight	g	90
Dimensions	mm	98 x 36 x 64

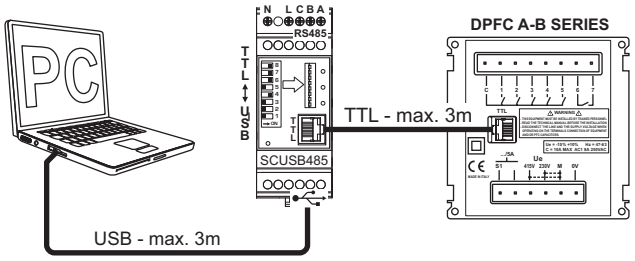
DIMENSIONS (mm)



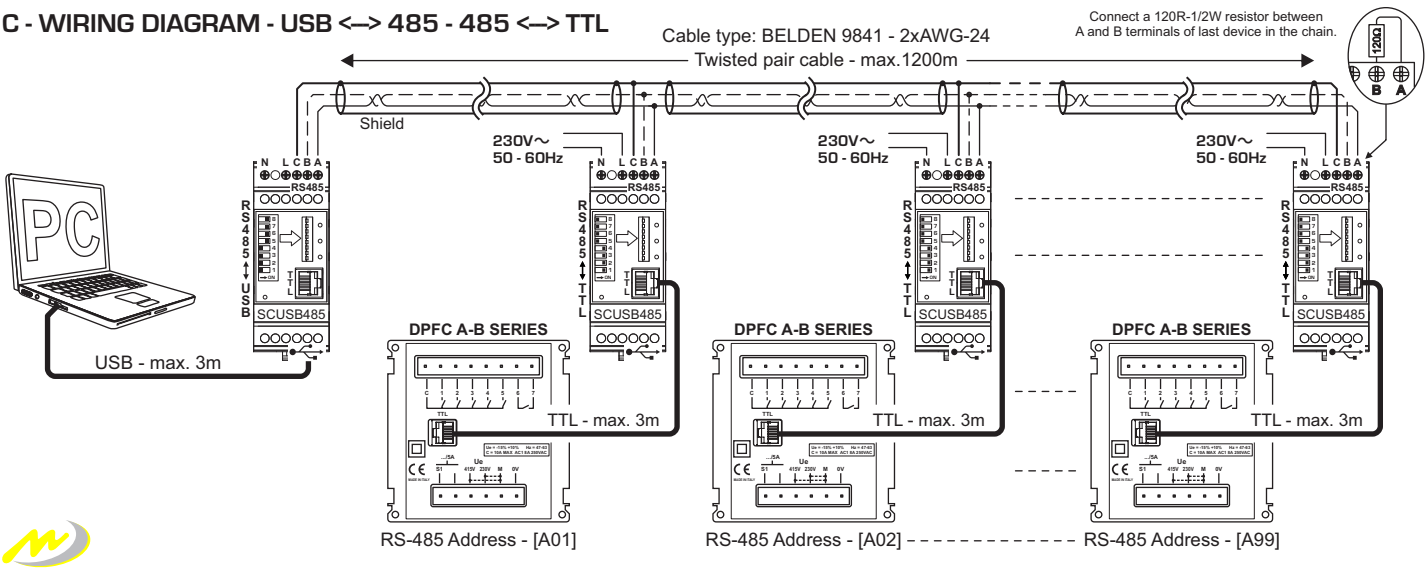
A - WIRING DIAGRAM - USB <--> RS485



B - WIRING DIAGRAM - USB <--> TTL



C - WIRING DIAGRAM - USB <--> 485 - 485 <--> TTL



WEBGATE

WEB Communication Module

- CONNECT REMOTE DEVICES TO CLOUD SERVERS
- PC CONTROL AND ANALYSIS BY BROWSER
- REAL-TIME TRANSFER DATA
- DPFC CONNECTED THROUGH ADAPTER - SCUSB485
- COMMUNICATION:
  - ETHERNET
  - WI-FI
  - MODEM (optional)
    Quad-Band GSM/GPRS - USING SIM-CARD DATA
- ONE OUTPUT CONTACT AND TWO INPUTS
- SIZE 3 MODULES - 54mm
- DIN RAIL MOUNTING EN50.022
- SELF-EXTINGUISHED MATERIAL UL94 V0

COMING NEW PRODUCT SOON

RoHS 2 COMPLIANT

CE

EC Directives - CE Marking:

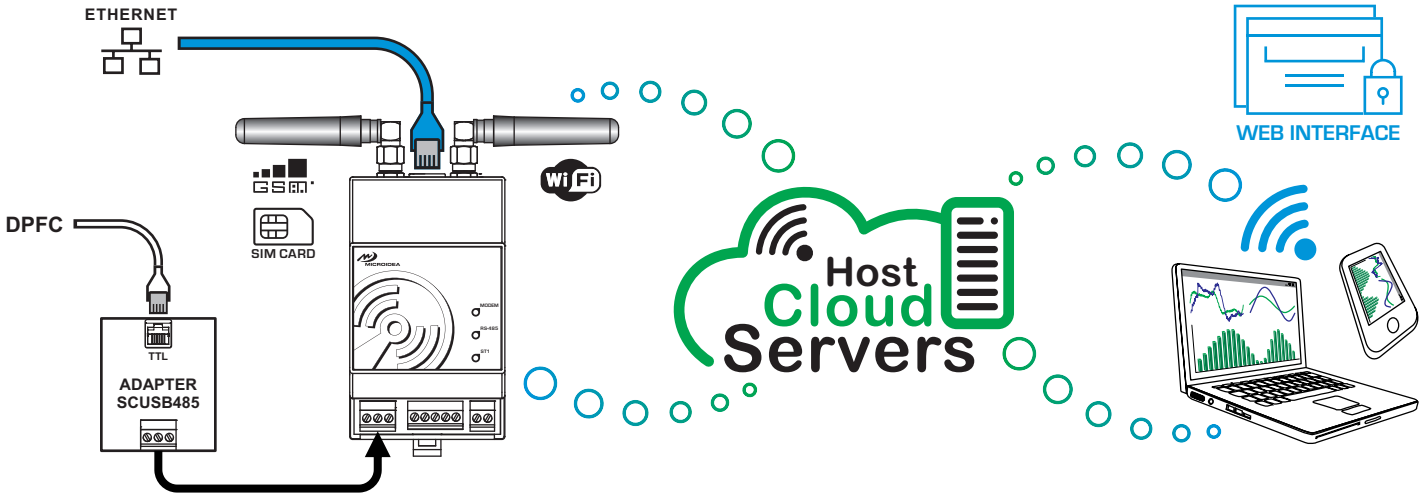
> 2006/95/EC - Low Voltage
> 2004/108/EC - EMC

TECHNICAL DATA

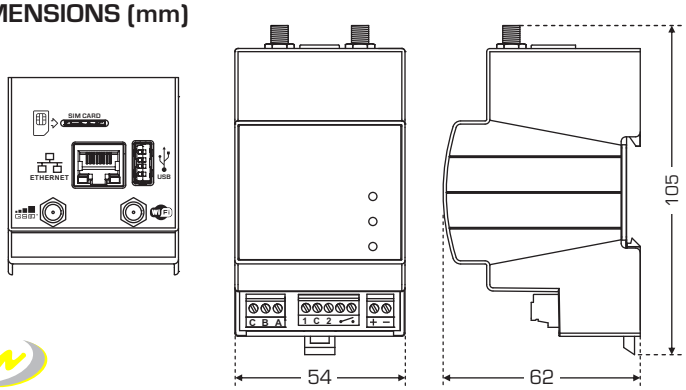
	UNIT	PFC C-GATE
Supply voltage DC	V⎓	9 - 48
Operating Limits (Ue)	%	-15 /+10
Power Consumption (max. DC)	W	3
Serial Interface	-	RS-485
Communication Protocol	-	Modbus RTU
Working temperature	°C	-10 /+50
Storage temperature	°C	-30 /+70
Overvoltage Category	-	II
Protection degree	IP	20 Terminal Block Connections
Relative Humidity w/o cond.	RH%	80
Altitude up to	m	2000
Weight	g	120 or 140 with modem
Dimensions	mm	105 x 54 x 62

MODEM (optional)

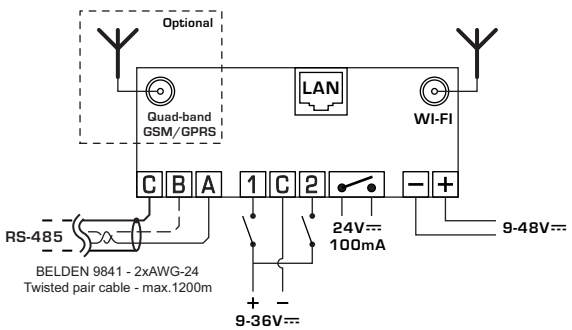
Band specification	-	Quad Band - GSM/GPRS
Band frequency	MHz	850/900/1800/1900



DIMENSIONS (mm)



WIRING DIAGRAM



MI MITFR3 3PH - Energy Meter

- **MEASUREMENTS:**
  - SINGLE AND THREE PHASE VOLTAGE & CURRENT
  - POWER: W - Wh - VA - VAh - var - varh
  - FOUR QUADRANTS COSφ
  - SINGLE AND TOTAL HARMONIC DISTORSION V/I
  - TOTAL WORKING HOURS
  - AMBIENT TEMPERATURE
  - PROGRAMMABLE ALARM RELAY:
    > Under/Over V - Overcurrent - Frequency - Low Cosφ - THD% I
  - RECORDING MAX VALUE:
    > Voltage (Lx/N - Lx/Lx) - Current - THD% (V - I) - Temp. (internal)
- **RJ11 - TTL STANDARD - SERIAL INTERFACE:**
  OWNER / MODBUS RTU COMMUNUCATION PROTOCOL
- **144x144 PANEL MOUNTING**
- **SELF-EXTINGUISHED MATERIAL UL94 V0**

RoHS 2 COMPLIANT

CE

EU Directives - CE Marking:

> 2014/30/UE - EMC
> 2014/35/UE - LVD

TECHNICAL DATA

	UNIT	MITFR3	
Supply voltage AC ±10%	V~	230 L/N	3x400 + N
Nominal Frequency	Hz	50 - 60 (range: 45 - 65)	
Power consumption (max. AC)	VA	6.8	12
Rated Current (CT)	A	5/1...50000	
Immunity Time For Microbreakings		< 50ms	
Display Type	-	3 Display - 4 Digit - 7 Segment	
Measuring Type	-	True RMS	
Voltage (Lx/N)	V~	100 / 280 ±1%	
Voltage (Lx/Lx)	V~	180 / 490 ±1%	
Current (CT)	A	0.055 / 5.5 ± 0.5%	
Frequency	Hz	45 / 65 ±1%	
Cosφ (Lx/Lx)	-	0.00 / 1.00 ±1%	
Active Power (Lx)	W/kWh	Class 1	
Reactive Power (Lx)	var/kvarh	Class 1	
Apparent Power (Lx)	VA	Class 1	
Voltage and Current THD	%	0 / 255	
Ambient Temperature	°C	0/+60°C (or °F)	
Working temperature	°C	-20 /+60	
Storage temperature	°C	-30 /+70	
Electrical Insulation	kV	4	
Overvoltage Category	-	II	
Protection degree	IP	41 Front Cover - 20 Terminal Block	
Pollution degree	-	2	
Relative Humidity w/o cond.	RH%	90	
Altitude up to	m	2000	
Weight	g	680	
Dimensions	mm	149 x 149 x 68	

Real Time Values

Voltage Lx/N	V~
Voltage Lx/Lx	V~
Current	A
Cosφ	-
Active Power	W
Apparent Power	VA
Reactive Power	var

Total Counter Values

Imported and Exported	
Active Energy	Wh
Lagging Apparent Energy	VAh
Leading Apparent Energy	VAh
Lagging Reactive Energy	varh
Leading Reactive Energy	varh

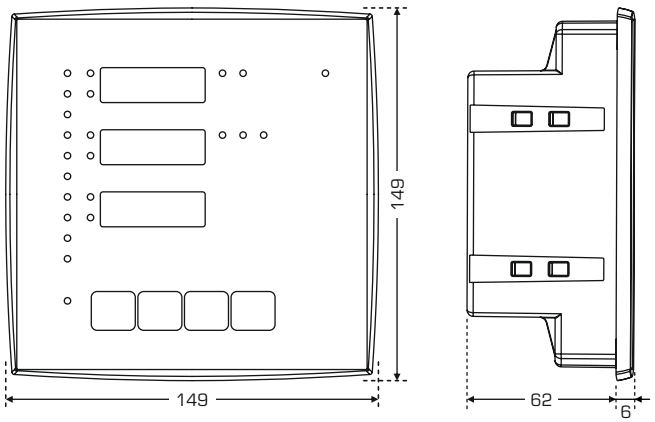
Informations

Firmware Version
CT value
Alarm Events

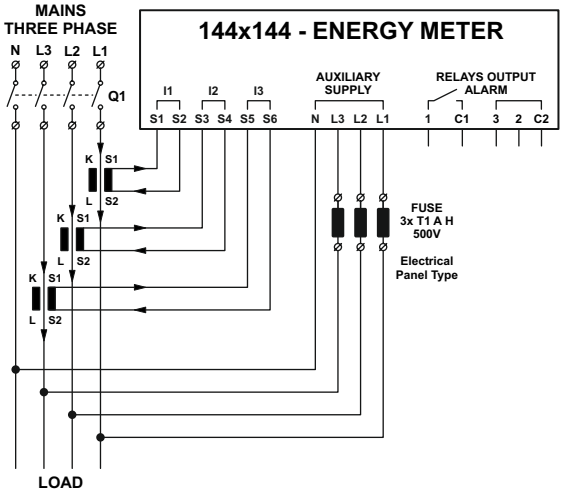
Communication Data

Modbus Address
Modbus Mode
Bandwidth

DIMENSIONS (mm)



WIRING DIAGRAM



MI MITFR3 / MITFR3D 3PH - Energy Meter

- **MEASUREMENTS:**
  - SINGLE AND THREE PHASE VOLTAGE & CURRENT
  - POWER: W - Wh - VA - VAh - var - varh
  - FOUR QUADRANTS COSφ
  - SINGLE AND TOTAL HARMONIC DISTORSION V/I
  - TOTAL WORKING HOURS
  - AMBIENT TEMPERATURE
  - PROGRAMMABLE ALARM RELAY:
    > Under/Over V - Overcurrent - Frequency - Low Cosφ - THD% I
  - RECORDING MAX VALUE:
    > Voltage (Lx/N - Lx/Lx) - Current - THD% (V - I) - Temp. (internal)
- **RJ11 - TTL STANDARD - SERIAL INTERFACE:**
  OWNER / MODBUS RTU COMMUNUCATION PROTOCOL
- **SIZE 9 MODULES DIN - 157mm**
- **SELF-EXTINGUISHED MATERIAL UL94 V0**

RoHS 2 COMPLIANT

CE

EU Directives - CE Marking:

> 2014/30/UE - EMC
> 2014/35/UE - LVD

TECHNICAL DATA

	UNIT	MITFR3D
Supply voltage AC ±10%	V~	230 L/N
Nominal Frequency	Hz	50 - 60 (range: 45 - 65)
Power consumption (max. AC)	VA	3.7
Rated Current (CT)	A	5/1...50000
Immunity Time For Microbreakings		< 50ms
Display Type	-	3 Display - 4 Digit - 7 Segment
Measuring Type	-	True RMS
Voltage (Lx/N)	V~	5 / 280 ±1%
Voltage (Lx/Lx)	V~	5 / 490 ±1%
Current (CT)	A	0.055 / 5.5 ± 0.5%
Frequency	Hz	45 / 65 ±1%
Cosφ (Lx/Lx)	-	0.00 / 1.00 ±1%
Active Power (Lx)	W/kWh	Class 1
Reactive Power (Lx)	var/kvarh	Class 1
Apparent Power (Lx)	VA	Class 1
Voltage and Current THD	%	0 / 255
Ambient Temperature	°C	0/+60°C (or °F)
Working temperature	°C	-20 /+60
Storage temperature	°C	-30 /+70
Electrical Insulation	kV	4
Overvoltage Category	-	II
Protection degree	IP	41 Front Cover - 20 Terminal Block
Pollution degree	-	2
Relative Humidity w/o cond.	RH%	90
Altitude up to	m	2000
Weight	g	550
Dimensions	mm	157 x 90 x 60

Real Time Values

Voltage Lx/N	V~
Voltage Lx/Lx	V~
Current	A
Cosφ	-
Active Power	W
Apparent Power	VA
Reactive Power	var

Total Counter Values

Imported and Exported	
Active Energy	Wh
Lagging Apparent Energy	VAh
Leading Apparent Energy	VAh
Lagging Reactive Energy	varh
Leading Reactive Energy	varh

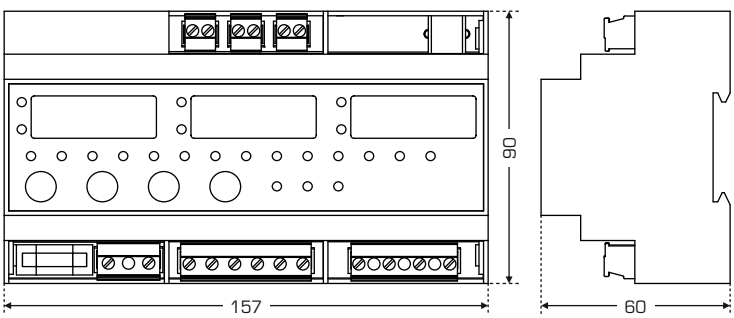
Informations

Firmware Version
CT value
Alarm Events

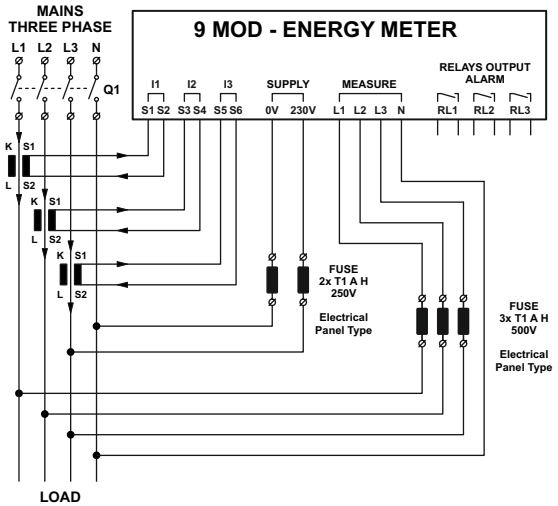
Communication Data

Modbus Address
Modbus Mode
Bandwidth

DIMENSIONS (mm)



WIRING DIAGRAM



MI MITFR1B 3PH - Energy Meter

- **MEASUREMENTS:**
  - SINGLE AND THREE PHASE VOLTAGE & CURRENT
  - POWER: W - Wh - VA - VAh - var - varh
  - FOUR QUADRANTS COSφ
  - SINGLE AND TOTAL HARMONIC DISTORSION V/I
  - TOTAL WORKING HOURS
  - RECORDING MAX VALUE: - Voltage (Lx/N - Lx/Lx)
    - Current
    - THD% (V - I)
    - Temperature (internal)
- **INSULATED RS-485 SERIAL INTERFACE:**
  MODBUS RTU / OWNER COMMUNICATION PROTOCOL
- **VERY COMPACT SIZE - 2 MODULE - 35mm**
- **SELF-EXTINGUISHED MATERIAL UL94 V0**

AVAILABLE NEW PRODUCT NOW

RoHS 2 COMPLIANT

CE

EU Directives - CE Marking:

> 2014/30/UE - EMC
> 2014/35/UE - LVD

TECHNICAL DATA

	UNIT	MITFR1B
Supply voltage AC ±10%	V~	230 L/N
Nominal Frequency	Hz	50 - 60 (range: 45 - 65)
Power consumption (max. AC)	VA	3.4
Rated Current (CT)	A	5 ... 50000
Immunity Time For Microbreakings	ms	< 50ms
Supply indication (**PW**)	-	Green LED
Communication status (**RX**)	-	Red LED
Measuring Type	-	True RMS
Voltage (Lx/N)	V~	5 / 280 ±1%
Voltage (Lx/Lx)	V~	5 / 490 ±1%
Current (CT)	A	0.055 / 5.5 ± 0.5%
Frequency	Hz	45 / 65 ±1%
Cosφ (Lx/Lx)	-	0.00 / 1.00 ±1%
Active Power (Lx)	W/kWh	Class 1
Reactive Power (Lx)	var/kvarh	Class 1
Apparent Power (Lx)	VA	Class 1
Voltage and Current THD	%	0 / 255
Ambient Temperature	°C	0/+60°C (or °F)
Working temperature	°C	-20 /+60
Storage temperature	°C	-30 /+70
RS485 Serial Insulation	kV	2.5
Overvoltage Category	-	II
Protection degree	IP	20
Pollution degree	-	2
Relative Humidity w/o cond.	RH%	90
Altitude up to	m	2000
Weight	g	180
Dimensions	mm	98 x 35.7 x 64

Real Time Values

Voltage Lx/N	V~
Voltage Lx/Lx	V~
Current	A
Cosφ	-
Active Power	W
Apparent Power	VA
Reactive Power	var

Total Counter Values

Imported and Exported	
Active Energy	Wh
Lagging Apparent Energy	VAh
Leading Apparent Energy	VAh
Lagging Reactive Energy	varh
Leading Reactive Energy	varh

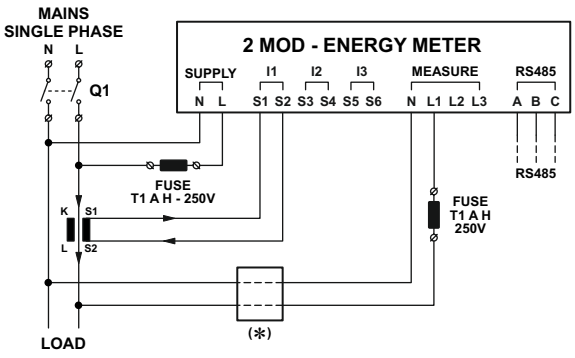
Informations

Firmware Version
CT value
Alarm Events

Communication Data

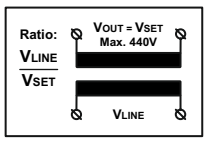
Modbus Address
Modbus Mode
Bandwidth

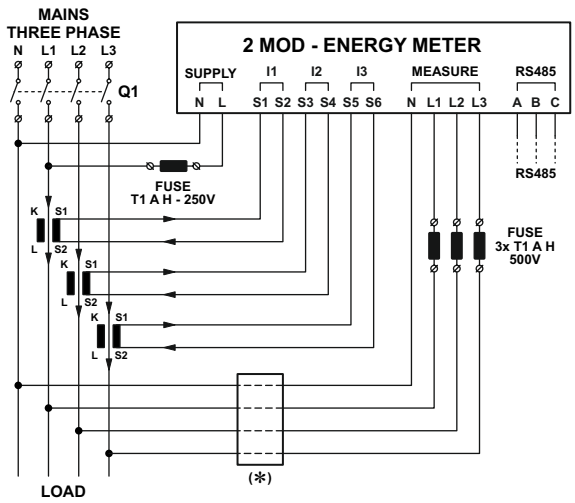
WIRING DIAGRAM



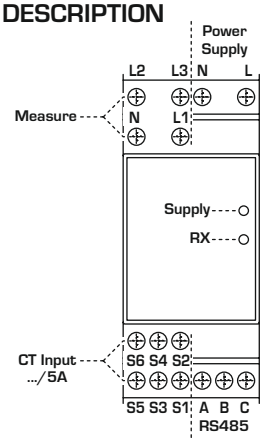
(*) Without transformer P.02 = 100 (default)

For higher supply voltage than the supported range, insert one transformer each Phase and set P.02 with transformer ratio.

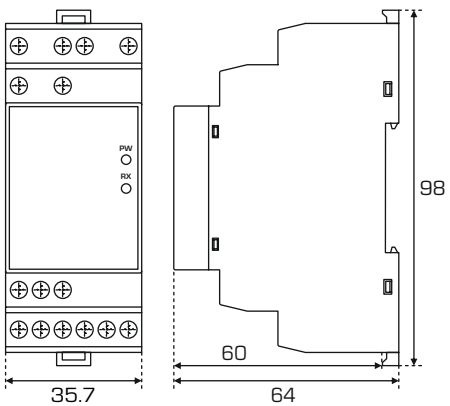




DESCRIPTION



DIMENSIONS (mm)



- AUTO RANGE
- MEASURING SCROLLING
- PEAKS RECORDING: V/A
- DIGITAL DISPLAY - 3 DIGIT
- SINGLE-PHASE DIGITAL INSTRUMENT
- 96x96 PANEL MOUNTING
- SELF-EXTINGUISHED MATERIAL UL94 V0

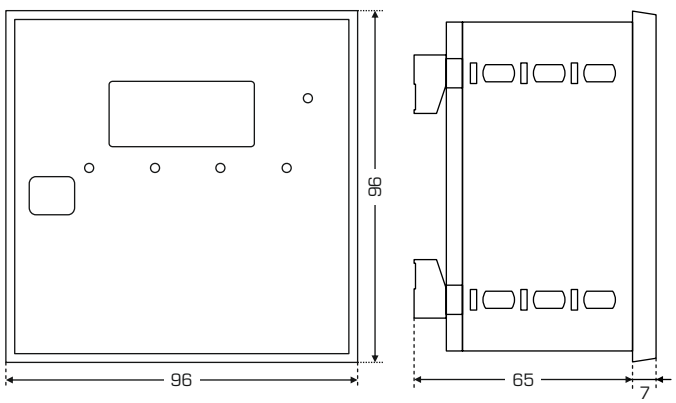
EU Directives - CE Marking:

> 2014/30/UE - EMC
> 2014/35/UE - LVD

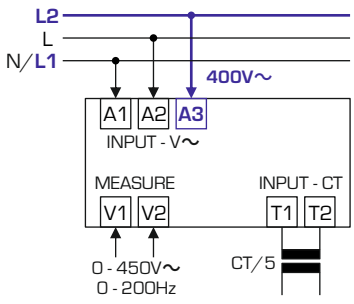
TECHNICAL DATA

	UNIT	MIMCQ2	MIMGQ2
Supply voltage AC ±10%	V~	12 - 24	230 - 400
Nominal Frequency	Hz	50 - 60 (range: 40 - 60)	
Power consumption (max. AC)	VA	4	
Display Type	-	1 Display - 3 Digit - 7 Segment	
Measuring Type	-	V - A - Hz - KVA - H	
Measuring Values	-	RMS	
Voltage range AC	V~	0 - 450 ±2%	
Max direct current	A	5 ±2%	
Current range with ext. CT/5	A	0 - 999 ±2%	
Frequency range	Hz	15 - 200 ±1%	
Working temperature	°C	-20 / +60	
Storage temperature	°C	-30 / +70	
Overvoltage Category	-	II	
Protection degree	IP	20	
Pollution degree	-	2	
Relative Humidity w/o cond.	RH%	90	
Altitude up to	m	2000	
Weight	g	260	
Dimensions	mm	96 x 96 x 72	

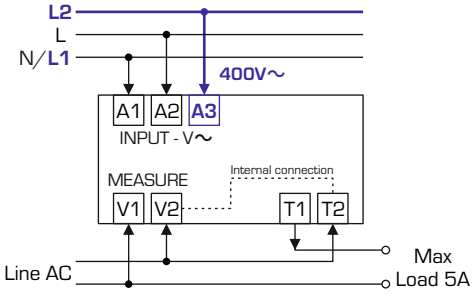
DIMENSIONS (mm)



WIRING DIAGRAM WITH CT



WIRING DIAGRAM WITHOUT CT



- TRUE RMS
- MEASURING SCROLLING
- MEASUREMENTS:
  - SINGLE AND THREE PHASE VOLTAGE & CURRENT
  - POWER: kW - kWh - kVA - kvar - kvarh
  - FOUR QUADRANTS
  - PEAKS RECORDING Min/Max: Only Communication Data
    - > Voltage - Current - Frequency - THD% I/V - PFC - Active/Reactive/Apparent Power
- INSULATED RS-485 SERIAL INTERFACE (MODBUS RTU / DLT645)
- PULSE OUTPUT (IMPORT ONLY ACTIVE ENERGY)
- LCD DISPLAY
- 96x96 PANEL MOUNTING
- SELF-EXTINGUISHED MATERIAL UL94 V0

EU Directives - CE Marking:

> 2014/30/UE - EMC
> 2014/35/UE - LVD

TECHNICAL DATA

	UNIT	MITIG2
Supply voltage AC/DC	V≂	80 - 270 L+/N-
Nominal Frequency	Hz	50 - 60
Power consumption (max. AC)	VA	≤ 5
Rated Voltaga (PT)	V / kV	0 - 690 / 0...99999
Rated Current (CT)	A / kA	0 - 6 / 0...99999
Display Type	-	LCD
Measuring Type (Displayed)	-	True RMS
Voltage (Lx/N)	V∼	10 / 290
Voltage (Lx/Lx)	V∼	20 / 510
Current (CT)	A	0 / 6
Frequency	Hz	45 / 65 ±0.01
PFC	-	0.00 / 1.00
Active Power	kW	Class 1
Reactive Power	kvar	Class 1
Apparent Power	kVA	Class 1
Energy Active Power	kWh	Class 2
Energy Reactive Power	kvarh	Class 2
Working temperature	°C	-10 / +55
Storage temperature	°C	-25 / +70
Electrical Insulation	kV	2
Overvoltage Category	-	II
Protection degree	IP	54 Front Cover - 20 Terminal Block
Pollution degree	-	2
Relative Humidity w/o cond.	RH%	95
Altitude up to	m	≤ 2500
Weight	g	215
Dimensions	mm	96 x 96 x 41.5

Real Time Values

Voltage Lx/N	V∼
Voltage Lx/Lx	V∼
Current	A
PFC	-
Active Power	kW
Apparent Power	kVA
Reactive Power	kvar

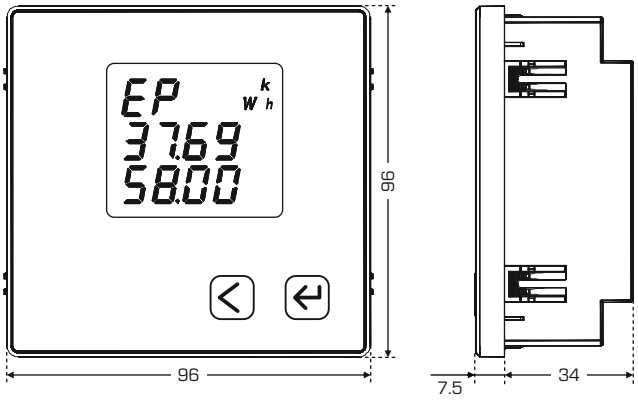
Informations

Firmware Version
CT value
PT value

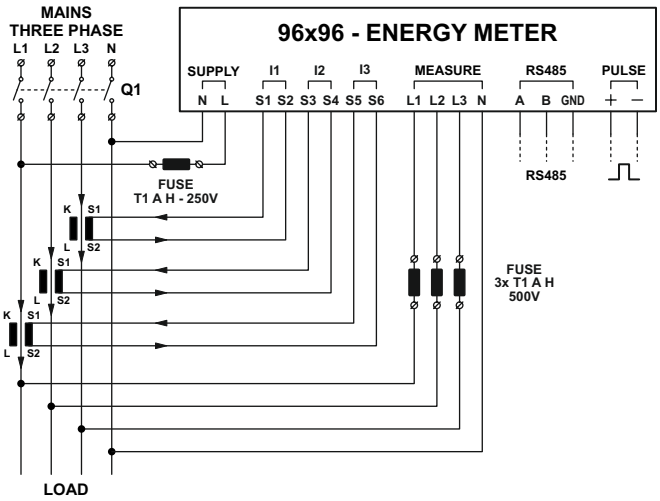
Total Counter Values

Imported and Exported	
Active Energy Import	kW
Active Energy Export	kW
Lagging Reactive Energy	kvarh
Leading Reactive Energy	kvarh

DIMENSIONS (mm)



WIRING DIAGRAM



DT DTMSMM1(-16) / DTMSMM2 Multi-function Delay Timer

- 10 FUNCTIONS SELECTABLE
- TIME RANGE 0.1s - 10d
- UNIVERSAL SUPPLY 24-75V⎓/24-240V~
- OUTPUT 1 or 2 RELAY 1 POLE CHANGEOVER CONTACT
- COMPACT SIZE - 1 MODULE - 17.5mm
- DIN RAIL MOUNTING EN50.022
- SELF-EXTINGUISHED MATERIAL UL94 V0

AVAILABLE NEW MODEL NOW

RoHS 2 COMPLIANT

CE

■ TYPICAL APPLICATION: AUTOMATION CONTROL

EU Directives - CE Marking:

> 2014/30/UE - EMC
> 2014/35/UE - LVD

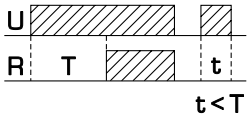
TECHNICAL DATA

INPUT	UNIT	DTMSMM1	DTMSMM1-16	DTMSMM2
Supply voltage DC ±10%	V⎓	24 - 75		24 - 60
Supply voltage AC ±10%	V~	24 - 240		24-48/110-240
Nominal Frequency	Hz	50 - 60 (range: 47 - 63)		
Power consumption (max. AC)	VA	12		
Supply indication (**U**)	-	Green LED		
Impulse length (min)	ms	25		
OUTPUT RELAY				
Rating	-	1 x 8A SPDT 250V~/24V⎓	1 x 16A SPDT 250V~/24V⎓	2 x 8A SPDT 250V~/24V⎓
Max switching power	VA	2000	4000	2000
Max switching voltage	V~	400	440	400
Min switching load	-	10mA 12V⎓	40mA 24V⎓	10mA 12V⎓
Contact life	Mech. / Electr.	30 x 10^3 ops / 100 x 10^3 ops	20 x 10^6 ops / 30 x 10^3 ops	30 x 10^3 ops / 100 x 10^3 ops
Changeover contacts	-	AgNi0.15	Ag-alloy	AgNi0.15
Output Indication (**R**)	-	Red LED		
GENERAL				
Time Range rotary switch (**T**)	-	0.1s - 10d		
Time Deviation	%	5		
Repeat Accuracy	%	0.2 Set value		
Rise time	ms	150		
Working temperature	°C	-20 / +50		
Storage temperature	°C	-30 / +70		
Electrical Insulation	kV	4		
Overvoltage Category	-	III		
Protection degree	IP	20		
Pollution degree	-	2		
Climatic category according to (without condensation)	-	IEC 60068-1 (20/050/60) DIN 40040 (class D)		
Altitude up to	m	2000		
Weight	g	65		
Dimensions	mm	98 x 17.5 x 64		

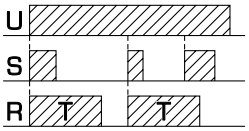
NEW MODEL

FUNCTIONS

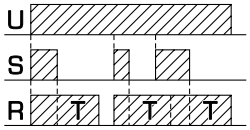
A ON delay



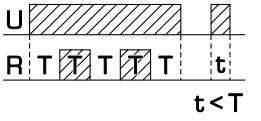
B Signal ON pulse



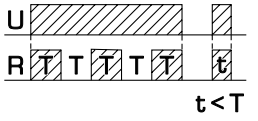
C Signal OFF delay



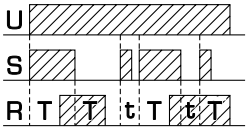
D Symmetrical recycling: OFF start



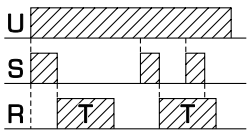
E Symmetrical recycling: ON start



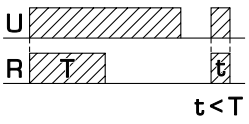
F Signal ON and OFF delay



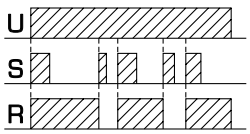
G Signal ON delay



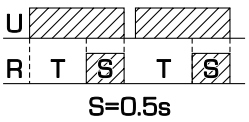
H ON pulse



I Signal ON and OFF

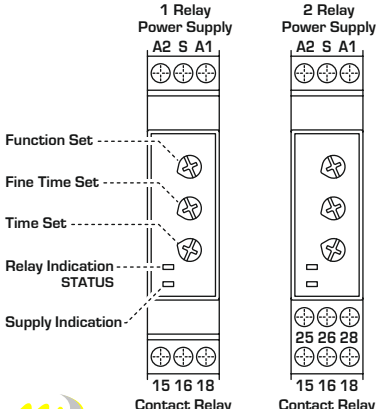


J Pulse Generator

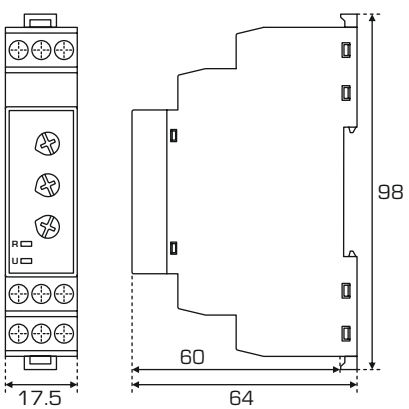


NOTE:
Whenever you change the Function, you must restart the device.

DESCRIPTION

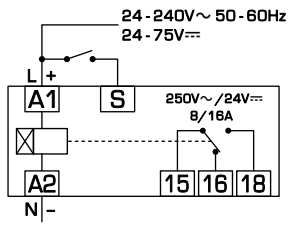


DIMENSIONS (mm)

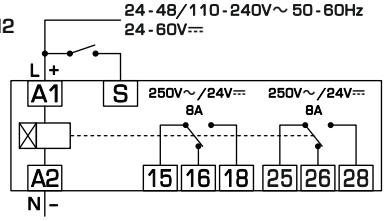


WIRING DIAGRAM

DTMSMM1
DTMSMM1-16



DTMSMM2



DT DTMSMA1(-16) / DTMSMA2 Programmable Asymmetrical Timer

- 10 TIME SELECTABLE
- TIME RANGE 0.2s - 20h
- UNIVERSAL SUPPLY 24-75V⎓/24-240V~
- OUTPUT 1 or 2 RELAY 1 POLE CHANGEOVER CONTACT
- COMPACT SIZE - 1 MODULE - 17.5mm
- DIN RAIL MOUNTING EN50.022
- SELF-EXTINGUISHED MATERIAL UL94 V0

AVAILABLE NEW MODEL NOW

RoHS 2 COMPLIANT

CE

■ TYPICAL APPLICATION: AUTOMATION CONTROL

EU Directives - CE Marking:

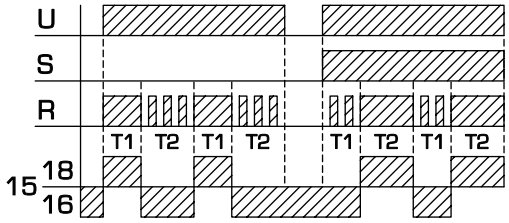
> 2014/30/UE - EMC
> 2014/35/UE - LVD

TECHNICAL DATA

INPUT	UNIT	DTMSMA1	DTMSMA1-16	DTMSMA2
Supply voltage DC ±10%	V⎓	24 - 75		24 - 60
Supply voltage AC ±10%	V~	24 - 240		24-48/110-240
Nominal Frequency	Hz	50 - 60 (range: 47 - 63)		
Power consumption (max. AC)	VA	12		
Supply indication (**U**)	-	Green LED		
Power Reset	ms	200		
OUTPUT RELAY				
Rating	-	1 x 8A SPDT 250V~/24V⎓	1 x 16A SPDT 250V~/24V⎓	2 x 8A SPDT 250V~/24V⎓
Max switching power	VA	2000	4000	2000
Max switching voltage	V~	400	440	400
Min switching load	-	10mA 12V⎓	40mA 24V⎓	10mA 12V⎓
Contact life	Mech. / Electr.	30 x 10^3 ops / 100 x 10^3 ops	20 x 10^6 ops / 30 x 10^3 ops	30 x 10^3 ops / 100 x 10^3 ops
Changeover contacts	-	AgNi0.15	Ag-alloy	AgNi0.15
Output Indication (**R**)	-	Red LED		
GENERAL				
Time Range rotary switch (**T**)	-	0.2s - 20h		
Time Deviation	%	5		
Repeat Accuracy	%	0.2 Set value		
Rise time	ms	150		
Working temperature	°C	-20 / +50		
Storage temperature	°C	-30 / +70		
Electrical Insulation	kV	4		
Overvoltage Category	-	III		
Protection degree	IP	20		
Pollution degree	-	2		
Climatic category according to (without condensation)	-	IEC 60068-1 (20/050/60) DIN 40040 (class D)		
Altitude up to	m	2000		
Weight	g	65		
Dimensions	mm	98 x 17.5 x 64		

NEW MODEL

FUNCTIONS 1 RELAY



FUNCTIONS 2 RELAY

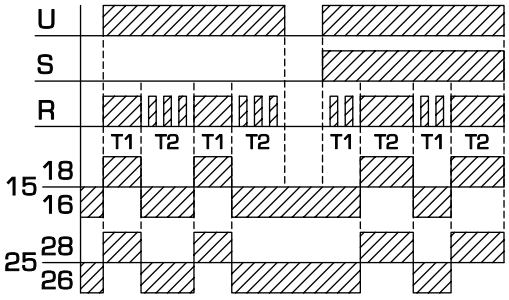
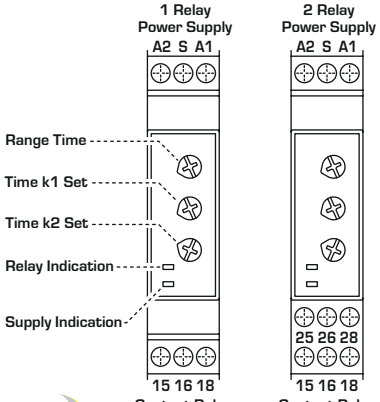


TABLE TIME RANGE SET

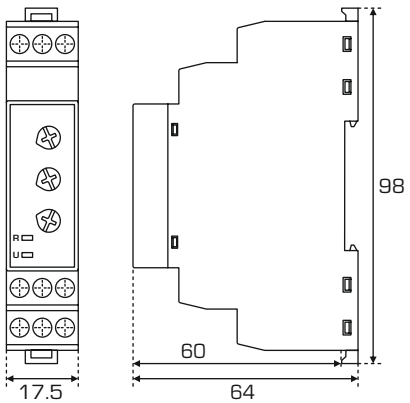
Range	T1 Max	T2 Max
A	2s	2s
B	10s	10s
C	60s	60s
D	10m	60s
E	60m	60s
F	10m	10m
G	60m	60m
H	10h	60m
I	10h	10h
J	20h	20h

Adj T1	Adj T2
k1 **x2s**	k2 **x2s**
k1 **x10s**	k2 **x10s**
k1 **x60s**	k2 **x60s**
k1 **x10m**	k2 **x60s**
k1 **x60m**	k2 **x60s**
k1 **x10m**	k2 **x10m**
k1 **x60m**	k2 **x60m**
k1 **x10h**	k2 **x60m**
k1 **x10h**	k2 **x10h**
k1 **x20h**	k2 **x20h**

DESCRIPTION

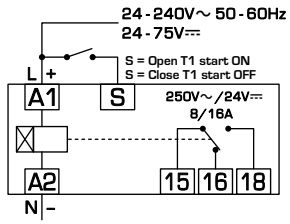


DIMENSIONS (mm)

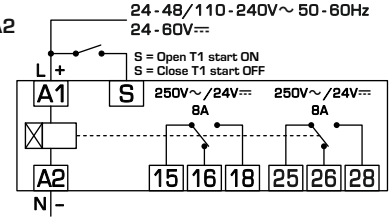


WIRING DIAGRAM

DTMSMA1
DTMSMA1-16



DTMSMA2



DT DTMSLD1 / DTMSLD2 ON Delay Timer

- TIME RANGE 0.1s - 10d
- ENERGIZING AT THE END OF TIME DELAY
- UNIVERSAL SUPPLY 24-75V⎓/24-240V~
- OUTPUT 1 or 2 RELAY 1 POLE CHANGEOVER CONTACT
- COMPACT SIZE - 1 MODULE - 17.5mm
- DIN RAIL MOUNTING EN50.022
- SELF-EXTINGUISHED MATERIAL UL94 V0

AVAILABLE NEW MODEL NOW

RoHS 2 COMPLIANT

CE

■ TYPICAL APPLICATION: AUTOMATION CONTROL

EU Directives - CE Marking:

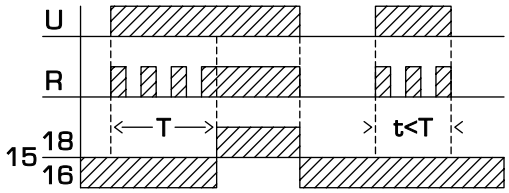
> 2014/30/UE - EMC
> 2014/35/UE - LVD

TECHNICAL DATA

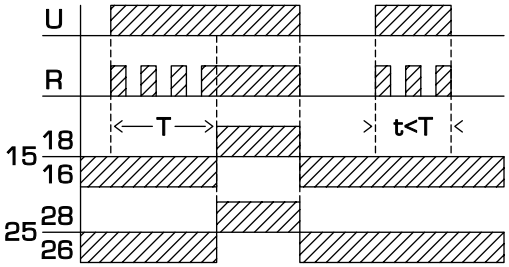
	UNIT	DTMSLD1	DTMSLD2
INPUT			
Supply voltage DC ±10%	V⎓	24 - 75	24 - 60
Supply voltage AC ±10%	V~	24 - 240	24-48/110-240
Nominal Frequency	Hz	50 - 60 (range: 47 - 63)	
Power consumption (max. AC)	VA	12	
Supply indication (**U**)	-	Green LED	
OUTPUT RELAY			
Rating	-	1 x 8A SPDT 250V~/24V⎓	2 x 8A SPDT 250V~/24V⎓
Max switching power	VA	2000	
Max switching voltage	V~	400	
Min switching load	-	10mA 12V⎓	
Contact life	Mech. Electr.	30 x 10^3 ops 100 x 10^3 ops	
Changeover contacts	-	AgNi0.15	
Output Indication (**R**)	-	Red LED	
GENERAL			
Time Range rotary switch (**T**)	-	0.1s - 10d	
Time Deviation	%	5	
Repeat Accuracy	%	0.2 Set value	
Rise time	ms	150	
Working temperature	°C	-20 / +50	
Storage temperature	°C	-30 / +70	
Electrical Insulation	kV	4	
Overvoltage Category	-	III	
Protection degree	IP	20	
Pollution degree	-	2	
Climatic category according to (without condensation)	-	IEC 60068-1 (20/050/60) DIN 40040 (class D)	
Altitude up to	m	2000	
Weight	g	45	
Dimensions	mm	98 x 17.5 x 64	

NEW MODEL

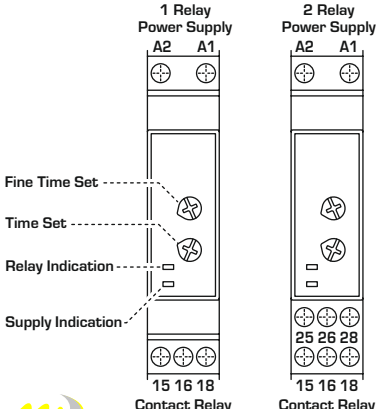
FUNCTIONS 1 RELAY



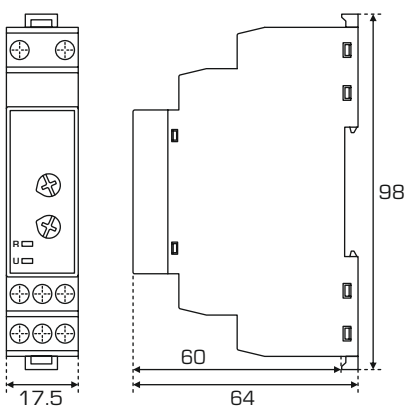
FUNCTIONS 2 RELAY



DESCRIPTION

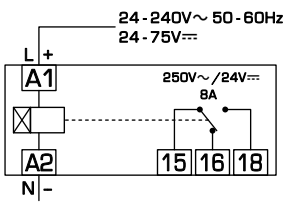


DIMENSIONS (mm)

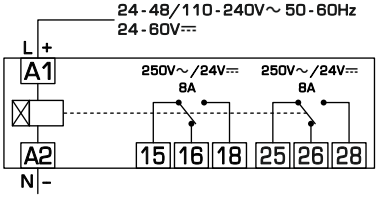


WIRING DIAGRAM

DTMSLD1



DTMSLD2



DT DTMSHD1 / DTMSHD2 ON Delay Timer - Fixed

- ENERGIZING AT THE END OF TIME DELAY
- FIXED TIME 1s (customizable on request)
- UNIVERSAL SUPPLY 24-75V⎓/24-240V~
- OUTPUT 1 or 2 RELAY 1 POLE CHANGEOVER CONTACT
- COMPACT SIZE - 1 MODULE - 17.5mm
- DIN RAIL MOUNTING EN50.022
- SELF-EXTINGUISHED MATERIAL UL94 V0

AVAILABLE NEW MODEL NOW

RoHS 2 COMPLIANT

CE

■ TYPICAL APPLICATION: COMPRESSOR

EU Directives - CE Marking:

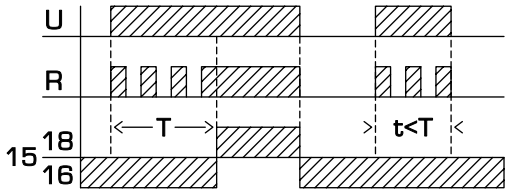
> 2014/30/UE - EMC
> 2014/35/UE - LVD

TECHNICAL DATA

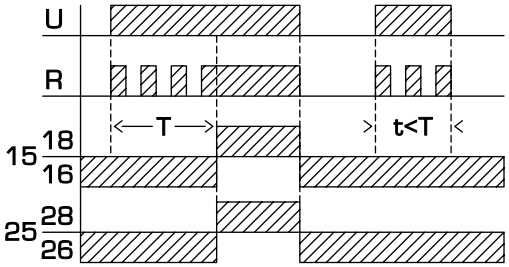
	UNIT	DTMSHD1	DTMSHD2
INPUT			
Supply voltage DC ±10%	V⎓	24 - 75	24 - 60
Supply voltage AC ±10%	V~	24 - 240	24-48/110-240
Nominal Frequency	Hz	50 - 60 (range: 47 - 63)	
Power consumption (max. AC)	VA	12	
Supply indication (**U**)	-	Green LED	
OUTPUT RELAY			
Rating	-	1 x 8A SPDT 250V~/24V⎓	2 x 8A SPDT 250V~/24V⎓
Max switching power	VA	2000	
Max switching voltage	V~	400	
Min switching load	-	10mA 12V⎓	
Contact life	Mech. Electr.	30 x 10^3 ops 100 x 10^3 ops	
Changeover contacts	-	AgNi0.15	
Output Indication (**R**)	-	Red LED	
GENERAL			
Fixed Time (**T**)	s	1	
Min break time	ms	10	
Working temperature	°C	-20 / +50	
Storage temperature	°C	-30 / +70	
Electrical Insulation	kV	4	
Overvoltage Category	-	III	
Protection degree	IP	20	
Pollution degree	-	2	
Climatic category according to (without condensation)	-	IEC 60068-1 (20/050/60) DIN 40040 (class D)	
Altitude up to	m	2000	
Weight	g	45	
Dimensions	mm	98 x 17.5 x 64	

NEW MODEL

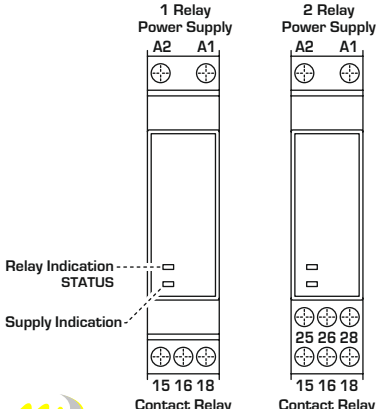
FUNCTIONS 1 RELAY



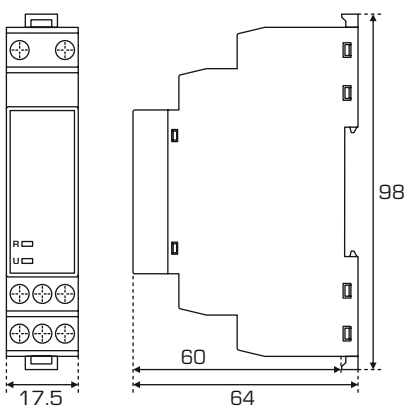
FUNCTIONS 2 RELAY



DESCRIPTION

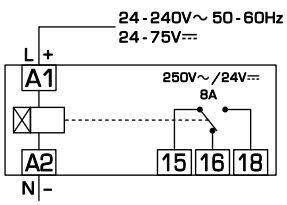


DIMENSIONS (mm)

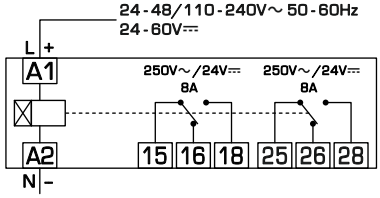


WIRING DIAGRAM

DTMSHD1



DTMSHD2



DT DTMSOD1 / DTMSOD2 OFF Delay Timer - Fixed

- DE-ENERGIZING AT THE END OF TIME DELAY
- FIXED TIME 3s (customizable on request)
- UNIVERSAL SUPPLY 24-75V⎓/24-240V~
- OUTPUT 1 or 2 RELAY 1 POLE CHANGEOVER CONTACT
- COMPACT SIZE - 1 MODULE - 17.5mm
- DIN RAIL MOUNTING EN50.022
- SELF-EXTINGUISHED MATERIAL UL94 V0

AVAILABLE NEW MODEL NOW

RoHS 2 COMPLIANT

■ TYPICAL APPLICATION: COMPRESSOR

EU Directives - CE Marking:

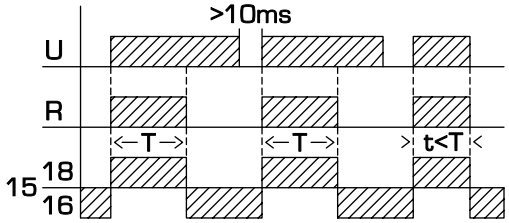
> 2014/30/UE - EMC
> 2014/35/UE - LVD

TECHNICAL DATA

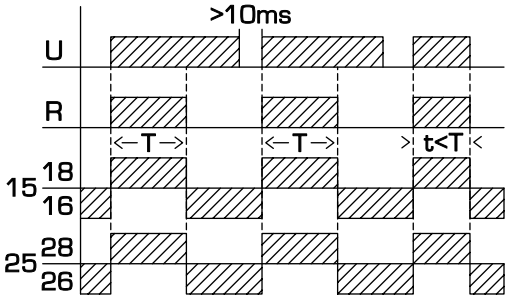
	UNIT	DTMSOD1	DTMSOD2
INPUT			
Supply voltage DC ±10%	V⎓	24 - 75	24 - 60
Supply voltage AC ±10%	V~	24 - 240	24-48/110-240
Nominal Frequency	Hz	50 - 60 (range: 47 - 63)	
Power consumption (max. AC)	VA	12	
Supply indication (**U**)	-	Green LED	
OUTPUT RELAY			
Rating	-	1 x 8A SPDT 250V~/24V⎓	2 x 8A SPDT 250V~/24V⎓
Max switching power	VA	2000	
Max switching voltage	V~	400	
Min switching load	-	10mA 12V⎓	
Contact life	Mech. Electr.	30 x 10^3 ops 100 x 10^3 ops	
Changeover contacts	-	AgNi0.15	
Output Indication (**R**)	-	Red LED	
GENERAL			
Fixed Time (**T**)	s	3	
Min break time	ms	10	
Working temperature	°C	-20 / +50	
Storage temperature	°C	-30 / +70	
Electrical Insulation	kV	4	
Overvoltage Category	-	III	
Protection degree	IP	20	
Pollution degree	-	2	
Climatic category according to (without condensation)	-	IEC 60068-1 (20/050/60) DIN 40040 (class D)	
Altitude up to	m	2000	
Weight	g	45	
Dimensions	mm	98 x 17.5 x 64	

NEW MODEL

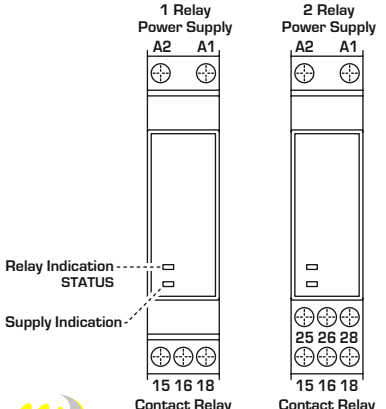
FUNCTIONS 1 RELAY



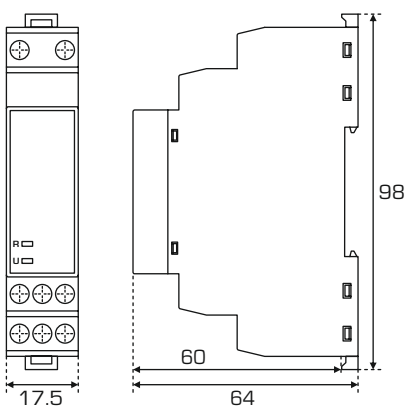
FUNCTIONS 2 RELAY



DESCRIPTION

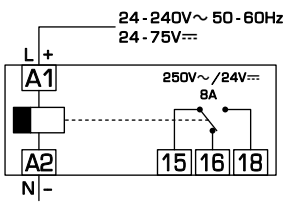


DIMENSIONS (mm)

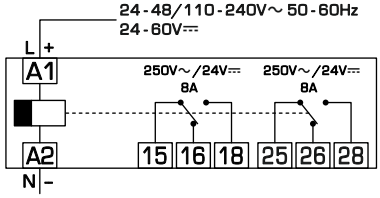


WIRING DIAGRAM

DTMSHD1



DTMSHD2



DT DTM...VQD2/UQD2/OQD2 人△ Star/Delta Timer

- TIME RANGE人: 1 - 60s
- STAR RELAY: ENERGIZES AFTER DELAY
- LED INDICATOR FOR RELAY △ CLOSED
- 2 OUTPUT RELAY 1 POLE CHANGEOVER CONTACT
- COMPACT SIZE - 1 MODULE - 17.5mm
- DIN RAIL MOUNTING EN50.022
- SELF-EXTINGUISHED MATERIAL UL94 V0

■ TYPICAL APPLICATION: MOTOR STARTING

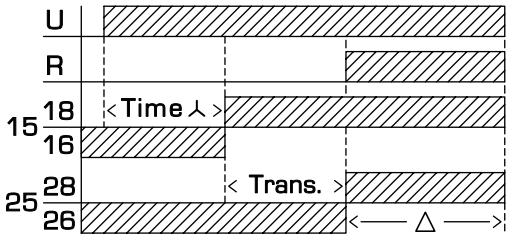
EU Directives - CE Marking:

> 2014/30/UE - EMC
> 2014/35/UE - LVD

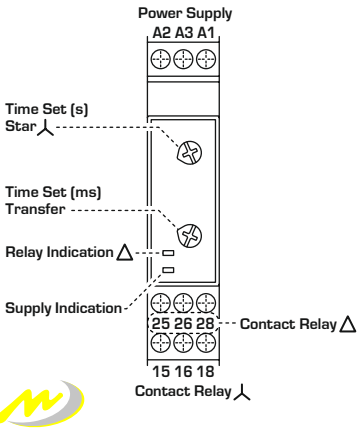
TECHNICAL DATA

INPUT	UNIT	DTMVQD2	DTMUQD2	DTMOQD2
Supply voltage DC ±10%	V⎓	24		/
Supply voltage AC ±10%	V~	24/115	24/240	415
Nominal Frequency	Hz	50 - 60 (range: 47 - 63)		
Power consumption (max. AC)	VA	4.4	10.3	15
Supply indication (**U**)	-	Green LED		
OUTPUT RELAY				
Rating	-	8A - 250V~/24V⎓		8A - 250V~
Max switching power	VA	2000		
Max switching voltage	V~	400		
Min switching load	-	10mA 12V⎓		
Contact life	Mech. Electr.	30 x 10^3 ops 100 x 10^3 ops		
Changeover contacts	-	AgNi0.15		
Output Indication (**R**)	-	Red LED		
GENERAL				
Delayed Start (**Time**人)	s	1 - 60		
Transition delay (**Trans.**)	ms	20 - 300		
Rise time	ms	100		
Working temperature	°C	-20 / +50		
Storage temperature	°C	-30 / +70		
Electrical Insulation	kV	4		
Overvoltage Category	-	III		
Protection degree	IP	20		
Pollution degree	-	2		
Climatic category according to (without condensation)	-	IEC 60068-1 (20/050/60) DIN 40040 (class D)		
Altitude up to	m	2000		
Weight	g	45		
Dimensions	mm	98 x 17.5 x 64		

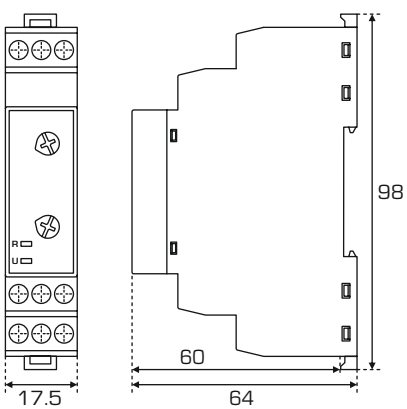
FUNCTIONS



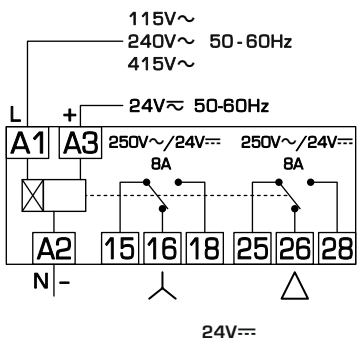
DESCRIPTION



DIMENSIONS (mm)



WIRING DIAGRAM



24V⎓
CONTACT RATING NOT
ALLOWED FOR DTMOQD2

DT DTM...VQI2/UQI2/OQI2 人△ Star/Delta Timer

- TIME RANGE人: 1 - 60s
- STAR RELAY: ENERGIZES IMMEDIATLY
- LED INDICATOR FOR RELAY △ CLOSED
- 2 OUTPUT RELAY 1 POLE CHANGEOVER CONTACT
- COMPACT SIZE - 1 MODULE - 17.5mm
- DIN RAIL MOUNTING EN50.022
- SELF-EXTINGUISHED MATERIAL UL94 V0

■ TYPICAL APPLICATION: MOTOR STARTING

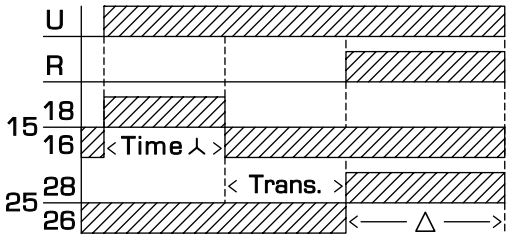
EU Directives - CE Marking:

> 2014/30/UE - EMC
> 2014/35/UE - LVD

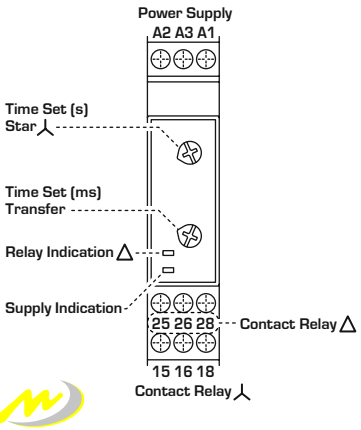
TECHNICAL DATA

INPUT	UNIT	DTMVQI2	DTMUQI2	DTMOQI2
Supply voltage DC ±10%	V⎓	24		/
Supply voltage AC ±10%	V~	24/115	24/240	415
Nominal Frequency	Hz	50 - 60 (range: 47 - 63)		
Power consumption (max. AC)	VA	4.4	10.3	15
Supply indication (**U**)	-	Green LED		
OUTPUT RELAY				
Rating	-	8A - 250V~/24V⎓		8A - 250V~
Max switching power	VA	2000		
Max switching voltage	V~	400		
Min switching load	-	10mA 12V⎓		
Contact life	Mech. Electr.	30 x 10^3 ops 100 x 10^3 ops		
Changeover contacts	-	AgNi0.15		
Output Indication (**R**)	-	Red LED		
GENERAL				
Delayed Start (**Time**人)	s	1 - 60		
Transition delay (**Trans.**)	ms	20 - 300		
Rise time	ms	100		
Working temperature	°C	-20 / +50		
Storage temperature	°C	-30 / +70		
Electrical Insulation	kV	4		
Overvoltage Category	-	III		
Protection degree	IP	20		
Pollution degree	-	2		
Climatic category according to (without condensation)	-	IEC 60068-1 (20/050/60) DIN 40040 (class D)		
Altitude up to	m	2000		
Weight	g	45		
Dimensions	mm	98 x 17.5 x 64		

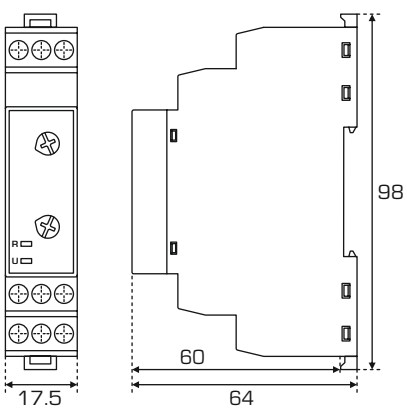
FUNCTIONS



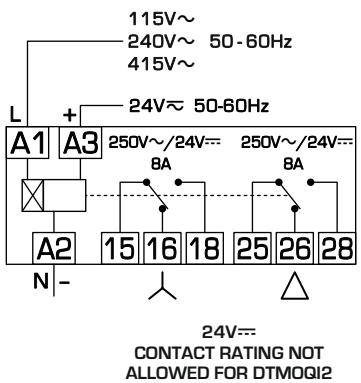
DESCRIPTION



DIMENSIONS (mm)



WIRING DIAGRAM



24V⎓
CONTACT RATING NOT
ALLOWED FOR DTMOQI2

CL CLMSBD1-5/16 Under/Over Current Relay

- TIME RANGE 0 - 10s
- USABLE FOR CURRENT SENSING FROM CURRENT TRANSFORMER
- USABLE FOR DC CURRENT OR AC CURRENT AUTO RECOGNIZED
- UNIVERSAL SUPPLY 24V⎓/24-240V~
- SUPPLY ISN'T GALVANICALLY SEPARATED FROM MEASURED CURRENT, IT MUST BE IN THE SAME PHASE
- OUTPUT RELAY 1 POLE CHANGEOVER CONTACT
- COMPACT SIZE - 1 MODULE - 17.5mm
- DIN RAIL MOUNTING EN50.022
- SELF-EXTINGUISHED MATERIAL UL94 V0

■ TYPICAL APPLICATION: MAX LOAD CONTROL ON CONVEYORS

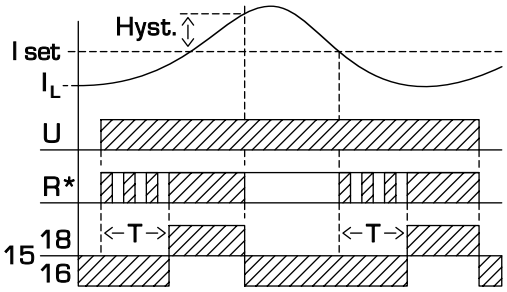
EU Directives - CE Marking:

> 2014/30/UE - EMC
> 2014/35/UE - LVD

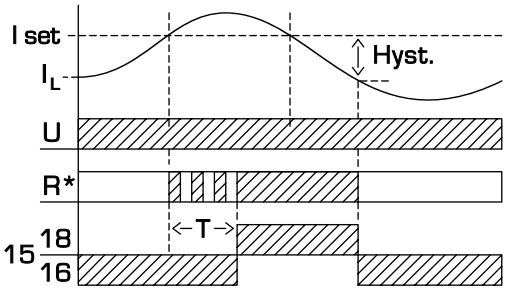
TECHNICAL DATA

	UNIT	CLMSBD1-5	CLMSBD1-16
INPUT			
Supply voltage DC ±10%	V⎓	24	
Supply voltage AC ±10%	V~	24 - 240	
Nominal Frequency	Hz	50 - 60 (range: 47 - 63)	
Power consumption (max. AC)	VA	40	
Current range AC/DC selectable	A	0.25 - 5	0.8 - 15.5
Supply indication (**U**)	-	Green LED	
OUTPUT RELAY			
Rating	-	8A - 250V~/24V⎓	
Max switching power	VA	2000	
Max switching voltage	V~	400	
Min switching load	-	10mA 12V⎓	
Contact life	Mech. Electr.	30 x 10^3 ops 100 x 10^3 ops	
Changeover contacts	-	AgNi0.15	
Output Indication (**R**)	-	Red LED	
GENERAL			
Time Delay (**T**)	s	0 - 10	
Setting Accuracy	%	5	
Repeat Accuracy	%	< 1	
Hysteresis	%	5	
Temperature dependancy	%/°C	< 0.1	
Working temperature	°C	-20 /+50	
Storage temperature	°C	-30 /+70	
Electrical Insulation	kV	4	
Overvoltage Category	-	III	
Protection degree	IP	20	
Pollution degree	-	2	
Climatic category according to (without condensation)	-	IEC 60068-1 (20/050/60) DIN 40040 (class D)	
Altitude up to	m	2000	
Weight	g	65	
Dimensions	mm	98 x 17.5 x 64	

L - FUNCTION



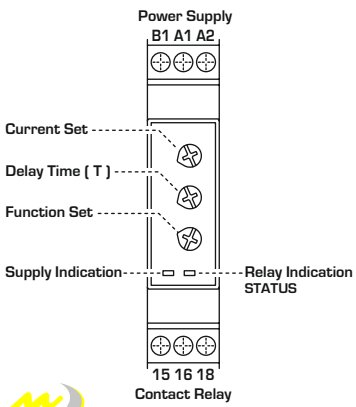
H - FUNCTION



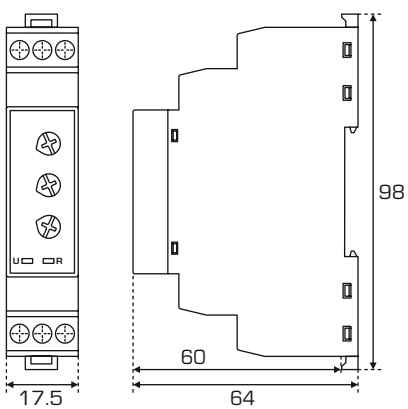
* The **R** Led is Bicolor:
If **I** input is < **I** set. the Led is Green and Relay is OFF
If **I** input is > **I** set. the Led is Red and Relay is ON

▨ = RED
□ = GREEN

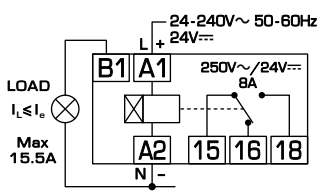
DESCRIPTION

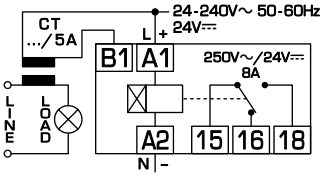


DIMENSIONS (mm)



WIRING DIAGRAM





VL VLMCII2 Under Voltage Relay

- ENERGIZING IMMEDIATLY
- DE-ENERGIZING WHEN THE SUPPLY VOLTAGE DROPS BELOW 20V
- 1 RED LED INDICATOR FOR THE 2 RELAY
- 2 OUTPUT RELAY 1 POLE CHANGEOVER CONTACT
- COMPACT SIZE - 1 MODULE - 17.5mm
- DIN RAIL MOUNTING EN50.022
- SELF-EXTINGUISHED MATERIAL UL94 V0

■ TYPICAL APPLICATION: BATTERY MONITORING VOLTAGE

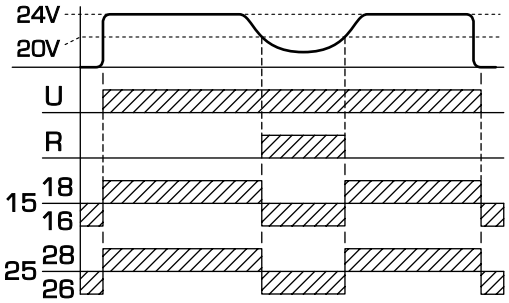
EU Directives - CE Marking:

> 2014/30/UE - EMC
> 2014/35/UE - LVD

TECHNICAL DATA

	UNIT	VLMCII2
INPUT		
Supply voltage DC ±10%	V⎓	24
Power consumption (max. DC)	W	0.3
Supply indication (**U**)	-	Green LED
OUTPUT RELAY		
Rating	-	8A - 250V~/24V⎓
Max switching power	VA	2000
Max switching voltage	V~	400
Min switching load	-	10mA 12V⎓
Contact life	Mech. Electr.	30 x 10^3 ops 100 x 10^3 ops
Changeover contacts	-	AgNi0.15
Output Indication (**R**)	-	Red LED
GENERAL		
Working temperature	°C	-20 / +50
Storage temperature	°C	-30/+70
Electrical Insulation	kV	4
Overvoltage Category	-	III
Protection degree	IP	20
Pollution degree	-	2
Climatic category according to (without condensation)	-	IEC 60068-1 (20/050/60) DIN 40040 (class D)
Altitude up to	m	2000
Weight	g	65
Dimensions	mm	98 x 17.5 x 64

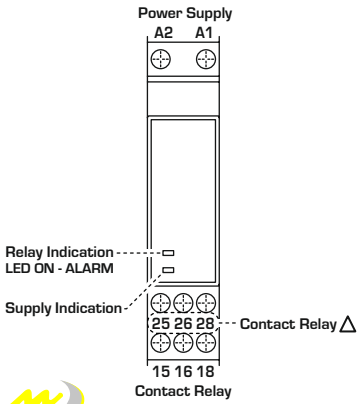
FUNCTIONS



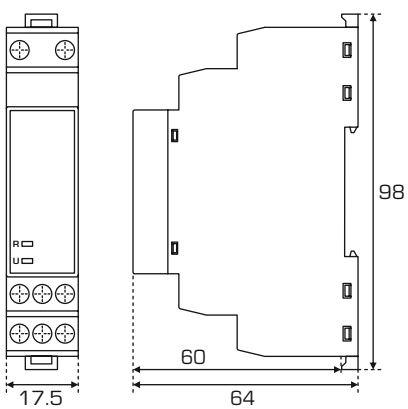
When Line is OK the R led is OFF and Relay is ON

When Line is wrong the R led is ON and Relay is OFF

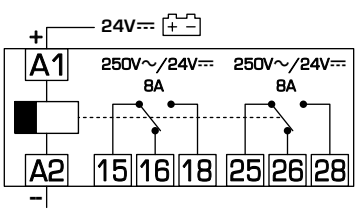
DESCRIPTION



DIMENSIONS (mm)



WIRING DIAGRAM



VL VLMFND1 / VLTGND1 Under Voltage Relay

- TIME RANGE 5 - 15min
- DE-ENERGIZING WHEN THE SUPPLY VOLTAGE IS BELOW 75% Ue
- ENERGIZING AT THE END OF TIME DELAY
- OUTPUT RELAY 1 POLE CHANGEOVER CONTACT
- COMPACT SIZE - 1 MODULE - 17.5mm
- DIN RAIL MOUNTING EN50.022
- SELF-EXTINGUISHED MATERIAL UL94 V0

■ TYPICAL APPLICATION: MONITORING VOLTAGE

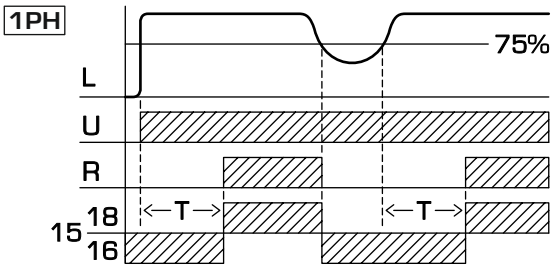
EU Directives - CE Marking:

> 2014/30/UE - EMC
> 2014/35/UE - LVD

TECHNICAL DATA

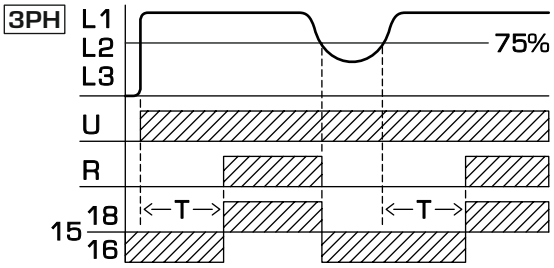
	UNIT	VLMFND1	VLTGND1
INPUT			
Supply voltage AC ±10%	V~	230	400 3N~
Power consumption (max. AC)	VA	7	14
Nominal Frequency	Hz	50 - 60 (range: 47 - 63)	
Supply indication (**U**)	-	Green LED	
OUTPUT RELAY			
Rating	-	8A - 250V~/24V⎓	
Max switching power	VA	2000	
Max switching voltage	V~	400	
Min switching load	-	10mA 12V⎓	
Contact life	Mech. Electr.	30 x 10^3 ops 100 x 10^3 ops	
Changeover contacts	-	AgNi0.15	
Output Indication (**R**)	-	Red LED	
GENERAL			
Time Range ±10% (**T**)	min	5 - 15	
Working temperature	°C	-20 / +50	
Storage temperature	°C	-30/+70	
Electrical Insulation	kV	4	
Overvoltage Category	-	III	
Protection degree	IP	20	
Pollution degree	-	2	
Climatic category according to (without condensation)	-	IEC 60068-1 (20/050/60) DIN 40040 (class D)	
Altitude up to	m	2000	
Weight	g	55	
Dimensions	mm	98 x 17.5 x 64	

FUNCTIONS - VLMFND1



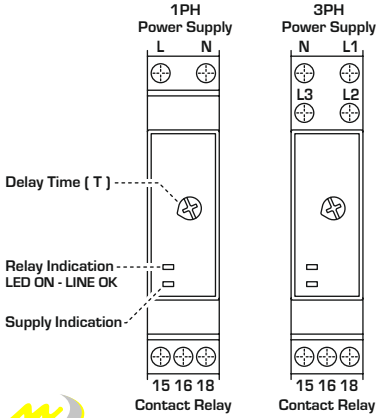
When Line is OK the R led and Relay are ON

FUNCTIONS - VLTGND1

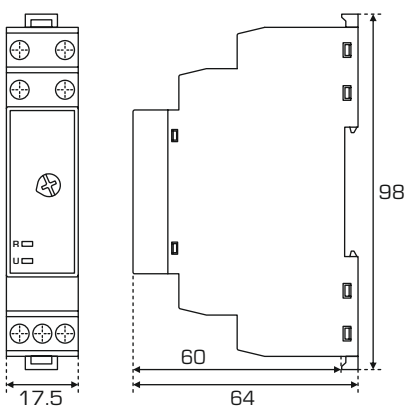


When Line is OK the R led and Relay are ON

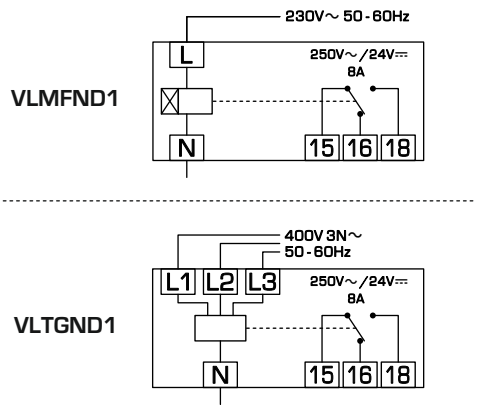
DESCRIPTION



DIMENSIONS (mm)



WIRING DIAGRAM



FS FST...KII1S/ZII1S/WII1S Phase Sequence Voltage Relay

- UNIVERSAL THREE PHASE SUPPLY
- OUTPUT RELAY 1 POLE CHANGEOVER CONTACT
- COMPACT SIZE - 1 MODULE - 17.5mm
- DIN RAIL MOUNTING EN50.022
- SELF-EXTINGUISHED MATERIAL UL94 V0

■ TYPICAL APPLICATION: PHASE SEQUENCE/ROTATION CONTROL

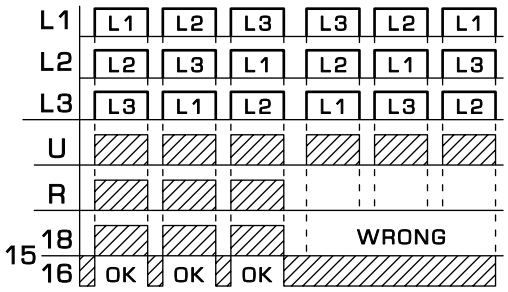
EU Directives - CE Marking:

> 2014/30/UE - EMC
> 2014/35/UE - LVD

TECHNICAL DATA

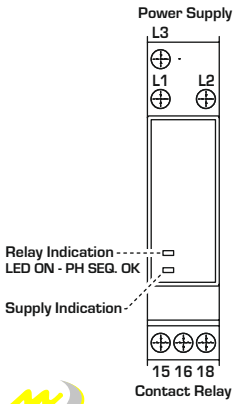
	UNIT	FSTKII1S	FSTZII1S	FSTWII1S
INPUT				
Supply voltage AC ±10%	V~	200-450 3~	300-480 3~	510-690 3~
Nominal Frequency	Hz	50 - 60 (range: 47 - 63)		
Power consumption (max. AC)	VA	20	25	30
Supply indication (**U**)	-	Green LED		
OUTPUT RELAY				
Rating	-	250V~/24V⎓	250V~	
	A	8		
Max switching power	VA	2000		
Max switching voltage	V~	400		
Min switching load	-	10mA 12V⎓		
Contact life	Mech.	30 x 10^3 ops		
	Electr.	100 x 10^3 ops		
Changeover contacts	-	AgNi0.15		
Output Indication (**R**)	-	Red LED		
GENERAL				
Working temperature	°C	-20 / +50		
Storage temperature	°C	-30/+70		
Electrical Insulation	kV	4		
Overvoltage Category	-	III		
Protection degree	IP	20		
Pollution degree	-	2		
Climatic category according to (without condensation)	-	IEC 60068-1 (20/050/60) DIN 40040 (class D)		
Altitude up to	m	2000		
Weight	g	60		
Dimensions	mm	98 x 17.5 x 64		

FUNCTIONS

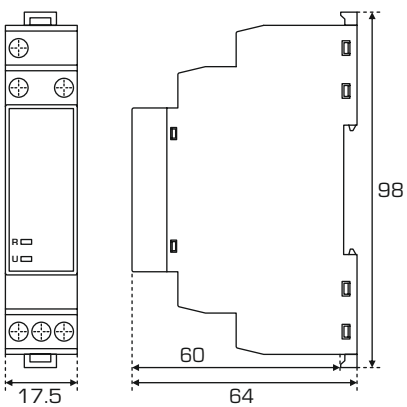


When Phase Sequence is OK the R led and Relay are ON

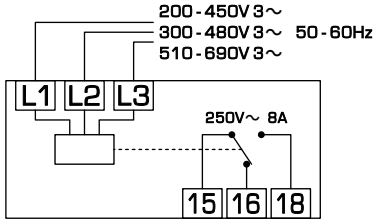
DESCRIPTION



DIMENSIONS (mm)

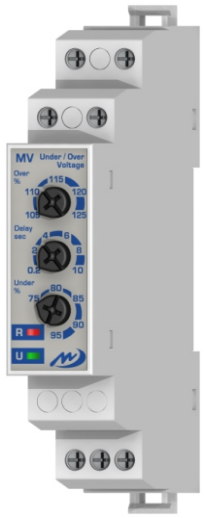


WIRING DIAGRAM



MV MVTFBD1/S/N Under/Over Voltage Relay

- MEASURES PHASE TO PHASE VOLTAGE
- UNDER AND OVER VOLTAGE TRIP LEVEL SETTING
- UNDER AND OVER VOLTAGE TIME DELAY SETTING
- PHASE SEQUENCE AND LOSS CONTROL (only S or N version)
- NEUTRAL LOSS (only N version)
- OUTPUT RELAY 1 POLE CHANGEOVER CONTACT
- COMPACT SIZE - 1 MODULE - 17.5mm
- DIN RAIL MOUNTING EN50.022
- SELF-EXTINGUISHED MATERIAL UL94 V0



■ TYPICAL APPLICATION: SUPPLY VOLTAGE MONITORING

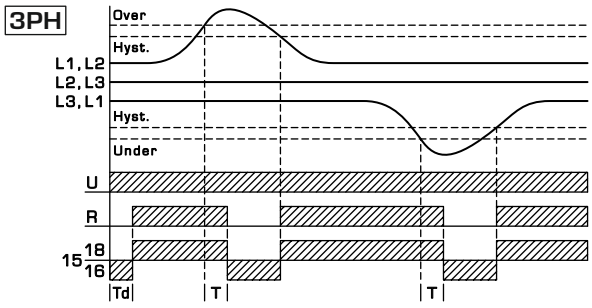
EU Directives - CE Marking:

> 2014/30/UE - EMC
> 2014/35/UE - LVD

TECHNICAL DATA

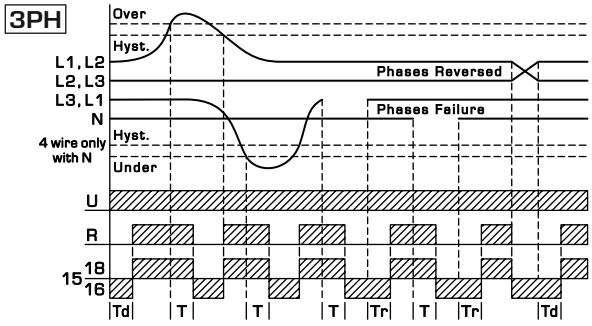
INPUT	UNIT	MVTFBD1	MVTFBD1S	MVTFBD1N
Supply voltage AC ±10%	V~	230 3~	230 3~	230 3N~
Nominal Frequency	Hz	50 - 60 (range: 47 - 63)		
Trip Levels	Under Over	75 - 95% of **U** 105 - 125% of **U**		
Power consumption (max. AC)	VA	13		
Supply indication (**U**)	-	Green LED		
OUTPUT RELAY				
Rating	-	8A - 250V~/24V⎓		
Max switching power	VA	2000		
Max switching voltage	V~	400		
Min switching load	-	10mA 12V⎓		
Contact life	Mech. Electr.	30 x 10^3 ops 100 x 10^3 ops		
Changeover contacts	-	AgNi0.15		
Output Indication (**R**)	-	Red LED		
GENERAL				
Hysteresis (factory set)	%	±2 of trip level		
Response Time	ms	100		
Time Range (**T**)	s	0.2 - 10		
Delay from Failure (**Tr**)	ms	100		
Power on delay (**Td**)	ms	100		
Working temperature	°C	-20 /+50		
Storage temperature	°C	-30/+70		
Electrical Insulation	kV	4		
Overvoltage Category	-	III		
Protection degree	IP	20		
Pollution degree	-	2		
Climatic category according to (without condensation)	-	IEC 60068-1 (20/050/60) DIN 40040 (class D)		
Altitude up to	m	2000		
Weight	g	65		
Dimensions	mm	98 x 17.5 x 64		

FUNCTIONS - MVTFBD1



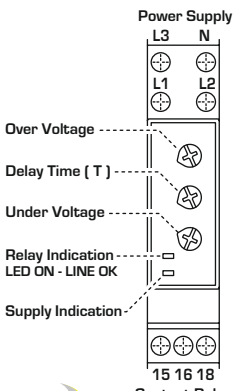
When Line is OK the R led and Relay are ON
(Without Phase Sequence)

FUNCTIONS - MVTFBD1S/N

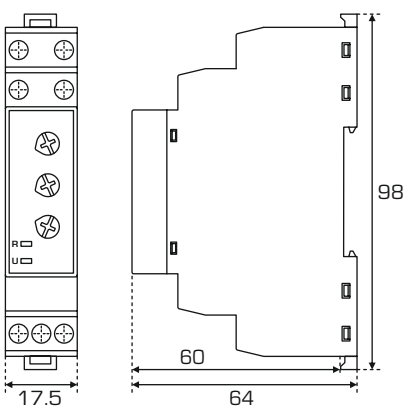


When Line and Phases are OK the R led and Relay are ON

DESCRIPTION

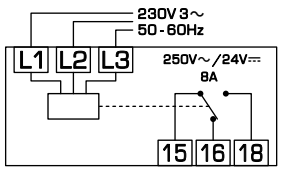


DIMENSIONS (mm)

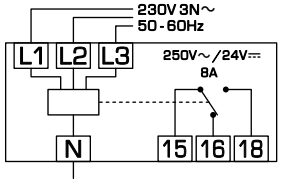


WIRING DIAGRAM

MVTFBD1
MVTFBD1S
Without N

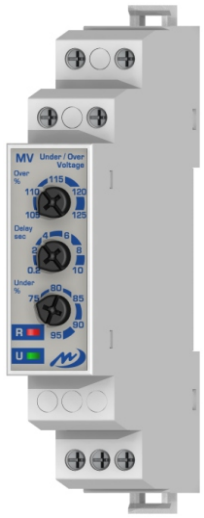


MVTFBD1N
With N



MV MVTGBD1/S/N Under/Over Voltage Relay

- MEASURES PHASE TO PHASE VOLTAGE
- UNDER AND OVER VOLTAGE TRIP LEVEL SETTING
- UNDER AND OVER VOLTAGE TIME DELAY SETTING
- PHASE SEQUENCE AND LOSS CONTROL (only S or N version)
- NEUTRAL LOSS (only N version)
- OUTPUT RELAY 1 POLE CHANGEOVER CONTACT
- COMPACT SIZE - 1 MODULE - 17.5mm
- DIN RAIL MOUNTING EN50.022
- SELF-EXTINGUISHED MATERIAL UL94 V0



■ TYPICAL APPLICATION: SUPPLY VOLTAGE MONITORING

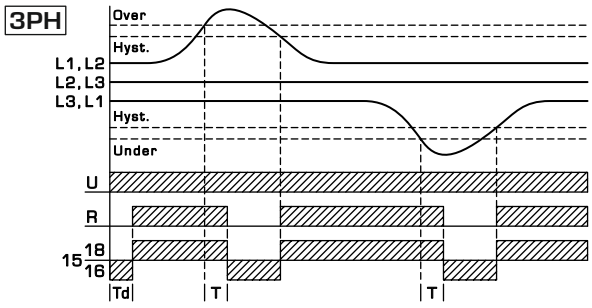
EU Directives - CE Marking:

> 2014/30/UE - EMC
> 2014/35/UE - LVD

TECHNICAL DATA

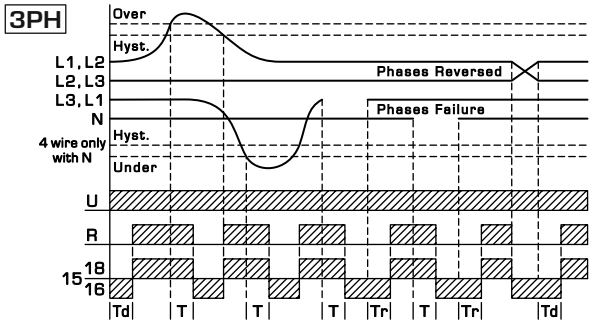
INPUT	UNIT	MVTGBD1	MVTGBD1S	MVTGBD1N
Supply voltage AC ±10%	V~	400 3~	400 3~	400 3N~
Nominal Frequency	Hz	50 - 60 (range: 47 - 63)		
Trip Levels	Under Over	75 - 95% of **U** 105 - 125% of **U**		
Power consumption (max. AC)	VA	16		
Supply indication (**U**)	-	Green LED		
OUTPUT RELAY				
Rating	-	8A - 250V~/24V⎓		
Max switching power	VA	2000		
Max switching voltage	V~	400		
Min switching load	-	10mA 12V⎓		
Contact life	Mech. Electr.	30 x 10^3 ops 100 x 10^3 ops		
Changeover contacts	-	AgNi0.15		
Output Indication (**R**)	-	Red LED		
GENERAL				
Hysteresis (factory set)	%	+/- 2 of trip level		
Response Time	ms	100		
Time Range (**T**)	s	0.2 - 10		
Delay from Failure (**Tr**)	ms	100		
Power on delay (**Td**)	ms	100		
Working temperature	°C	-20 /+50		
Storage temperature	°C	-30/+70		
Electrical Insulation	kV	4		
Overvoltage Category	-	III		
Protection degree	IP	20		
Pollution degree	-	2		
Climatic category according to (without condensation)	-	IEC 60068-1 (20/050/60) DIN 40040 (class D)		
Altitude up to	m	2000		
Weight	g	65		
Dimensions	mm	98 x 17.5 x 64		

FUNCTIONS - MVTGBD1



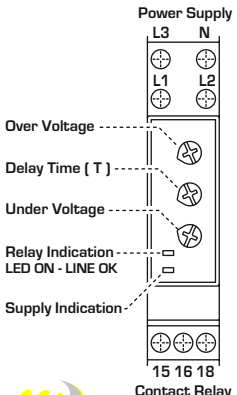
When Line is OK the R led and Relay are ON
(Without Phase Sequence)

FUNCTIONS - MVTGBD1S/N

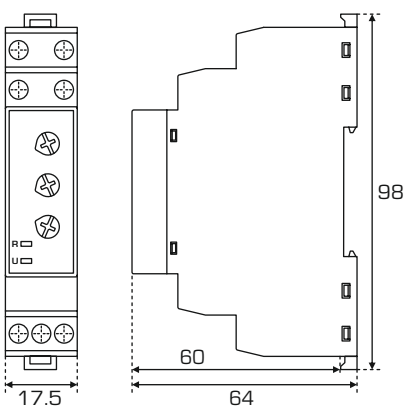


When Line and Phases are OK the R led and Relay are ON

DESCRIPTION

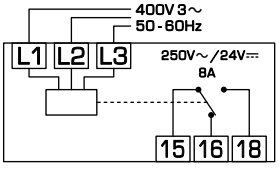


DIMENSIONS (mm)

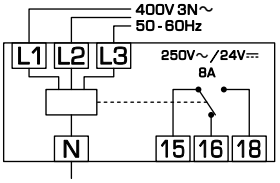


WIRING DIAGRAM

MVTGBD1
MVTGBD1S
Without N



MVTGBD1N
With N



MV MVMFBD1(-16) Under/Over Voltage Relay

- MEASURES PHASE TO PHASE VOLTAGE
- UNDER AND OVER VOLTAGE TRIP LEVEL SETTING
- UNDER AND OVER VOLTAGE TIME DELAY SETTING
- PHASE LOSS CONTROL
- OUTPUT RELAY 1 POLE CHANGEOVER CONTACT
- COMPACT SIZE - 1 MODULE - 17.5mm
- DIN RAIL MOUNTING EN50.022
- SELF-EXTINGUISHED MATERIAL UL94 V0

* AVAILABLE ALSO IN 3 x 230V~ - COD: MVTFBD1

■ TYPICAL APPLICATION: SUPPLY VOLTAGE MONITORING

RoHS 2 COMPLIANT

CE

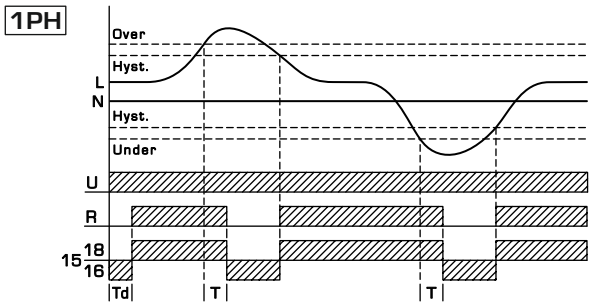
EU Directives - CE Marking:

> 2014/30/UE - EMC
> 2014/35/UE - LVD

TECHNICAL DATA

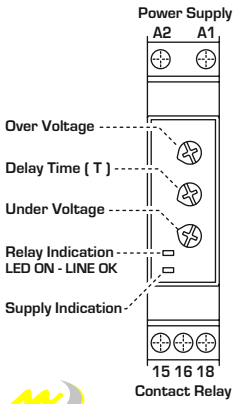
INPUT	UNIT	MVMFBD1	MVMFBD1-16
Supply voltage AC ±10%	V~	230	
Nominal Frequency	Hz	50 - 60 (range: 47 - 63)	
Trip Levels	Under Over	75 - 95% of **U** 105 - 125% of **U**	
Power consumption (max. AC)	VA	13	
Supply indication (**U**)	-	Green LED	
OUTPUT RELAY			
Rating	-	8A - 250V~/24V⎓	16A - 250V~/24V⎓
Max switching power	VA	2000	4000
Max switching voltage	V~	400	440
Min switching load	-	10mA 12V⎓	40mA 24V⎓
Contact life	Mech. Electr.	30 x 10^3 ops 100 x 10^3 ops	20 x 10^6 ops 30 x 10^3 ops
Changeover contacts	-	AgNi0.15	Ag-alloy
Output Indication (**R**)	-	Red LED	
GENERAL			
Hysteresis (factory set)	%	± 2 of trip level	
Response Time	ms	100	
Time Range (**T**)	s	0.2 - 10	
Power on delay (**Td**)	ms	100	
Working temperature	°C	-20 /+50	
Storage temperature	°C	-30/+70	
Electrical Insulation	kV	4	
Overvoltage Category	-	III	
Protection degree	IP	20	
Pollution degree	-	2	
Climatic category according to (without condensation)	-	IEC 60068-1 (20/050/60) DIN 40040 (class D)	
Altitude up to	m	2000	
Weight	g	65	
Dimensions	mm	98 x 17.5 x 64	

FUNCTIONS

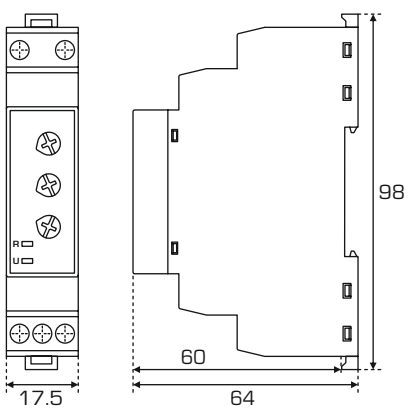


When Line is OK The R led and Relay are ON

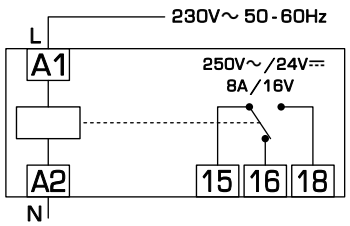
DESCRIPTION



DIMENSIONS (mm)



WIRING DIAGRAM



MF MFMFBD1 / MFMFBD2 Frequency Monitor

- UNDER AND OVER FREQUENCY LEVEL SETTING
- UNDER AND OVER FREQUENCY TIME DELAY SETTING
- OUTPUT 1 or 2 RELAY 1 POLE CHANGEOVER CONTACT
- COMPACT SIZE - 1 MODULE - 17.5mm
- DIN RAIL MOUNTING EN50.022
- SELF-EXTINGUISHED MATERIAL UL94 V0

AVAILABLE NEW MODEL NOW

RoHS 2 COMPLIANT

■ TYPICAL APPLICATION: FREQUENCY MONITORING

EU Directives - CE Marking:

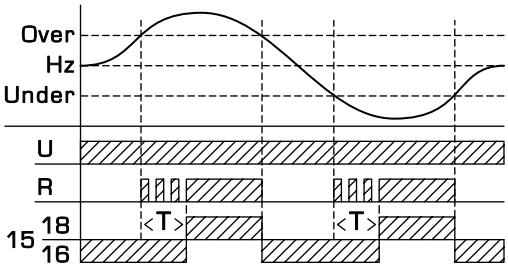
> 2014/30/UE - EMC
> 2014/35/UE - LVD

TECHNICAL DATA

	UNIT	MFMFBD1	MFMFBD2
INPUT			
Supply voltage AC ±10%	V~	120 - 240	160 - 240
Nominal Frequency	Hz	50 - 60 (range: 47 - 63)	
Frequency selectable	Hz	36 - 45 / 46 - 55	
Power consumption (max. AC)	VA	12	
Supply indication (**U**)	-	Green LED	
OUTPUT RELAY			
Rating	-	1 x 8A SPDT 250V~/24V⎓	2 x 8A SPDT 250V~/24V⎓
Max switching power	VA	2000	
Max switching voltage	V~	400	
Min switching load	-	10mA 12V⎓	
Contact life	Mech. Electr.	30 x 10^3 ops 100 x 10^3 ops	
Changeover contacts	-	AgNi0.15	
Output Indication (**R**)	-	Red LED	
GENERAL			
Delay Time (**T**)	s	0 - 10	
Setting Accuracy	%	2	
Repeat Accuracy	%	0.5 constant conditions	
Hysteresis	Hz	±1	
Temperature dependancy	%/°C	< 0.1	
Working temperature	°C	-20 / +50	
Storage temperature	°C	-30/+70	
Electrical Insulation	kV	4	
Overvoltage Category	-	III	
Protection degree	IP	20	
Pollution degree	-	2	
Climatic category according to (without condensation)	-	IEC 60068-1 (20/050/60) DIN 40040 (class D)	
Altitude up to	m	2000	
Weight	g	55	
Dimensions	mm	98 x 17.5 x 64	

NEW MODEL

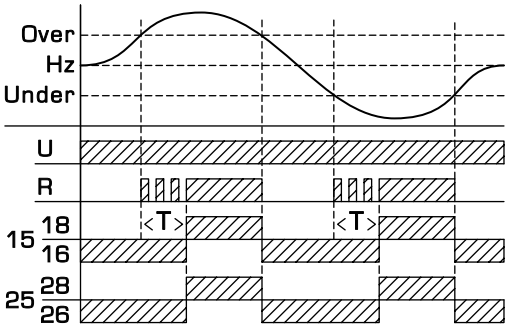
FUNCTIONS 1 RELAY



When Frequency is OK the R led and Relay are OFF

When Frequency is wrong the R led and Relay are ON

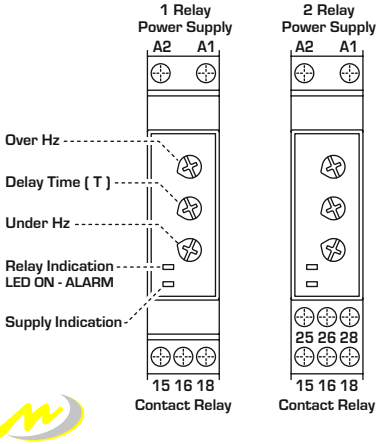
FUNCTIONS 2 RELAY



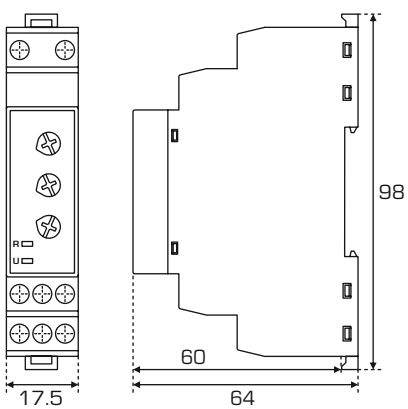
When Frequency is OK the R led and Relay are OFF

When Frequency is wrong the R led and Relay are ON

DESCRIPTION

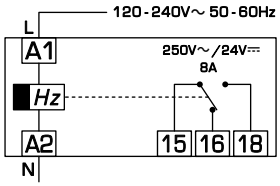


DIMENSIONS (mm)

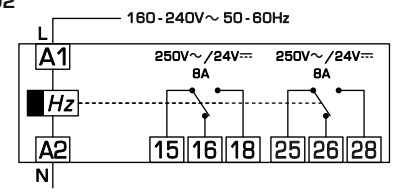


WIRING DIAGRAM

MFMFBD1

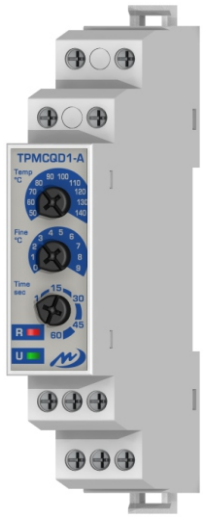


MFMFBD2



TP TPMCQD1-A PT100 - Temperature Relay

- TEMPERATURE PROTECTION RELAY WITH PT100 SENSOR
- EXTERNAL LATCHING SELECTABLE
- SENSOR TEST CONNECTION
- OUTPUT RELAY 1 POLE CHANGEOVER CONTACT
- COMPACT SIZE - 1 MODULE - 17.5mm
- DIN RAIL MOUNTING EN50.022
- SELF-EXTINGUISHED MATERIAL UL94 V0



■ TYPICAL APPLICATION: TEMPERATURE MONITOR

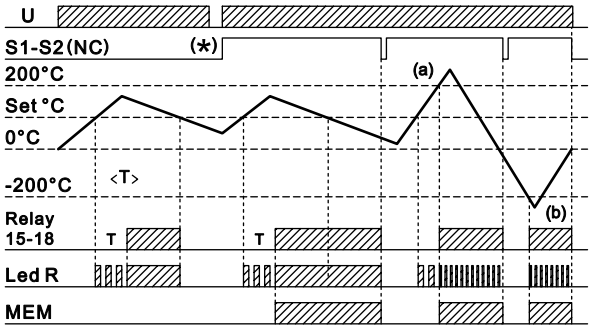
EU Directives - CE Marking:

> 2014/30/UE - EMC
> 2014/35/UE - LVD

TECHNICAL DATA

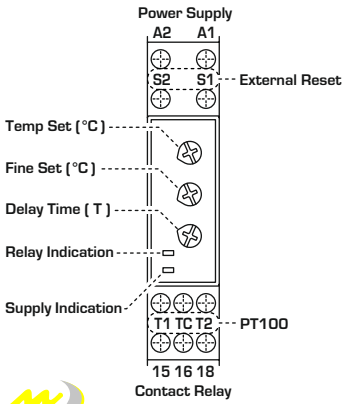
	UNIT	TPMCQD1-A
INPUT		
Supply voltage DC ±10%	V⎓	22 - 39
Supply voltage AC ±10%	V~	19 - 28
Nominal Frequency	Hz	50 - 60 (range: 47 - 63)
Power consumption (max. AC)	VA	1.3
Supply indication (**U**)	-	Green LED
MEASURING CIRCUIT		
Type of sensor	-	PT100
Temperature Levels	°C	50 - 149
Precision	°C	± 2
OUTPUT RELAY		
Rating	-	8A - 250V~/24V⎓
Max switching power	VA	2000
Max switching voltage	V~	400
Min switching load	-	10mA 12V⎓
Contact life	Mech. Electr.	30 x 10^3 ops 100 x 10^3 ops
Changeover contacts	-	AgNi0.15
Output Indication (**R**)	-	Red LED
GENERAL		
Delay Time (**T**)	s	1 - 60
Working temperature	°C	-20 / +50
Storage temperature	°C	-30/+70
Electrical Insulation (supply/probe)	kV	3
Electrical Insulation (supply/relay)	kV	4
Overvoltage Category	-	III
Protection degree	IP	20
Pollution degree	-	2
Climatic category according to (without condensation)	-	IEC 60068-1 (20/050/60) DIN 40040 (class D)
Altitude up to	m	2000
Weight	g	70
Dimensions	mm	98 x 17.5 x 64

FUNCTIONS

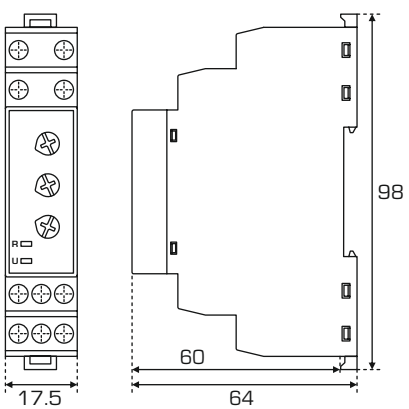


(*) - To activate the "MEM", the device needs to be restarted
(a) - Short Circuit (b) - Open Circuit

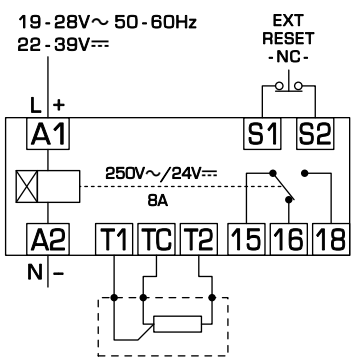
DESCRIPTION



DIMENSIONS (mm)



WIRING DIAGRAM



TP TPMCII1 / TPMIII1 PTC - Motor Protection Relay

- PROTECTION RELAY FOR MOTOR WITH PTC SENSOR
  - Type of PTC sensor according to DIN 44081
- MANUAL OR AUTOMATIC RESET
- MEMORY AND FAILURE SET
- SENSOR TEST
- OUTPUT RELAY 1 POLE CHANGEOVER CONTACT
- COMPACT SIZE - 1 MODULE - 17.5mm
- DIN RAIL MOUNTING EN50.022
- SELF-EXTINGUISHED MATERIAL UL94 V0

■ TYPICAL APPLICATION: MOTOR OVERLOAD

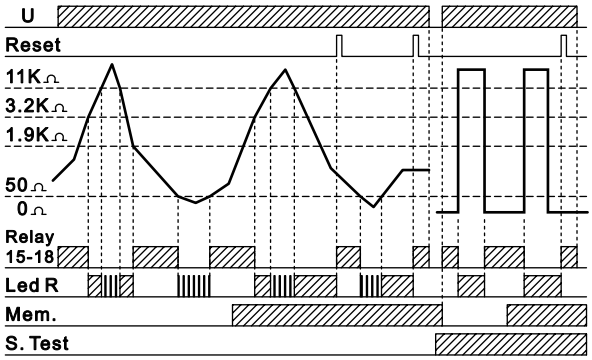
EU Directives - CE Marking:

> 2014/30/UE - EMC
> 2014/35/UE - LVD

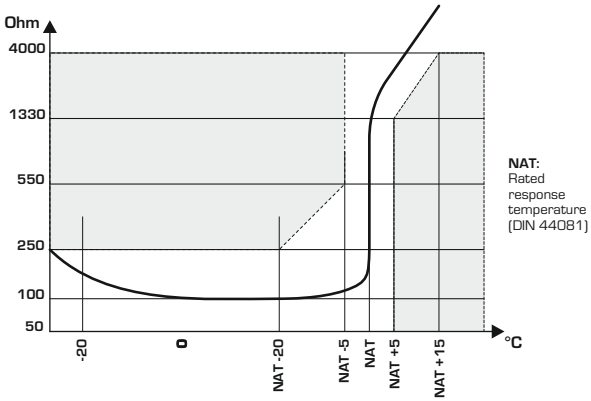
TECHNICAL DATA

	UNIT	TPMCII1	TPMIII1
INPUT			
Supply voltage DC ±10%	V⎓	24	-
Supply voltage AC ±10%	V~	24	90 - 264
Nominal Frequency	Hz	50 - 60 (range: 47 - 63)	
Power consumption (max. AC)	VA	0.9	3.7
Supply indication (**U**)	-	Green LED	
MEASURING CIRCUIT			
Total PTC resistance R1+R2+RN	KΩ	< 1.5	
Trip resistance	KΩ	3.2 ±10%	
Reset resistance	KΩ	1.9 ±10%	
Voltage at T1 - T2	VAC	< 2.5	
OUTPUT RELAY			
Rating	-	8A - 250V~/24V⎓	
Max switching power	VA	2000	
Max switching voltage	V~	400	
Min switching load	-	10mA 12V⎓	
Contact life	Mech. Electr.	30 x 10^3 ops 100 x 10^3 ops	
Changeover contacts	-	AgNi0.15	
Output Indication (**R**)	-	Red LED	
GENERAL			
Working temperature	°C	-20 / +50	
Storage temperature	°C	-30/+70	
Electrical Insulation (supply/probe)	kV	3	
Electrical Insulation (supply/relay)	kV	4	
Overvoltage Category	-	III	
Protection degree	IP	20	
Pollution degree	-	2	
Climatic category according to (without condensation)	-	IEC 60068-1 (20/050/60) DIN 40040 (class D)	
Altitude up to	m	2000	
Weight	g	55	
Dimensions	mm	98 x 17.5 x 64	

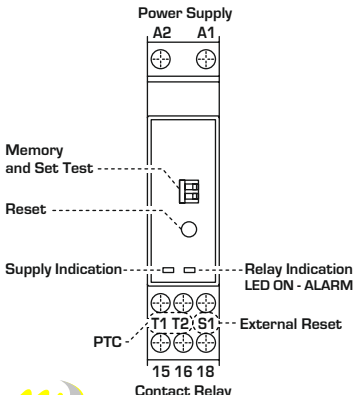
FUNCTIONS



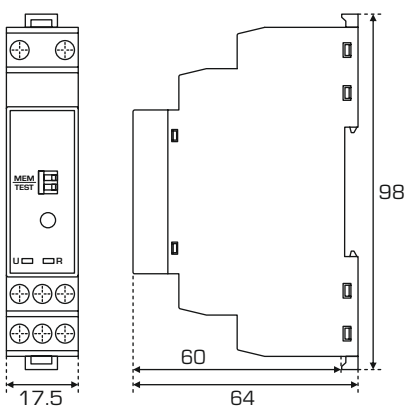
PTC RESISTIVE CURVE



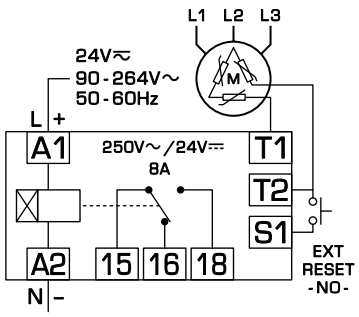
DESCRIPTION



DIMENSIONS (mm)



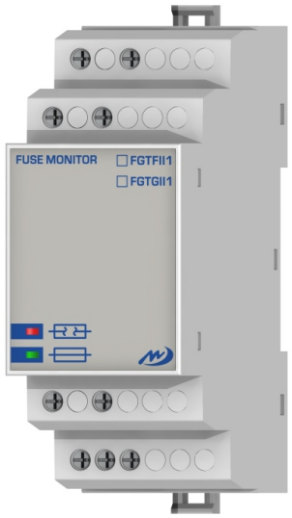
WIRING DIAGRAM



FG FGTFII1 / FGTGII1 Fuse Monitor

- ▸ RECOGNIZE FUSE FAILURE IN THREE-PHASE OR MONO-PHASE MAINS
- ▸ CAN BE USED FOR ALL SIZES AND TYPES OF FUSES
- ▸ SIGNALS OPERATION EVEN IF LOADS ARE SWITCHED OFF
- ▸ AUTOMATIC RESET AFTER REPLACING THE FUSE
- ▸ WORKING PROPERLY EVEN IF: - ASYMMETRICAL MAINS
  - INDEPENDENCE OF PHASE SEQUENCE
  - MAINS WITH HARMONIC WAVES
  - MOTORS PROVIDING FEEDBACK
- ▸ INTERNAL RESISTANCE > 2000 Ω/V
- ▸ OUTPUT RELAY 1 POLE CHANGEOVER CONTACT
- ▸ SIZE 2 MODULES - 35mm - DIN RAIL MOUNTING EN50.022
- ▸ SELF-EXTINGUISHED MATERIAL UL94 V0

■ TYPICAL APPLICATION: FUSES MONITORING ON 3-PH MOTOR MAINS



AVAILABLE NEW MODEL NOW

RoHS 2 COMPLIANT

CE

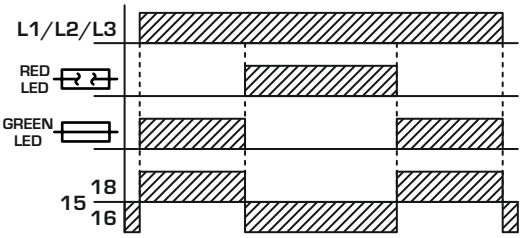
EU Directives - CE Marking:

> 2014/30/UE - EMC
> 2014/35/UE - LVD

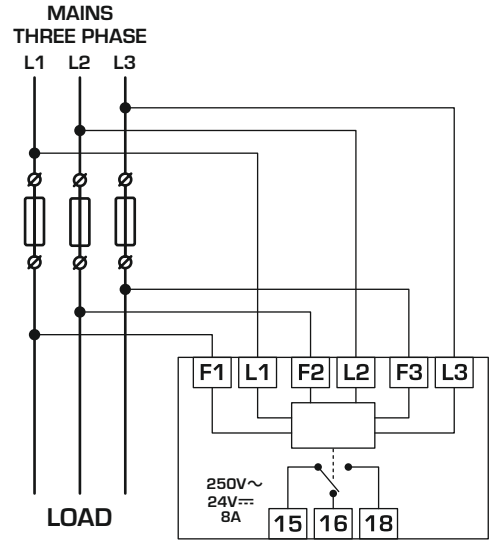
TECHNICAL DATA

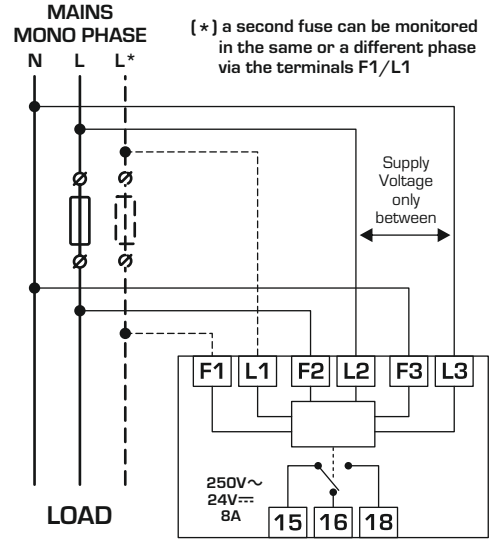
INPUT	UNIT	FGTFII1	FGTGII1
Supply voltage AC ±10%	V~	230	400
Nominal Frequency	Hz	50 - 60 (range: 47 - 63)	
Power consumption (max. AC)	VA	3.6	1.5
OUTPUT RELAY			
Rating	-	8A - 250V~/24V⎓	
Max switching power	VA	2000	
Max switching voltage	V~	400	
Min switching load	-	10mA 12V⎓	
Contact life	Mech. Electr.	30 x 10^3 ops 100 x 10^3 ops	
Changeover contacts	-	AgNi0.15	
STATUS INDICATION			
Fuse OK	-	Green LED - Relay ON	
Fuse FAIL	-	Red LED - Relay OFF	
GENERAL			
Internal resistance paths	Ω/V	> 2000	
Permissible feedback (Ue)	-	max. 90%	
Response/Release Time:			
- After Breaking Fuse	ms	< 30	
- After Restoring Fuse	ms	< 500	
Working temperature	°C	-20 /+50	
Storage temperature	°C	-30/+70	
Electrical Insulation	kV	4	
Overvoltage Category	-	III	
Protection degree	IP	20	
Pollution degree	-	2	
Climatic category according to (without condensation)	-	IEC 60068-1 (20/050/60) DIN 40040 (class D)	
Altitude up to	m	2000	
Weight	g	175	
Dimensions	mm	98 x 35.7 x 64	

FUNCTIONS

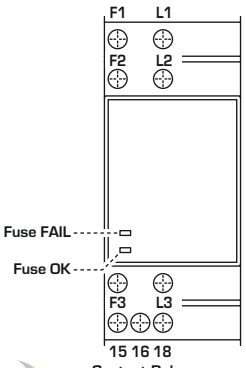


WIRING DIAGRAM

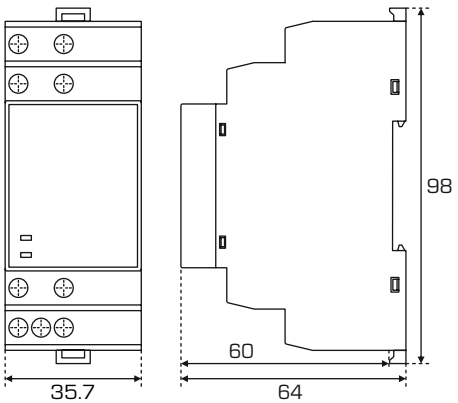




DESCRIPTION



DIMENSIONS (mm)



TP TPM...YII1/RII1/GII1 PTC - Motor Protection Relay

- PROTECTION RELAY FOR MOTOR WITH PTC SENSOR
- AUTOMATIC RESET
- TEST BUTTON FOR VERIFY
- OUTPUT RELAY 1 POLE CHANGEOVER CONTACT
- SIZE 2 MODULES - 35mm
- DIN RAIL MOUNTING EN50.022
- SELF-EXTINGUISHED MATERIAL UL94 V0

■ TYPICAL APPLICATION: MOTOR OVERLOAD

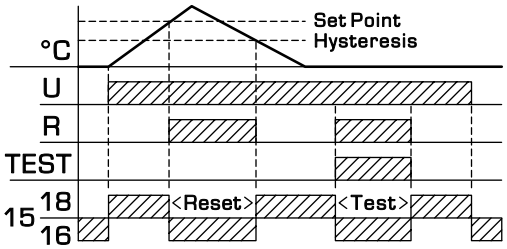
EU Directives - CE Marking:

> 2014/30/UE - EMC
> 2014/35/UE - LVD

TECHNICAL DATA

	UNIT	TPMYII1	TPMRII1	TPMGII1
INPUT				
Supply voltage AC ±10%	V~	12/24	110/230	400
Nominal Frequency	Hz	50 - 60 (range: 47 - 63)		
Power consumption (max. AC)	VA	0.5	3.2	5.6
Supply indication (**U**)	-	Green LED		
MEASURING CIRCUIT				
Type of PTC sensor	-	According to DIN 44081		
Total PTC resistance R1+R2+RN	KΩ	< 1.5		
Trip resistance	KΩ	2.7 - 3.1		
Reset resistance	KΩ	1.65 ±10%		
Voltage at T1 - T2	VAC	< 2.5		
OUTPUT RELAY				
Rating	-	8A - 250V~/24V⎓		
Max switching power	-	2000VA		
Max switching voltage	-	400V~		
Min switching load	-	10mA 12V⎓		
Contact life	Mech. Electr.	30 x 10^3 ops 100 x 10^3 ops		
Changeover contacts	-	AgNi0.15		
Output Indication (**R**)	-	Red LED		
GENERAL				
Working temperature	°C	-20 /+50		
Storage temperature	°C	-30/+70		
Electrical Insulation (supply/probe)	kV	3		
Electrical Insulation (supply/relay)	kV	4		
Overvoltage Category	-	III		
Protection degree	IP	20		
Pollution degree	-	2		
Climatic category according to (without condensation)	-	IEC 60068-1 (20/050/60) DIN 40040 (class D)		
Altitude up to	m			
Weight	g	170		
Dimensions	mm	94 x 35 x 58		

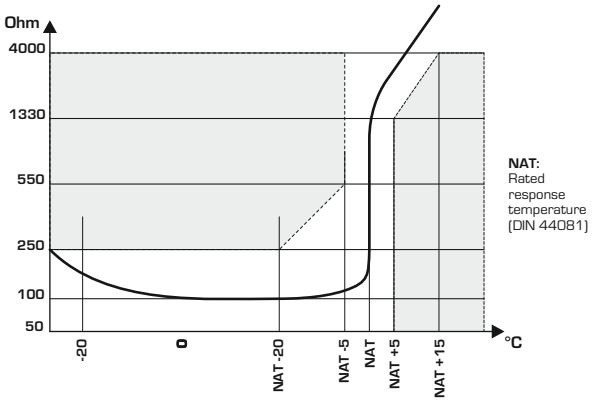
FUNCTIONS



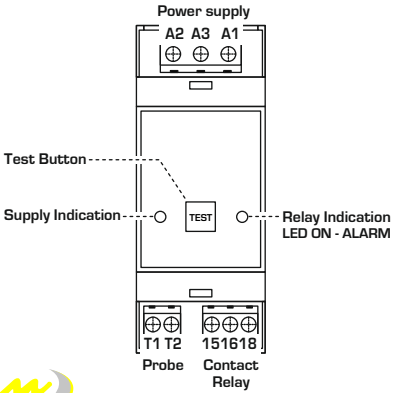
When Status is OK the R led is OFF and Relay is ON

When Status is wrong the R led is ON and Relay is OFF

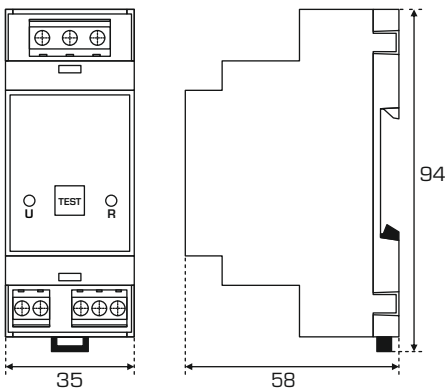
PTC RESISTIVE CURVE



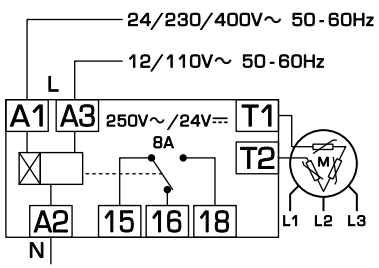
DESCRIPTION



DIMENSIONS (mm)



WIRING DIAGRAM



LR LRM...CII1/EII1/FII1/GII1 Liquid Level Control

- USABLE FOR ALL CONDUCTIVE LIQUID
- AUTOMATIC RESETTING
- FROM 2.5K TO 50K SENSITIVITY SETTING
- GALVANIC INSULATION SUPPLY AND PROBES
- OUTPUT RELAY 1 POLE CHANGEOVER CONTACT
- SIZE 2 MODULES - 35mm
- DIN RAIL MOUNTING EN50.022
- SELF-EXTINGUISHED MATERIAL UL94 V0

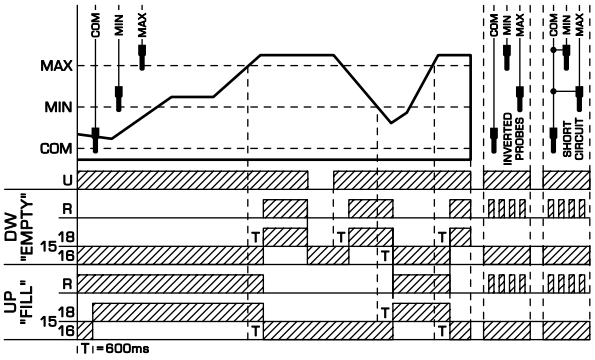
■ TYPICAL APPLICATION: CONTROL AND MAINTENANCE OF MAX AND/OR MIN LEVEL OF CONDUCTIVE LIQUIDS - TAP WATER, SEAWATER, SEWAGE, COFFEE, ETC...

EU Directives - CE Marking:
> 2014/30/UE - EMC
> 2014/35/UE - LVD

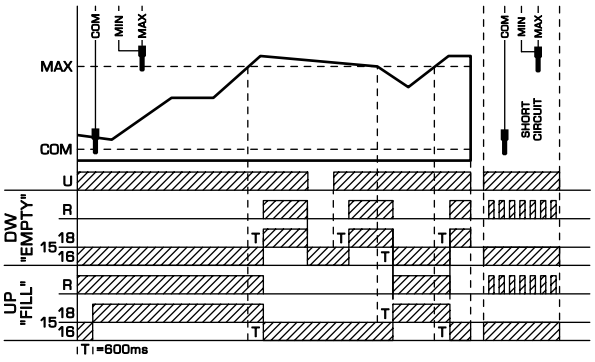
TECHNICAL DATA

	UNIT	LRMCII1	LRMEII1	LRMFII1	LRMGII1
INPUT					
Supply voltage AC ±10%	V~	24	115	230	400
Nominal Frequency	Hz	50 - 60 (range: 47 - 63)			
Power consumption (max. AC)	VA	2.5	2.4	2.9	3.5
Supply indication (**U**)	-	Green LED			
OUTPUT RELAY					
Rating	-	8A - 250V~/24V⎓			
Max switching power	VA	2000			
Max switching voltage	V~	400			
Min switching load	-	10mA 12V⎓			
Contact life	Mech. Electr.	30 x 10^3 ops 100 x 10^3 ops			
Changeover contacts	-	AgNi0.15			
Output Indication (**R**)	-	Red LED			
GENERAL					
Function Select	-	EMPTY (DW) or FILL (UP)			
Adjustable sensivity	Kohm	2.5 to 50			
Probe supply	VAC	8.5			
Isolation input probe	kV	3 (1.2 50us)			
Number of probe	n°	2 - 3			
Maximum cable length	mt	800			
Working temperature	°C	-20 /+50			
Storage temperature	°C	-30/+70			
Electrical Insulation	kV	4			
Overvoltage Category	-	III			
Protection degree	IP	20			
Pollution degree	-	2			
Climatic category according to (without condensation)	-	IEC 60068-1 (20/050/60) DIN 40040 (class D)			
Altitude up to	m	2000			
Weight	g	120			
Dimensions	mm	98 x 35.7 x 64			

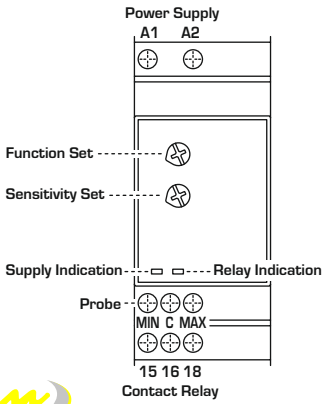
FUNCTIONS with 3 probe



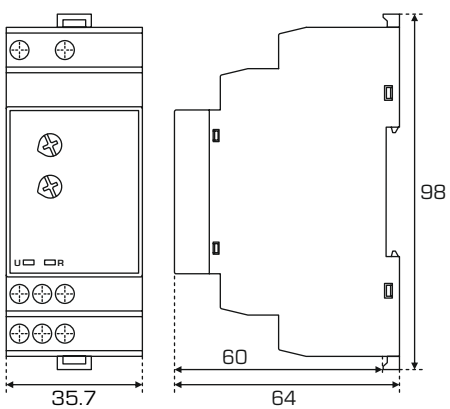
FUNCTIONS with 2 probe (short ciruite Min and Max probe)



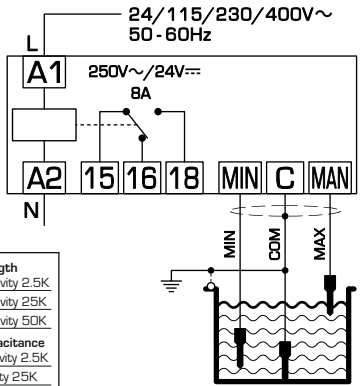
DESCRIPTION



DIMENSIONS (mm)



WIRING DIAGRAM



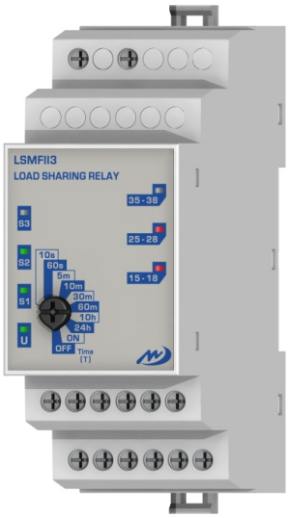
CABLE TYPE

Max Cable Length	
800 m /sensitivity 2.5K	
150 m /sensitivity 25K	
100 m /sensitivity 50K	
Max Cable Capacitance	
150nF /sensitivity 2.5K	
35nF /sensitivity 25K	
20nF/sensitivity 50K	

Cable length is calculated using 600V 3 wire 0.75mm

LS LSMFII3 Load Sharing Relay

- CONTROLS THE OPERATION OF UP TO 3 LOADS BY ALTERNATING EACH ONE
- SUITABLE FOR HYDROPHORE SEQUENCINGY SYSTEM
- INDEPENDENT LEDs FOR INPUT AND OUTPUT
- REQUIRES 3 EXTERNAL VOLT FREE CONTACTS (NO)
- TIME RANGE 10s - 24h
- OUTPUT 3 RELAY 1 POLE CONTACT (NO)
- SIZE 2 MODULES - 35mm
- DIN RAIL MOUNTING EN50.022
- SELF-EXTINGUISHED MATERIAL UL94 V0



AVAILABLE NEW MODEL NOW

RoHS 2 COMPLIANT

CE

■ **TYPICAL APPLICATION:** PUMPS WORK IN SEQUENCE AND WITH EQUAL TIME PERIODS, SHARING TIME OF WORKING LOADS.

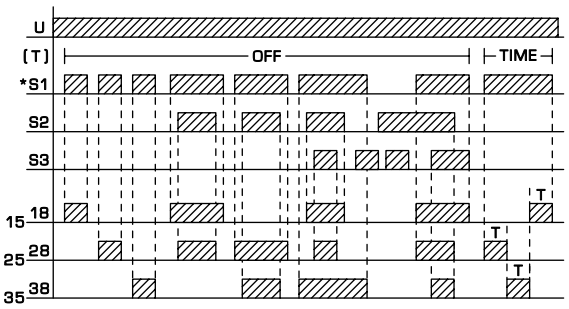
EU Directives - CE Marking:

> 2014/30/UE - EMC
> 2014/35/UE - LVD

TECHNICAL DATA

INPUT	UNIT	LSMFII3
Supply voltage AC ±10%	V~	230
Nominal Frequency	Hz	50 - 60 (range: 47 - 63)
Power consumption (max. AC)	VA	3.2
Supply indication (**U**)	-	Green LED
Switch indication (**S1/S2/S3**)		Green LED
OUTPUT RELAY (x3)		
Rating	-	5A - 250V~/24V⎓
Max switching power	VA	2000
Max switching voltage	V~	400
Min switching load	-	10mA 12V⎓
Contact life	Mech. Electr.	30 x 10^3 ops 100 x 10^3 ops
Changeover contacts	-	AgNi0.15
Output Indication (**15-18/25-28/35-38**)	-	Red LED
GENERAL		
Time Range rotary switch (**T**)	-	10s - 24h
Time Deviation	%	2
Repeat Accuracy	%	0.2 Set value
Rise time	ms	50
Working temperature	°C	-20 / +50
Storage temperature	°C	-30 / +70
Electrical Insulation (supply/switch)	kV	3
Electrical Insulation (supply/relay)	kV	4
Electrical Insulation (relay/switch)	kV	3
Overvoltage Category	-	III
Protection degree	IP	20
Pollution degree	-	2
Altitude up to	m	2000
Weight	g	210
Dimensions	mm	98 x 35.7 x 64

FUNCTIONS

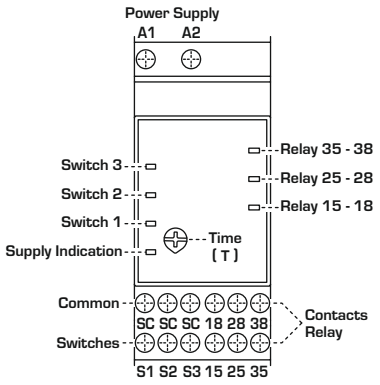


Use the selection ON only to test the functionality of all Relay contacts.

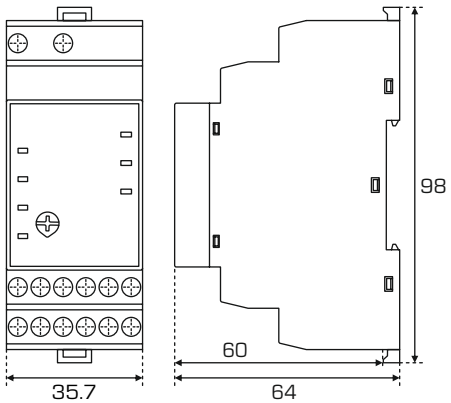
*During the delay time function the S1 LED blinking.

NOTE:
Whenever you change the Time (T), you must restart the device.

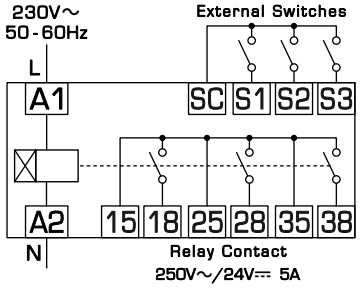
DESCRIPTION



DIMENSIONS (mm)

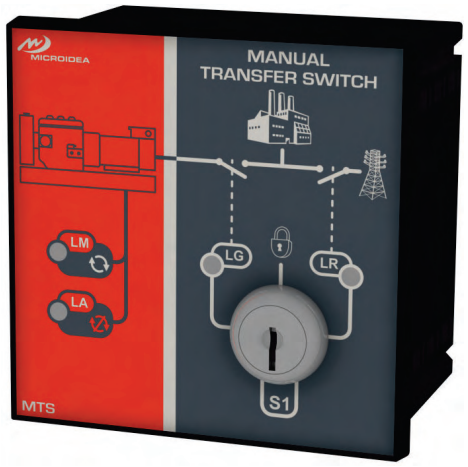


WIRING DIAGRAM



GENSET MTS Manual Transfer Switch

- SWITCH KEY SELECTOR FOR CHANGEOVER COMMAND
- MANUAL CONTROL OF GENERATOR/MAINS
- LED INDICATION STATUS
- 96X96 CASE FOR PANEL MOUNTING
- SELF-EXTINGUISHED MATERIAL UL94 V0



RoHS 2 COMPLIANT

CE

EU Directives - CE Marking:

> 2014/30/UE - EMC
> 2014/35/UE - LVD

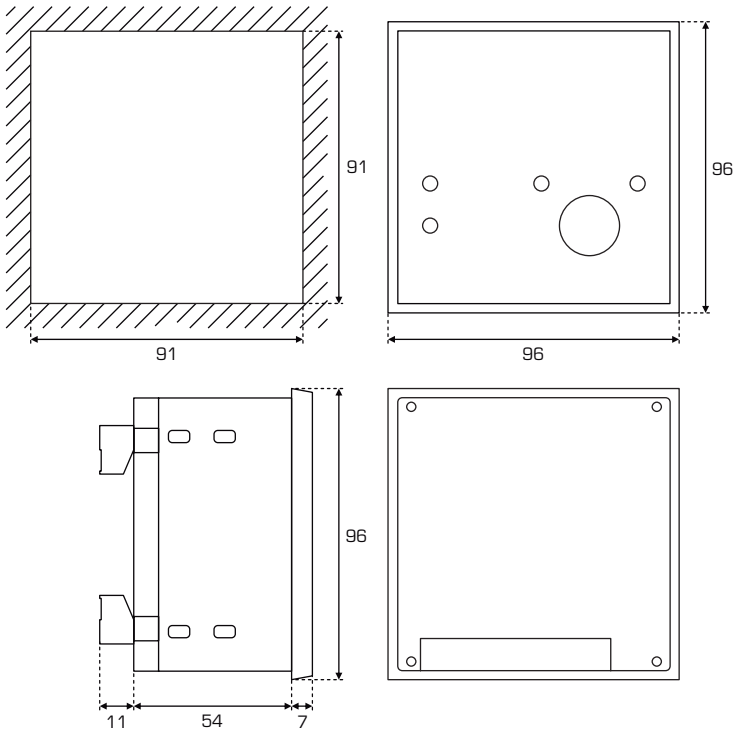
TECHNICAL DATA

	UNIT	MTS
Key Selector Max Contact Voltage	V~	250
Key Selector Max Contact Current	A	5
Working Temperature	°C	-20 /+50
Storage Temperature	°C	-30 /+70
Protection degree	IP	20
Pollution degree	-	2
Relative Humiduty w/o cond.	RH%	95
Altitude up to	m	2000
Weight	g	150
Dimensions	mm	96 x 96 x 72

LED INDICATIONS:

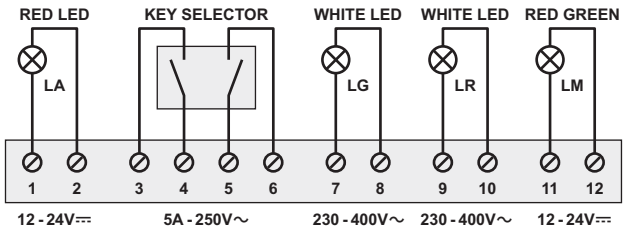
- **LR:** MAINS SIDE
- **LG:** GENERATOR SIDE
- **LM:** ENGINE RUNNING
- **LA:** ENGINE ALARM

DIMENSIONS (mm)

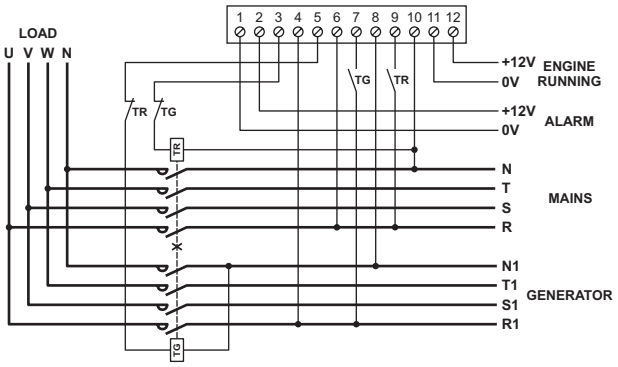


WIRING DIAGRAM

- INTERNAL CONNECTIONS



- TYPICAL APPLICATION



GENSET DTS-B/DTS-E Digital Transfer Switch

- THREE-PHASE VOLTAGE MEASUREMENTS - MAINS/GENSET
- MANUAL OR AUTOMATIC OPERATION
- MAINS AUTO DETECTION WITH AUTO RECONNECTION
- GENSET REMOTE START
- MIN AND MAX VOLTAGE PROTECTION - MAINS/GENSET
- RELAY OUTPUTS FOR MAINS/GENSET CONTACTOR
- SUPPLY VOLTAGE 8-30V⎓
- LCD GRAPHIC DISPLAY
- AVAILABLE LANGUAGES: ENGLISH, ITALIAN
- 96X96 CASE FOR PANEL MOUNTING
- SELF-EXTINGUISHED MATERIAL UL94 V0

COMING NEW PRODUCT SOON

RoHS 2 COMPLIANT

CE

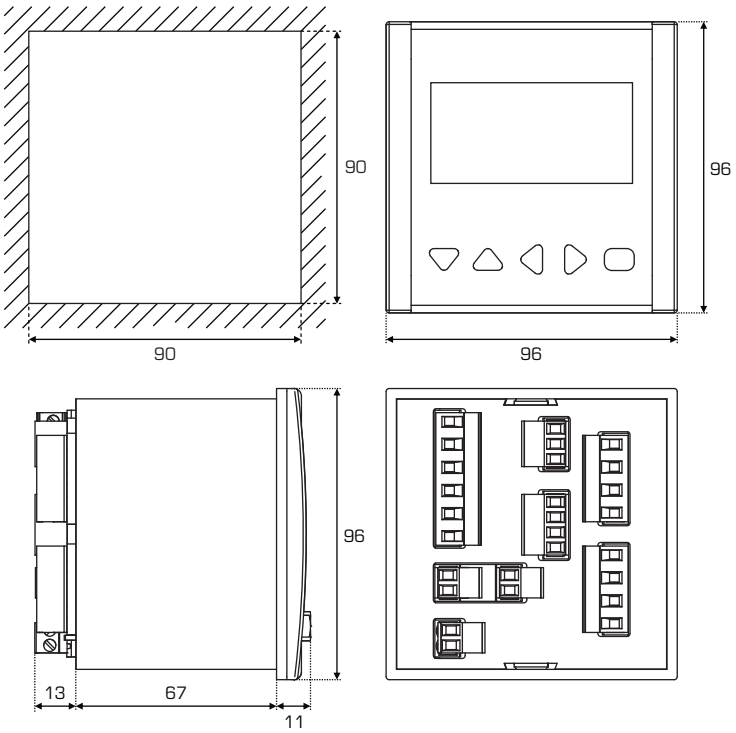
EU Directives - CE Marking:

> 2014/30/UE - EMC
> 2014/35/UE - LVD

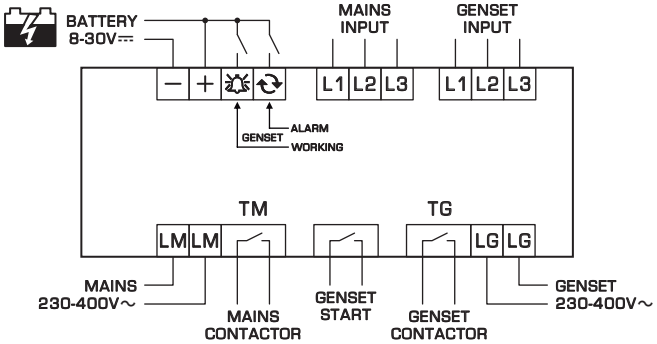
TECHNICAL DATA

	UNIT	DTS-B	DTS-E
Supply Voltage DC	V⎓	8 - 30	
Power consumption (max. DC)	W	3	
Measuring Type	V~	230 1PH 3PH / 400 - 440 3PH	
Display Type	-	64x128 Dot Matrix LCD COG	
Measuring Values	RMS	Real Effective Value	
Measuring Voltage range	V~	0 - 500	
Measuring Frequency Range	Hz	45 - 65	
Accuracy	%	± 2	
Working Temperature	°C	-20 / +50	
Storage Temperature	°C	-30 / +70	
Electrical Insulation	kV	4	
Protection degree	IP	20	
Pollution degree	-	2	
Relative Humiduty w/o cond.	RH%	90	
Altitude up to	m	2000	
Weight	g	340	370
Dimensions	mm	96 x 96 x 91	

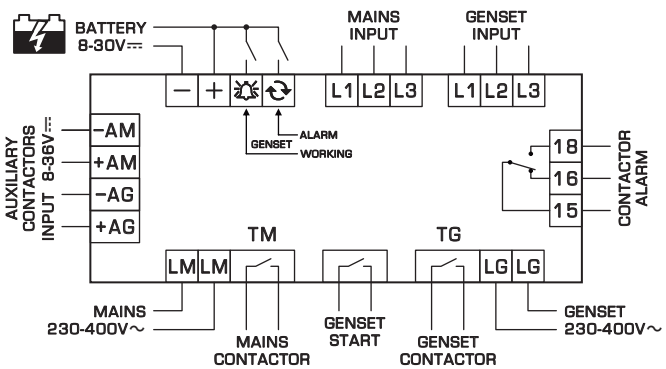
DIMENSIONS (mm)



WIRING DIAGRAM - DTS-B



WIRING DIAGRAM - DTS-E



BC BCMF...06L5/12L5/24L2 Switching Battery Charger

- COMPACT SIZE - 1 MODULE - 17.5mm
- REAL DECLARED VALUES
- SCREW CONNECTORS
- DIN RAIL MOUNTING EN50.022
- SELF-EXTINGUISHED MATERIAL UL94 V0

RoHS 2 COMPLIANT

CE

EU Directives - CE Marking:

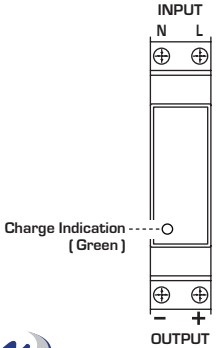
> 2014/30/UE - EMC
> 2014/35/UE - LVD

TECHNICAL DATA

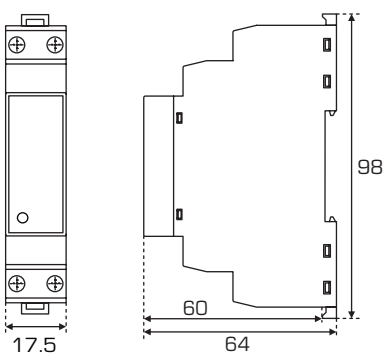
	UNIT	BCMF06L5	BCMF12L5	BCMF24L2
INPUT				
Supply voltage AC ±10%	V~	230		
Nominal Frequency	Hz	50 - 60 (range: 47 - 63)		
Power consumption (max. AC)	VA	12	18	15
In-rush current at rated V~ [1]	A	< 30		
Input overload protection	A	(internal)		
Input overvoltage protection % of VAC max	%	110		
OUTPUT				
Output voltage DC ±3%	V⎓	6.9	13.8	27.6
Max. continuos output current	A	0.5		0.2
Max. continuos output power	W	5.6	7.2	5.5
Mains/Load fluctuation control	%	± 3		
Ripple BW 20MHz at max. load	mV	300		
Hold-up time at rated V~ and max. load [2]	ms	> 20		
Rise time at rated V~ [2]	ms	700		
Charging curve type	-	Voltage and Current limited		
Output overvoltage protection min. % of Vout	%	120		
Output overload protection % of max. load [3]	%	110% with Hiccup		
GENERAL				
Efficiency at rated V~	%	75		
Working temperature - free convection	°C	-20 / +60		
De-rating 3.4% In/°C [4]	°C	> 45		
Storage temperature	°C	-30 / +70		
Electrical Insulation	kV	3		
Overvoltage Category	-	II		
Protection degree	IP	20		
Pollution degree	-	2		
Relative Humidity w/o cond.	RH%	90		
MTBF (MIL STD 217D at 35°C)	h	20 000		
Altitude up to	m	2000		
Weight	g	60		
Dimensions	mm	98 x 17.5 x 64		

[1] See Curve 3 - 4 in Technical Data
[2] See Curve 5 in Technical Data
[3] See Curve 2 in Technical Data
[4] See Curve 1 in Technical Data

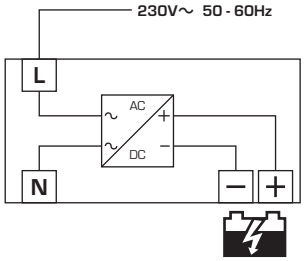
DESCRIPTION



DIMENSIONS (mm)



WIRING DIAGRAM



BC BCMF...12E2/24E1 Switching Battery Charger

For Generating Groups

- 1 CHARGING LEVEL
- PROTECTIONS:
  - Overvoltage AC Input (110% Ue)
  - Shortcircuit AC Input Fuse
  - Reverse Polarity of Battery With Electronic Fuse Resetable
- SIZE 4 MODULES - 70mm
- REAL DECLARED VALUES
- DIN RAIL MOUNTING EN50.022
- SELF-EXTINGUISHED MATERIAL UL94 V0

■ OPTIONAL: Tropicalization of PCB

EU Directives - CE Marking:

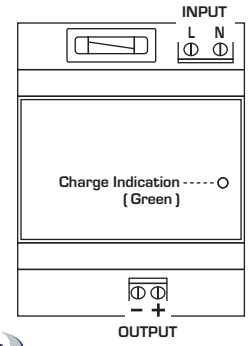
> 2014/30/UE - EMC
> 2014/35/UE - LVD

TECHNICAL DATA

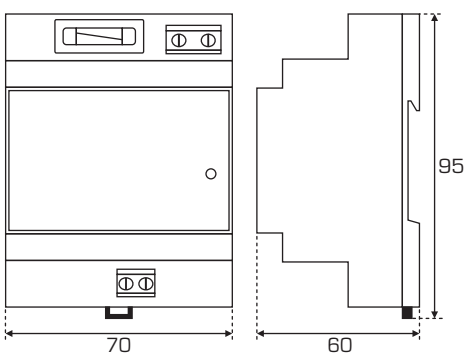
	UNIT	BCMF12E2	BCMF24E1
INPUT			
Supply voltage DC	V⎓	200 - 350	
Supply voltage AC ±10%	V~	230	
Nominal Frequency	Hz	50 - 60 (range: 47 - 63)	
Power consumption (max. AC)	VA	80	
In-rush current at rated V~ [1]	A	< 30	
Input overload protection T-type fuse	A	1	
Input overvoltage protection % of VAC max	%	110	
OUTPUT			
Output voltage DC ±7%	V⎓	13.8	27.6
Max. continuos output current	A	1.9	1.2
Max. continuos output power	W	25	
Mains/Load fluctuation control	%	± 2	
Ripple BW 20MHz at max. load	mV	300	
Hold-up time at rated V~ and max. load [2]	ms	120	
Rise time at rated V~ [2]	ms	700	
Charging curve type	-	Voltage and Current limited	
Output overvoltage protection min. % of Vout	%	120	
Output overload protection % of max. load [3]	%	110% with Hiccup	
GENERAL			
Efficiency at rated V~	%	80	
Working temperature - free convection	°C	-20 / +60	
De-rating 3.4% In/°C [4]	°C	> 45	
Storage temperature	°C	-30 / +70	
Electrical Insulation	kV	3	
Overvoltage Category	-	II	
Protection degree	IP	20	
Pollution degree	-	2	
Relative Humidity w/o cond.	RH%	90	
MTBF (MIL STD 217D at 35°C)	h	20 000	
Altitude up to	m	2000	
Weight	g	130	
Dimensions	mm	95 x 70 x 60	

[1] See Curve 3 - 4 in Technical Data
[2] See Curve 5 in Technical Data
[3] See Curve 2 in Technical Data
[4] See Curve 1 in Technical Data

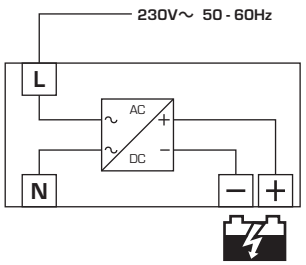
DESCRIPTION



DIMENSIONS (mm)



WIRING DIAGRAM



BC BCMI12E10/BCMI12E15 Switching Battery Charger

- 4 STATES BATTERY CHARGING
- ADJUSTABLE CHARGING CURRENT
- LLC TECHNOLOGY
- PFC CONTROL
- HIGH EFFICIENCY
- LOW HEAT DISSIPATION
- LED STATUS DISPLAY
- METALLIC BOX PROTECTION IP20
- COMPACT SIZE - 66mm
- DIN RAIL MOUNTING EN50.022

COMING NEW PRODUCT SOON

RoHS 2 COMPLIANT

CE

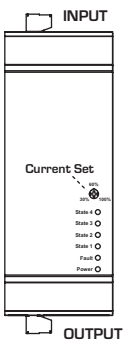
EU Directives - CE Marking:

> 2014/30/UE - EMC
> 2014/35/UE - LVD

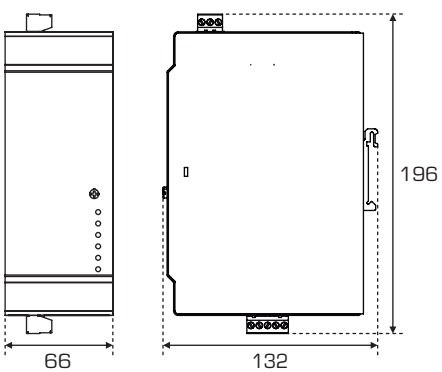
TECHNICAL DATA

	UNIT	BCMI12E10	BCMI12E15	BCMI24E10	BCMI24E15
INPUT					
Supply voltage DC	V⎓	150 - 350			
Supply voltage AC ±10%	V~	90 - 264			
Nominal Frequency	Hz	50 - 60 (range: 47 - 63)			
Power consumption (max. AC)	VA	130	240	260	480
In-rush current at rated V~ [1]	A	< 30			
Input overload protection T-type fuse	A	4			
Input overvoltage protection % of VAC max	%	110			
OUTPUT					
Output voltage DC ±1.5% (Floating state)	V⎓	13.8		27.6	
Max. output current adj. 30 - 100% of Iout	A	10	15	10	15
Max. continuos output power	W	120	220	240	360
Mains/Load fluctuation control	%	± 2			
Charging curve type	-	3 Levels			
Output overvoltage protection min. % of Vout	%	120			
Output overload protection % of max. load [2]	%	110% with Hiccup			
GENERAL					
Efficiency at rated V~	%	92			
Working temperature - free convection	°C	-20 / +60			
De-rating 3.4% In/°C [3]	°C	> 55			
Storage temperature	°C	-30 / +70			
Electrical Insulation	kV	3 (IN/OUT) 1.5 (IN/⏚) 0.5 (OUT/⏚)			
Overvoltage Category	-	II			
Protection degree	IP	20			
Pollution degree	-	2			
Relative Humidity w/o cond.	RH%	90			
MTBF (MIL STD 217D at 35°C)	h	15 000			
Battery alarm	-	NPN open collector 500mA (max)			
Threshold for Low Battery voltage (V Rated)	%	< 50			
Protection against battery reverse polarity	-	Electronic Circuit			
Altitude up to	m	2000			
Weight	g	1500	1700	1600	1800
Dimensions	mm	196 x 66 x 132			

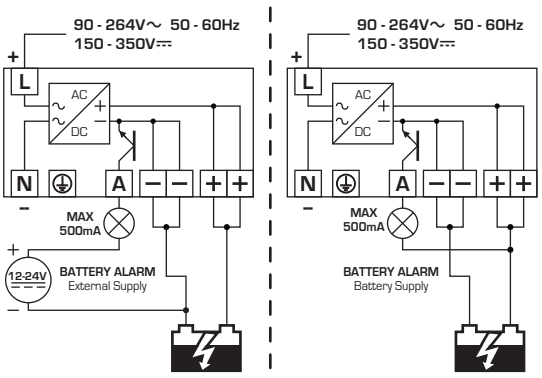
DESCRIPTION



DIMENSIONS (mm)



WIRING DIAGRAM



SW SWMF...05L5/12L5/24L2 Switching Power Supply

- ▸ COMPACT SIZE - 1 MODULE - 17.5mm
- ▸ SCREW CONNECTORS
- ▸ REAL DECLARED VALUES
- ▸ DIN RAIL MOUNTING EN50.022
- ▸ SELF-EXTINGUISHED MATERIAL UL94 V0

RoHS 2 COMPLIANT

CE

EU Directives - CE Marking:

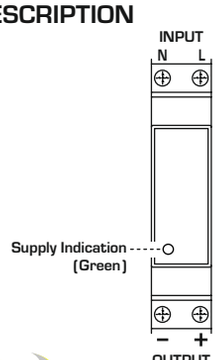
> 2014/30/UE - EMC
> 2014/35/UE - LVD

TECHNICAL DATA

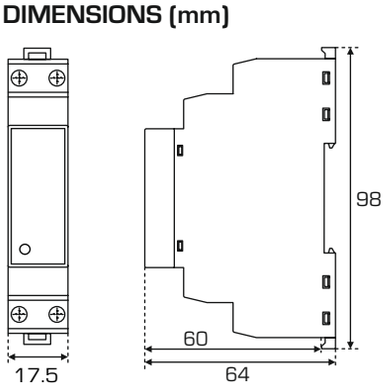
INPUT	UNIT	SWMF05L5	SWMF12L5	SWMF24L2
Supply voltage AC ±10%	V~		230	
Nominal Frequency	Hz		50 - 60 (range: 47 - 63)	
Power consumption (max. AC)	VA	12	18	15
In-rush current at rated V~ [1]	A		< 30	
Input overload protection	-		(internal)	
Input overvoltage protection (max. AC)	%		110	
OUTPUT				
Output voltage DC ±2%	V⎓	5	12	24
Max. continuos output current	A	0.5	0.5	0.2
Max. continuos output power	W	3	6.5	5
Mains/Load fluctuation control	%		± 3	
Ripple BW 20MHz at max. load	mV		< 150	
Hold-up time at rated V~ and max. load [2]	ms		> 40	
Rise time at rated V~ [2]	ms		5	
Parallel connection	-		NO	
Output overvoltage protection min. % of Vout	%		120	
Output overload protection % of max. load [3]	%		110% with Hiccup	
GENERAL				
Efficiency at rated V~	%		75	
Working temperature - free convection	°C		-20 / +60	
De-rating 3.4% In/°C [4]	°C		> 45	
Storage temperature	°C		-30 / +70	
Electrical Insulation	kV		3	
Overvoltage Category	-		II	
Protection degree	IP		20	
Pollution degree	-		2	
Relative Humidity w/o cond.	RH%		90	
MTBF (MIL STD 217D at 35°C)	h		20 000	
Altitude up to	m		2000	
Weight	g		60	
Dimensions	mm		98 x 17.5 x 64	

(1) See Curve 3 - 4 in User Manual (2) See Curve 5 in User Manual (3) See Curve 2 in User Manual (4) See Curve 1 in User Manual

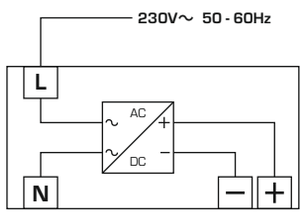
DESCRIPTION



DIMENSIONS (mm)



WIRING DIAGRAM



SW SWMF...1202/2401 Switching Power Supply

- SIZE 4 MODULES - 70mm
- SCREW CONNECTORS
- REAL DECLARED VALUES
- DIN RAIL MOUNTING EN50.022
- SELF-EXTINGUISHED MATERIAL UL94 V0

RoHS 2 COMPLIANT

CE

EU Directives - CE Marking:

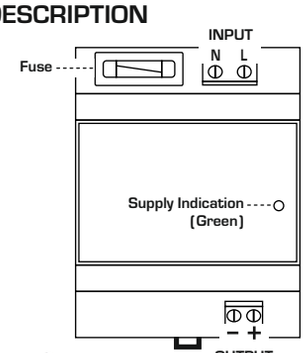
> 2014/30/UE - EMC
> 2014/35/UE - LVD

TECHNICAL DATA

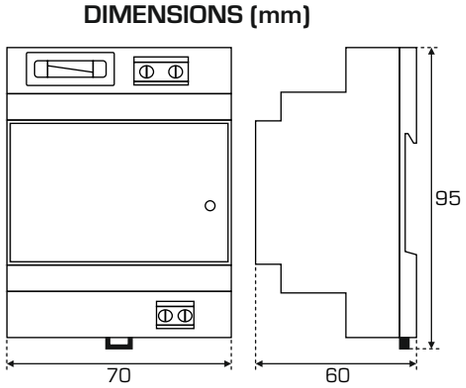
	UNIT	SWMF1202	SWMF2401
INPUT			
Supply voltage DC	V⎓	200 - 350	
Supply voltage AC ±10%	V~	230	
Nominal Frequency	Hz	50 - 60 (range: 47 - 63)	
Power consumption (max. AC)	VA	80	
In-rush current at rated V~ [1]	A	32	
Input overload protection T-type fuse	A	1	
Input overvoltage protection (max. AC)	%	110	
OUTPUT			
Output voltage DC ±2%	V⎓	12	24
Max. continuos output current	A	2	1
Max. continuos output power	W	30	
Mains/Load fluctuation control	%	± 1	
Ripple BW 20MHz at max. load	mV	< 200	< 80
Hold-up time at rated V~ and max. load [2]	ms	100	
Rise time at rated V~ [2]	ms	100	
Parallel connection [3]	-	Allowed	
Output overvoltage protection min. % of Vout	%	120	
Output overload protection % of max. load [4]	%	110% with Hiccup	
GENERAL			
Efficiency at rated V~	%	75	
Working temperature - free convection	°C	-20 / +60	
De-rating 3.4% In/°C [5]	°C	> 45	
Storage temperature	°C	-30 / +70	
Electrical Insulation	kV	3	
Overvoltage Category	-	II	
Protection degree	IP	20	
Pollution degree	-	2	
Relative Humidity w/o cond.	RH%	90	
MTBF (MIL STD 217D at 35°C)	h	20 000	
Altitude up to	m	2000	
Weight	g	60	
Dimensions	mm	95 x 70 x 60	

[1] See Curve 3 - 4 in User Manual
[2] See Curve 5 in User Manual
[3] See Connecting in parallel in User Manual
[4] See Curve 2 in User Manual
[5] See Curve 1 in User Manual

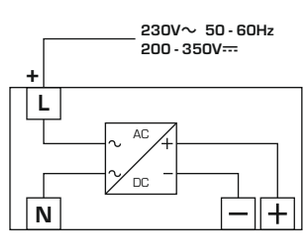
DESCRIPTION



DIMENSIONS (mm)



WIRING DIAGRAM



SW SWMT2445/e Switching Power Supply

- HIGH EFFICIENCY UP TO 90%
- 150% PEAK LOAD CAPABILITY
- 105°C LONG LIFE CAPACITANCE
- METALLIC BOX PROTECTION IP20
- DIN RAIL MOUNTING EN50.022

■ **PROTECTION:**
- Short circuit
- Overload
- Overvoltage
- Overtemperature (only on standard line)

EU Directives - CE Marking:
> 2014/30/UE - EMC
> 2014/35/UE - LVD

TECHNICAL DATA

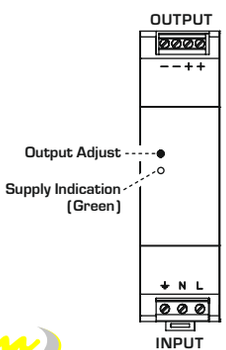
	UNIT	SWMT2445	SWMT2445e
INPUT			
Supply voltage AC	V~	100 - 240	
Nominal frequency	Hz	50 - 60 (range: 47 - 63)	
Supply voltage DC	V⎓	140 - 340	
Input current at 230VAC	A	0.4	0.6
In-rush current at 230VAC	A	15	35
Input overload protection T-type fuse (internal)	A	2	
Power Factor at 230VAC	-	0.5	
OUTPUT			
Output adjustable voltage DC	V⎓	24 - 28 (±2%)	
Max. continuos output current	A	2	
Max. continuos output power	W	45	
Ripple BW 20MHz at max. load	mV	120	100
Hold-up time at rated V~ and max. load	ms	20	
Rise time at rated V~	ms	200	200
Parallel connection	-	NO	
Output overvoltage protection min. % of Vout	%	120 - 135	120 - 150
Output overload protection % of max. load	%	110 - 150	
Power good relay	%	NO	
GENERAL			
Efficiency at rated V~	%	88.5	88
Working temperature - free convection	°C	-25 / +70	-20 / +60
De-rating 2.5% In/°C	°C	> 55	
Storage temperature	°C	-40 / +85	
Electrical Insulation	kV	3 (IN/OUT) 1.5 (IN/⏚)	0.5 (OUT/⏚)
Over-temperature protection	-	YES	NO
Protection degree	IP	20	
Relative Humidity w/o cond.	RH%	90	
Altitude up to	m	2000	
Weight	g	310	
Dimensions	mm	130 x 35 x 110	

ECONOMY LINE

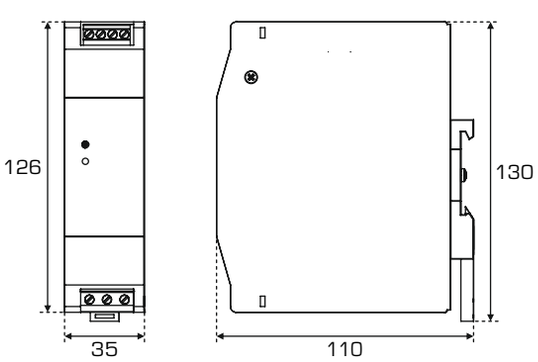
RoHS 2 COMPLIANT

CE

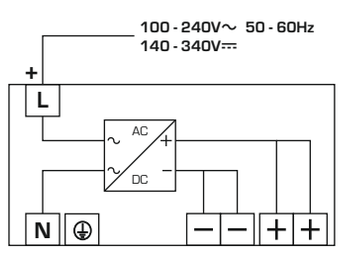
DESCRIPTION



DIMENSIONS (mm)



WIRING DIAGRAM



SW SWMT2475/e Switching Power Supply

- HIGH EFFICIENCY UP TO 90%
- 150% PEAK LOAD CAPABILITY
- 105°C LONG LIFE CAPACITANCE
- METALLIC BOX PROTECTION IP20
- DIN RAIL MOUNTING EN50.022

■ **PROTECTION:**
- Short circuit
- Overload
- Overvoltage
- Overtemperature (only on standard line)

EU Directives - CE Marking:
> 2014/30/UE - EMC
> 2014/35/UE - LVD

TECHNICAL DATA

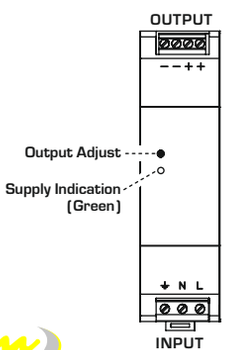
INPUT	UNIT	SWMT2475	SWMT2475e
Supply voltage AC	V~	100 - 240	
Nominal frequency	Hz	50 - 60 (range: 47 - 63)	
Supply voltage DC	V⎓	140 - 340	
Input current at 230VAC	A	0.97	0.9
In-rush current at 230VAC	A	20	35
Input overload protection T-type fuse (internal)	A	3.15	
Power Factor at 230VAC	-	0.5	
OUTPUT			
Output adjustable voltage DC	V⎓	24 - 28 (±2%)	
Max. continuos output current	A	3	
Max. continuos output power	W	75	
Ripple BW 20MHz at max. load	mV	120	100
Hold-up time at rated V~ and max. load	ms	20	
Rise time at rated V~	ms	200	200
Parallel connection	-	NO	
Output overvoltage protection min. % of Vout	%	120 - 135	120 - 150
Output overload protection % of max. load	%	110 - 150	
Power good relay	%	NO	
GENERAL			
Efficiency at rated V~	%	89.5	88
Working temperature - free convection	°C	-25 / +70	-20 / +60
De-rating 2.5% In/°C	°C	> 55	
Storage temperature	°C	-40 / +85	
Electrical Insulation	kV	3 (IN/OUT) 1.5 (IN/⏚)	0.5 (OUT/⏚)
Over-temperature protection	-	YES	NO
Protection degree	IP	20	
Relative Humidity w/o cond.	RH%	90	
Altitude up to	m	2000	
Weight	g	360	
Dimensions	mm	130 x 35 x 110	

ECONOMY LINE

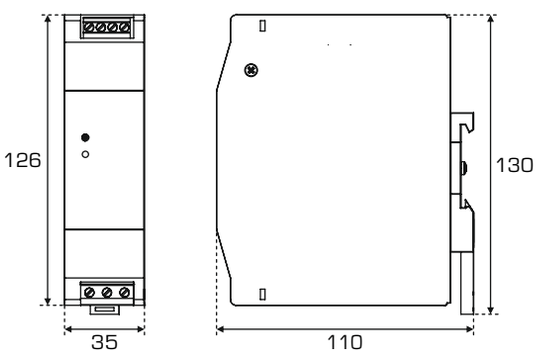
RoHS 2 COMPLIANT

CE

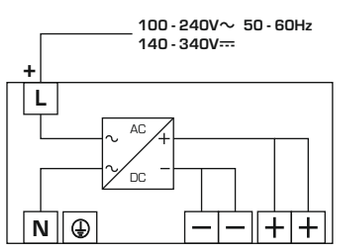
DESCRIPTION



DIMENSIONS (mm)



WIRING DIAGRAM



SW SWMT24120/e Switching Power Supply

- ▸ HIGH EFFICIENCY UP TO 92%
- ▸ 150% PEAK LOAD CAPABILITY
- ▸ 105°C LONG LIFE CAPACITANCE
- ▸ BUILT-IN ACTIVE PFC FUNCTION
- ▸ METALLIC BOX PROTECTION IP20
- ▸ DIN RAIL MOUNTING EN50.022

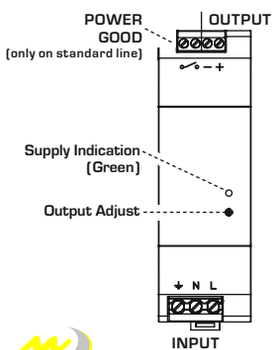
■ **PROTECTION:**
- Short circuit
- Overload
- Overvoltage
- Overtemperature (only on standard line)

EU Directives - CE Marking:
> 2014/30/UE - EMC
> 2014/35/UE - LVD

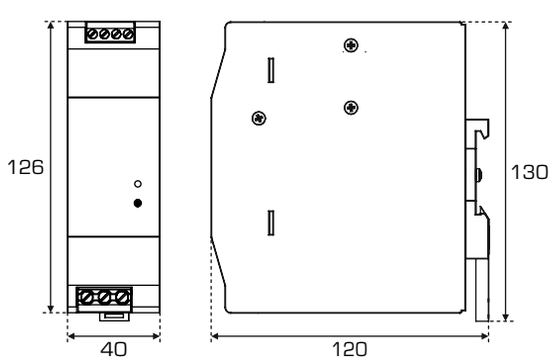
TECHNICAL DATA

INPUT	UNIT	SWMT24120	SWMT24120e
Supply voltage AC	V~	100 - 240	
Nominal frequency	Hz	50 - 60 (range: 47 - 63)	
Supply voltage DC	V⎓	140 - 340	
Input current at 230VAC	A	0.6	1.4
In-rush current at 230VAC	A	25	35
Input overload protection T-type fuse (internal)	A	5	4
Power Factor at 230VAC	-	0.96	0.5
OUTPUT			
Output adjustable voltage DC	V⎓	24 - 28 (±2%)	
Max. continuos output current	A	5	
Max. continuos output power	W	120	
Ripple BW 20MHz at max. load	mV	80	150
Hold-up time at rated V~ and max. load	ms	20	
Rise time at rated V~	ms	60	60
Parallel connection	-	NO	
Output overvoltage protection min. % of Vout	%	110 - 140	120 - 150
Output overload protection % of max. load	%	110 - 150	
Power good relay	%	YES	NO
GENERAL			
Efficiency at rated V~	%	92	86
Working temperature - free convection	°C	-25 / +70	-20 / +60
De-rating 2.5% In/°C	°C	> 55	
Storage temperature	°C	-40 / +85	
Electrical Insulation	kV	3 (IN/OUT) 1.5 (IN/⏚)	0.5 (OUT/⏚)
Over-temperature protection	-	YES	NO
Protection degree	IP	20	
Relative Humidity w/o cond.	RH%	90	
Altitude up to	m	2000	
Weight	g	540	
Dimensions	mm	130 x 40 x 120	

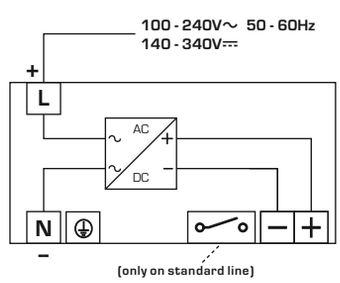
DESCRIPTION



DIMENSIONS (mm)



WIRING DIAGRAM



SW SWMT24240/e Switching Power Supply

- ▸ HIGH EFFICIENCY UP TO 93%
- ▸ 150% PEAK LOAD CAPABILITY
- ▸ 105°C LONG LIFE CAPACITANCE
- ▸ BUILT-IN ACTIVE PFC FUNCTION
- ▸ LLC TECHNOLOGY
- ▸ METALLIC BOX PROTECTION IP20
- ▸ DIN RAIL MOUNTING EN50.022

■ **PROTECTION:**
- Short circuit
- Overload
- Overvoltage
- Overtemperature

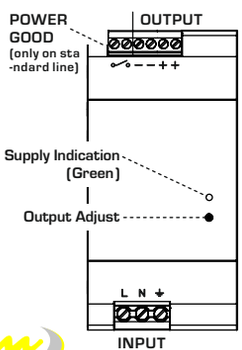
EU Directives - CE Marking:
> 2014/30/UE - EMC
> 2014/35/UE - LVD

TECHNICAL DATA

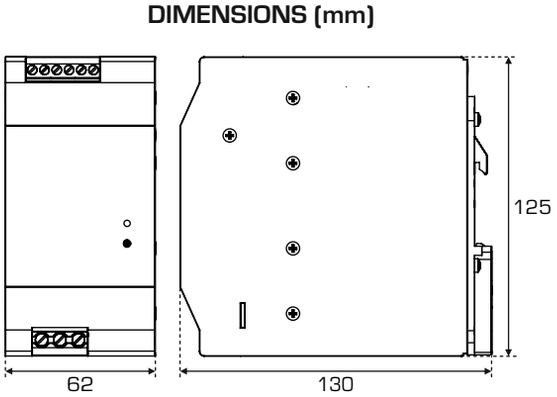
INPUT	UNIT	SWMT24240	SWMT24240e
Supply voltage AC	V~	100 - 240	
Nominal frequency	Hz	50 - 60 (range: 47 - 63)	
Supply voltage DC	V⎓	140 - 340	
Input current at 230VAC	A	1.4	1.5
In-rush current at 230VAC	A	30	35
Input overload protection T-type fuse (internal)	A	5	
Power Factor at 230VAC	-	0.92	0.96
OUTPUT			
Output adjustable voltage DC	V⎓	24 - 28 (±2%)	
Max. continuos output current	A	10	
Max. continuos output power	W	240	
Ripple BW 20MHz at max. load	mV	100	120
Hold-up time at rated V~ and max. load	ms	20	
Rise time at rated V~	ms	60	60
Parallel connection	-	NO	
Output overvoltage protection min. % of Vout	%	120 - 150	
Output overload protection % of max. load	%	110 - 150	
Power good relay	%	YES	NO
GENERAL			
Efficiency at rated V~	%	93	91
Working temperature - free convection	°C	-25 / +70	-20 / +50
De-rating 2.5% In/°C	°C	> 60	
Storage temperature	°C	-40 / +85	
Electrical Insulation	kV	3 (IN/OUT) 1.5 (IN/⏚) 0.5 (OUT/⏚)	
Over-temperature protection	-	YES	
Protection degree	IP	20	
Relative Humidity w/o cond.	RH%	90	
Altitude up to	m	2000	
Weight	g	810	
Dimensions	mm	130 x 62 x 125	

ECONOMY LINE

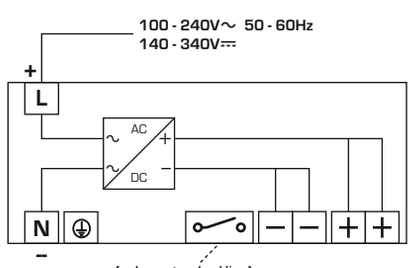
DESCRIPTION



DIMENSIONS (mm)



WIRING DIAGRAM



SW SWMT24480 Switching Power Supply

- ▸ HIGH EFFICIENCY UP TO 94%
- ▸ 150% PEAK LOAD CAPABILITY
- ▸ 105°C LONG LIFE CAPACITANCE
- ▸ BUILT-IN ACTIVE PFC FUNCTION
- ▸ LLC TECHNOLOGY
- ▸ PARALLEL REDUNDANT FUNCTION (1+1)
- ▸ METALLIC BOX PROTECTION IP20
- ▸ DIN RAIL MOUNTING EN50.022

■ PROTECTION:
- Short circuit
- Overload
- Overvoltage
- Overtemperature

RoHS 2 COMPLIANT

CE

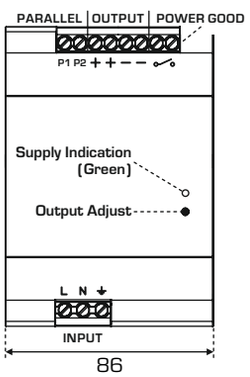
EU Directives - CE Marking:

> 2014/30/UE - EMC
> 2014/35/UE - LVD

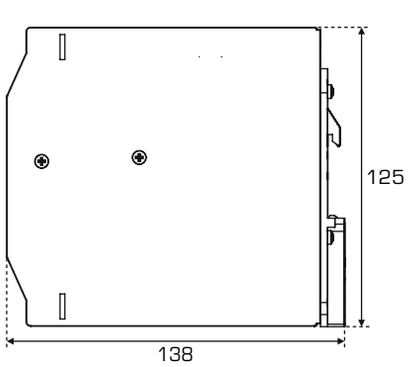
TECHNICAL DATA

INPUT	UNIT	SWMT24480
Supply voltage AC	V~	100 - 240
Nominal frequency	Hz	50 - 60 (range: 47 - 63)
Supply voltage DC	V⎓	140 - 340
Input current at 230VAC	A	2.4
In-rush current at 230VAC	A	50
Input overload protection T-type fuse (internal)	A	6.3
Power Factor at 230VAC	-	0.97
OUTPUT		
Output adjustable voltage DC	V⎓	24 - 28 (±2%)
Max. continuos output current	A	20
Max. continuos output power	W	480
Ripple BW 20MHz at max. load	mV	150
Hold-up time at rated V~ and max. load	ms	20
Rise time at rated V~	ms	60
Parallel connection	-	Allowed
Output overvoltage protection min. % of Vout	%	110 - 140
Output overload protection % of max. load	%	110 - 150
Power good relay	%	YES
GENERAL		
Efficiency at rated V~	%	93
Working temperature - free convection	°C	-25 / +70
De-rating 2.5% In/°C	°C	> 60
Storage temperature	°C	-40 / +85
Electrical Insulation	kV	3 (IN/OUT) 1.5 (IN/⊕) 0.5 (OUT/⊕)
Over-temperature protection	-	YES
Protection degree	IP	20
Relative Humidity w/o cond.	RH%	90
Altitude up to	m	2000
Weight	g	1320
Dimensions	mm	138 x 86 x 125

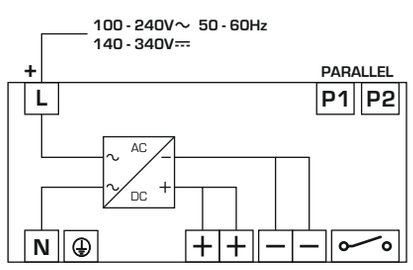
DESCRIPTION



DIMENSIONS (mm)



WIRING DIAGRAM



SW SWTL2410 3PH Switching Power Supply

- ADJUSTABLE OUTPUT VOLTAGE
- THERMAL PROTECTION
- ELECTRO-MECHANICAL OVERTEMP ALARM
- METALLIC BOX PROTECTION IP20
- SCREW CONNECTORS
- ADVANCED DESIGN
- DIN RAIL MOUNTING EN50.022 OR SCREW

RoHS 2 COMPLIANT

CE

EU Directives - CE Marking:

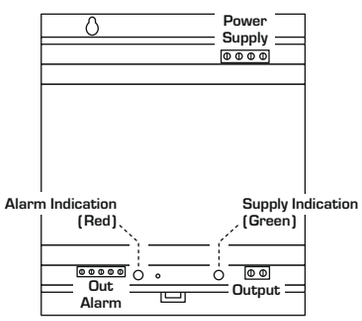
> 2014/30/UE - EMC
> 2014/35/UE - LVD

TECHNICAL DATA

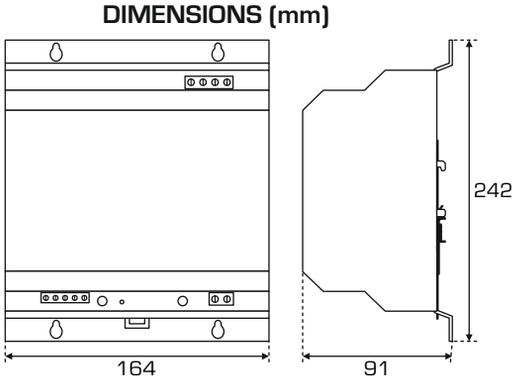
INPUT	UNIT	SWTL2410
Supply voltage AC ±10%	V~	3 x 350 - 500
Nominal Frequency	Hz	50 - 60 (range: 47 - 63)
Power consumption (max. AC)	VA	625
In-rush current at rated V~ [1]	A	50 (Electronic Limitation)
Input overvoltage protection (max. AC)	%	110
OUTPUT		
Output voltage DC adjustable	V⎓	24 (range: 22 - 28)
Max. continuos output current	A	10
Max. continuos output power	W	240
Mains/Load fluctuation control	%	± 1
Ripple BW 20MHz at max. load	mV	< 50
Hold-up time at rated V~ and max. load [2]	ms	90
Rise time at rated V~ [2]	ms	2000
Parallel connection [3]	-	Allowed
Output overvoltage protection min. % of Vout	%	120
Output overload protection % of max. load [4]	%	110% with Hiccup
Red LED overload alarm	V	ON for Vout < 20
Relay overload alarm	V	Excited coil for Vout < 20
Bimetallic trasducer (Thermal protection)	°C	Normally NC - NO > 100
GENERAL		
Efficiency at rated V~	%	> 87
Working temperature - free convection	°C	-20 /+60
Always without de-rating with max. Iout	°C	60
Storage temperature	°C	-30 /+70
Electrical Insulation	kV	3 (IN/OUT) 1.5 (IN/⏚) 0.5 (OUT/⏚)
Overvoltage Category	-	II
Protection degree	IP	20
Pollution degree	-	2
Relative Humidity w/o cond.	RH%	95
MTBF (MIL STD 217D at 35°C)	h	20 000
Altitude up to	m	2000
Weight	g	3560
Dimensions	mm	242 x 164 x 91

[1] See Curve 3 - 4 in User Manual [2] See Curve 5 in User Manual [3] See Connecting in parallel in User Manual [4] See Curve 2 in User Manual

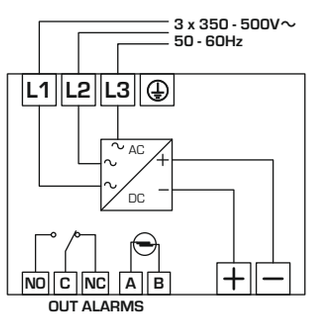
DESCRIPTION



DIMENSIONS (mm)

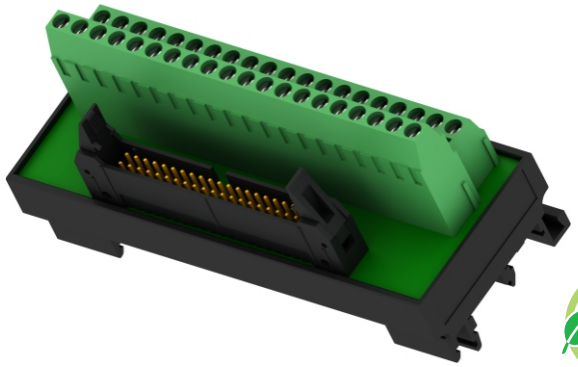


WIRING DIAGRAM



IP IPF...10/16/20/26/34/40...MM Flat-Cable Interfaces

- FLAT CABLE FROM 10 TO 40 POLES
- COMPACT INTERFACE
- SCREW CONNECTORS
- DIN RAIL MOUNTING EN50.022
- SELF-EXTINGUISHED MATERIAL UL94 V0



RoHS 2 COMPLIANT

CE

EU Directives - CE Marking:

> 2014/30/UE - EMC
> 2014/35/UE - LVD

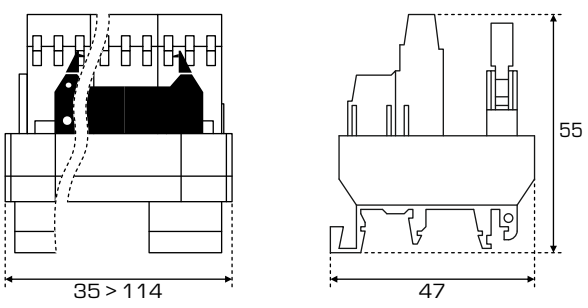
TECHNICAL DATA

	UNIT	IPF10MM	IPF16MM	IPF20MM
Input AC/DC rated voltage	V~/⎓	0 - 120		
Max. current for channel	A	2		
Number of Pole for interface	-	10	16	20
Input Connection	-	Screw Terminal Block - 2.5mm²		
Output Connection	-	Male Flat 10 poles	Male Flat 16 poles	Male Flat 20 poles
Working temperature	°C	-20 / +60		
Storage temperature	°C	-30 / +85		
Protection degree	IP	00		
Pollution degree	-	2		
Weight	g	35	56	75
Dimensions	mm	55 x 35 x 47	55 x 46 x 47	55 x 58 x 47

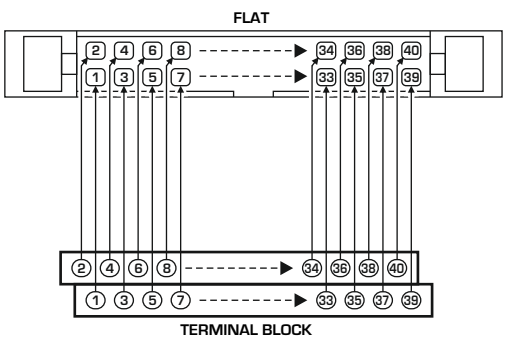
TECHNICAL DATA

	UNIT	IPF26MM	IPF34MM	IPF40MM
Input AC/DC rated voltage	V~/⎓	0 - 120		
Max. current for channel	A	2		
Number of Pole for interface	-	26	34	40
Input Connection	-	Screw Terminal Block - 2.5mm²		
Output Connection	-	Male Flat 26 poles	Male Flat 34 poles	Male Flat 40 poles
Working temperature	°C	-20 / +60		
Storage temperature	°C	-30 / +85		
Protection degree	IP	00		
Pollution degree	-	2		
Weight	g	90	120	140
Dimensions	mm	55 x 80 x 47	55 x 103 x 47	55 x 114 x 47

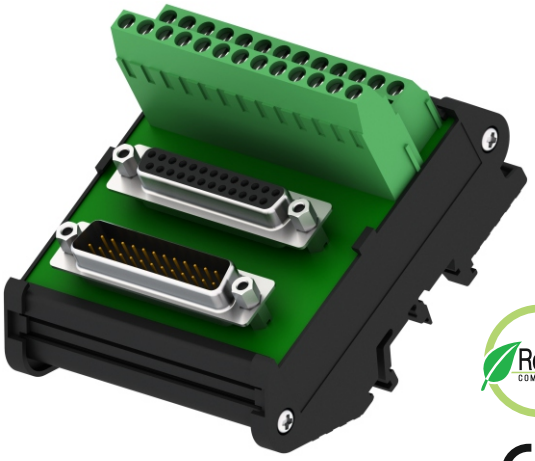
DIMENSIONS (mm)



WIRING DIAGRAM



- D-SUB CABLE 9/15 POLES
- COMPACT INTERFACE
- SCREW CONNECTORS
- DIN RAIL MOUNTING EN50.022
- SELF-EXTINGUISHED MATERIAL UL94 V0



RoHS 2 COMPLIANT

CE

EU Directives - CE Marking:

> 2014/30/UE - EMC
> 2014/35/UE - LVD

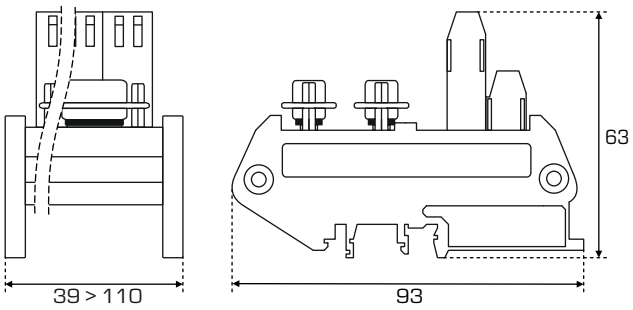
TECHNICAL DATA

	UNIT	IPV09FM	IPV09MM	IPV09FMM	IPV15FM	IPV15MM	IPV15FMM
Input AC/DC rated voltage	V~/⎓	0 - 75			0 - 75		
Max. current for channel	A	1			1		
Number of Pole for interface	-	9			15		
Input Connection	-	Screw Terminal Block - 2.5mm²			Screw Terminal Block - 2.5mm²		
Output Connection D-Sub	-	Female	Male	Female and Male	Female	Male	Female and Male
Working temperature	°C	-20 /+60			-20 /+60		
Storage temperature	°C	-30 /+85			-30 /+85		
Protection degree	IP	00			00		
Pollution degree	-	2			2		
Weight	g	57		65	85		95
Dimensions	mm	93 x 39 x 63			93 x 49 x 63		

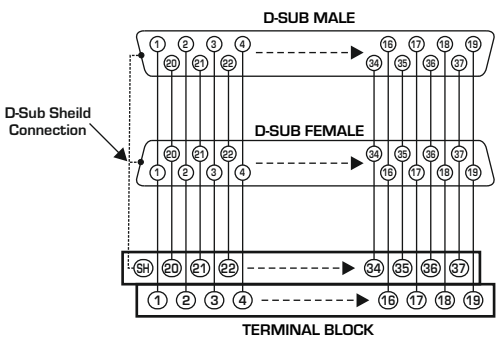
TECHNICAL DATA

	UNIT	IPV25FM	IPV25MM	IPV25FMM	IPV37FM	IPV37MM	IPV37FMM
Input AC/DC rated voltage	V~/⎓	0 - 75			0 - 75		
Max. current for channel	A	1			1		
Number of Pole for interface	-	25			37		
Input Connection	-	Screw Terminal Block - 2.5mm²			Screw Terminal Block - 2.5mm²		
Output Connection D-Sub	-	Female	Male	Female and Male	Female	Male	Female and Male
Working temperature	°C	-20 /+60			-20 /+60		
Storage temperature	°C	-30 /+85			-30 /+85		
Protection degree	IP	00			00		
Pollution degree	-	2			2		
Weight	g	126		140	146		160
Dimensions	mm	93 x 73 x 63			93 x 110 x 63		

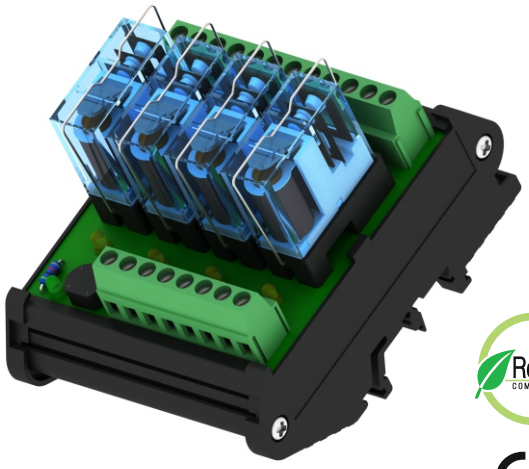
DIMENSIONS (mm)



WIRING DIAGRAM



- 4 RELAY - SINGLE CONTACT or DOUBLE CONTACT
- COMPACT INTERFACE
- SCREW CONNECTORS
- DIN RAIL MOUNTING EN50.022
- SELF-EXTINGUISHED MATERIAL UL94 V0



RoHS 2 COMPLIANT

CE

EU Directives - CE Marking:

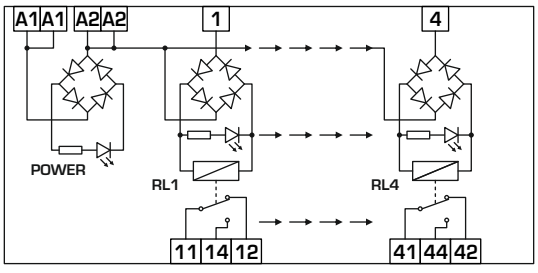
> 2014/30/UE - EMC
> 2014/35/UE - LVD

TECHNICAL DATA

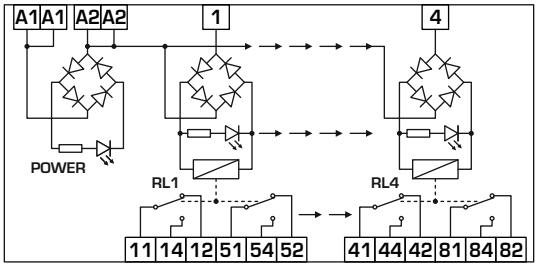
	UNIT	IRA04CHA	IRA04CHB	IRA04EHA	IRA04EHB	IRA04FAA	IRA04FAB
INPUT							
Supply voltage DC ±10%	V⎓	24		115		-	
Supply voltage AC ±10%	V~	24		115		230	
Nominal Frequency	Hz	50 - 60 (range: 47 - 63)					
Current absorbed for channel ±10%	mA	30		12		7	
Max. operate time (set)	ms	15					
Max. release time (reset)	ms	5		10			
Input Connection	-	Screw Terminal Block - 2.5mm²					
OUTPUT							
Number of Relay for interface	-	4					
Number of contact for channel	-	1	2	1	2	1	2
Rated voltage for contact	V~	250					
Rated current for contact	A	10	5	10	5	10	5
Breaking capacity	A	10	5	10	5	10	5
Min. permissible Load	mA/V	100/5					
Rated Load in AC	VA	2000	1250	2000	1250	2000	1250
Rated Load in DC	W	300	150	300	150	300	150
Output Connection	-	Screw Terminal Block - 2.5mm²					
GENERAL							
Working temperature	°C	-20 / +60					
Storage temperature	°C	-30 / +85					
Protection degree	IP	00					
Protection degree	-	2					
Display LED	-	Green (Power ON) / Yellow (Channel ON)					
Weight	g	190	215	190	215	190	215
Dimensions	mm	75 x 70 x 93					

WIRING DIAGRAM

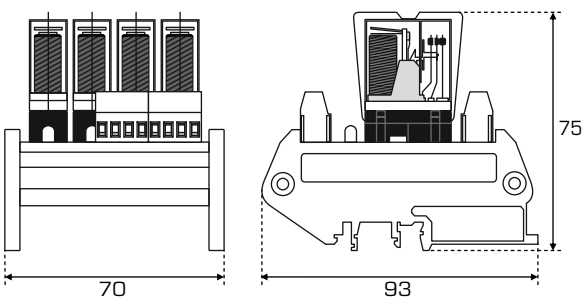
RELAY SPDT



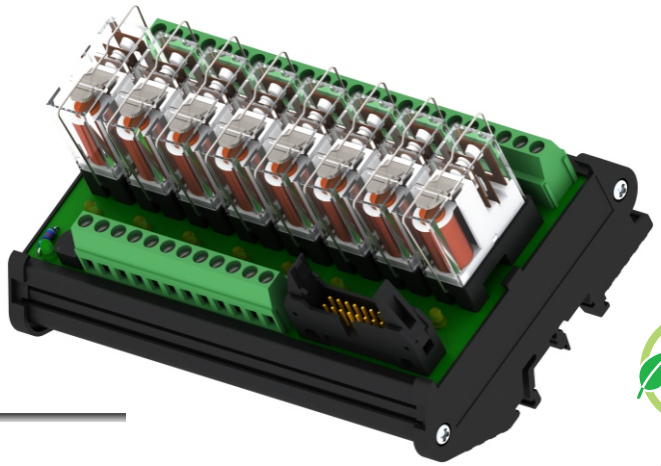
RELAY DPDT



DIMENSIONS (mm)



- 8 RELAY - SINGLE CONTACT or DOUBLE CONTACT
- COMPACT INTERFACE
- SCREW CONNECTORS
- DIN RAIL MOUNTING EN50.022
- SELF-EXTINGUISHED MATERIAL UL94 V0



EU Directives - CE Marking:

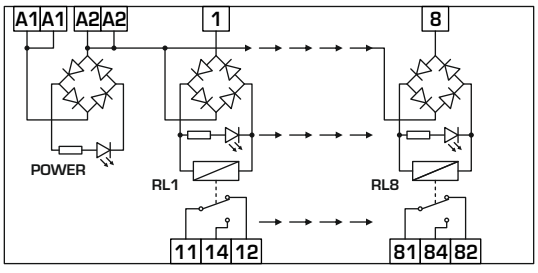
> 2014/30/UE - EMC
> 2014/35/UE - LVD

TECHNICAL DATA

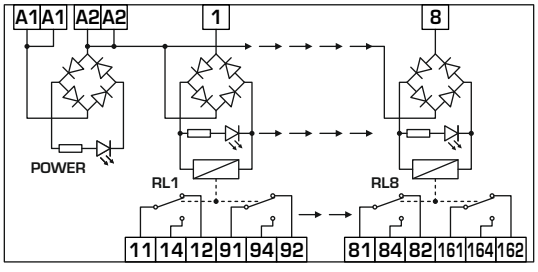
	UNIT	IRA08CHA	IRA08CHB	IRA08EHA	IRA08EHB	IRA08FAA	IRA08FAB
INPUT							
Supply voltage DC ±10%	V⎓	24		115		-	
Supply voltage AC ±10%	V~	24		115		230	
Nominal Frequency	Hz	50 - 60 (range: 47 - 63)					
Current absorbed for channel ±10%	mA	30		12		7	
Max. operate time (set)	ms	15					
Max. release time (reset)	ms	5		10			
Input Connection	-	Screw Terminal Block - 2.5mm² / Connector Flat PLC S7					
OUTPUT							
Number of Relay for interface	-	8					
Number of contact for channel	-	1	2	1	2	1	2
Rated voltage for contact	V~	250					
Rated current for contact	A	10	5	10	5	10	5
Breaking capacity	A	10	5	10	5	10	5
Min. permissible Load	mA/V	100/5					
Rated Load in AC	VA	2000	1250	2000	1250	2000	1250
Rated Load in DC	W	300	150	300	150	300	150
Output Connection	-	Screw Terminal Block - 2.5mm²					
GENERAL							
Working temperature	°C	-20 / +60					
Storage temperature	°C	-30 / +85					
Protection degree	IP	00					
Protection degree	-	2					
Display LED	-	Green (Power ON) / Yellow (Channel ON)					
Weight	g	390	440	390	440	390	440
Dimensions	mm	75 x 132 x 93					

WIRING DIAGRAM

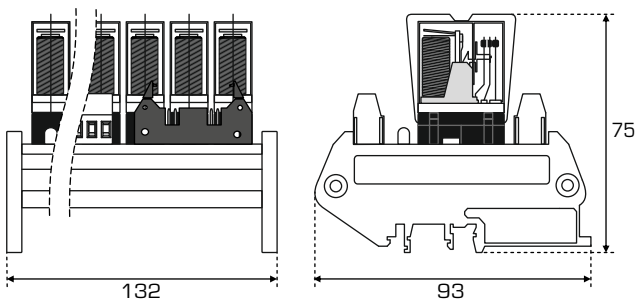
RELAY SPDT



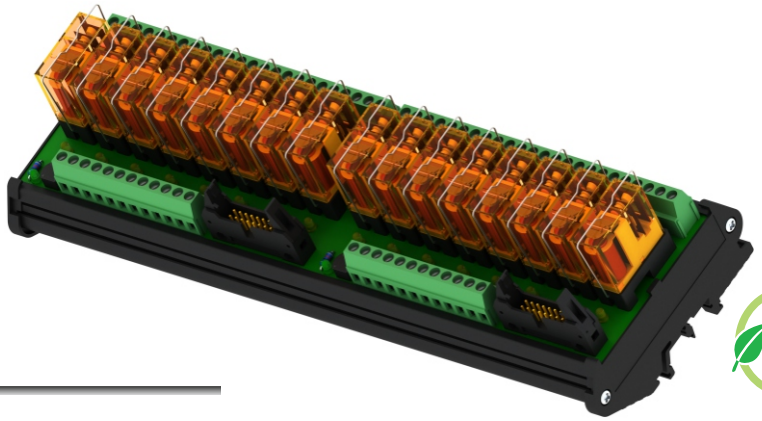
RELAY DPDT



DIMENSIONS (mm)



- 16 RELAY - DOUBLE CONTACT or DOUBLE CONTACT
- COMPACT INTERFACE
- SCREW CONNECTORS
- DIN RAIL MOUNTING EN50.022
- SELF-EXTINGUISHED MATERIAL UL94 V0



EU Directives - CE Marking:

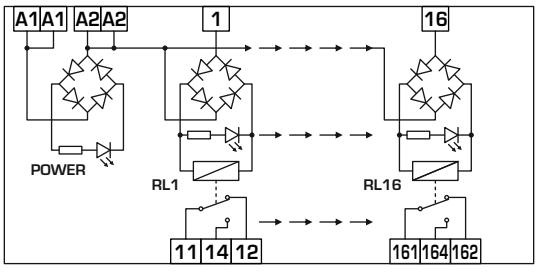
> 2014/30/UE - EMC
> 2014/35/UE - LVD

TECHNICAL DATA

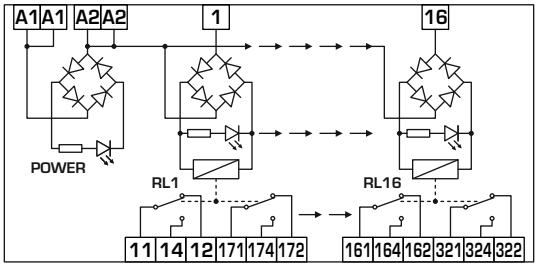
	UNIT	IRA16CHA	IRA16CHB	IRA16EHA	IRA16EHB	IRA16FAA	IRA16FAB
INPUT							
Supply voltage DC ±10%	V⎓	24		115		-	
Supply voltage AC ±10%	V~	24		115		230	
Nominal Frequency	Hz	50 - 60 (range: 47 - 63)					
Current absorbed for channel ±10%	mA	30		12		7	
Max. operate time (set)	ms	15					
Max. release time (reset)	ms	5		10			
Input Connection	-	Screw Terminal Block - 2.5mm² / Connector Flat PLC S7					
OUTPUT							
Number of Relay for interface	-	16					
Number of contact for channel	-	1	2	1	2	1	2
Rated voltage for contact	V~	250					
Rated current for contact	A	10	5	10	5	10	5
Breaking capacity	A	10	5	10	5	10	5
Min. permissible Load	mA/V	100/5					
Rated Load in AC	VA	2000	1250	2000	1250	2000	1250
Rated Load in DC	W	300	150	300	150	300	150
Output Connection	-	Screw Terminal Block - 2.5mm²					
GENERAL							
Working temperature	°C	-20 / +60					
Storage temperature	°C	-30 / +85					
Protection degree	IP	00					
Protection degree	-	2					
Display LED	-	Green (Power ON) / Yellow (Channel ON)					
Weight	g	750	850	750	850	750	850
Dimensions	mm	75 x 260 x 93					

WIRING DIAGRAM

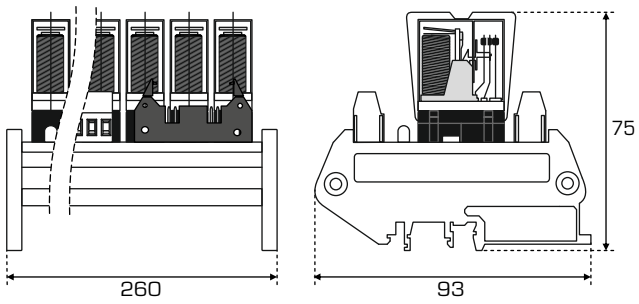
RELAY SPDT



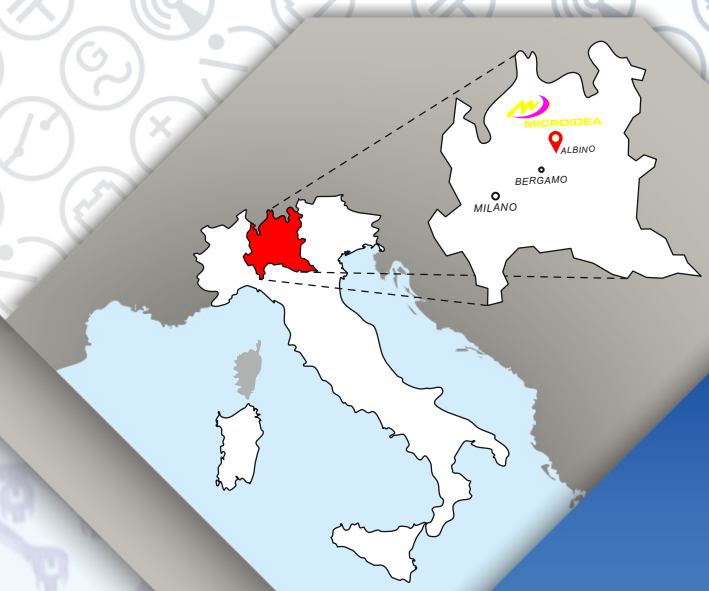
RELAY DPDT



DIMENSIONS (mm)



Remarks



Since 1975...

MICROIDEA S.r.l.
Via Serio, 39 - 24021 ALBINO (BG) Italy
Tel. +39.035.773 925 - Fax +39.035.773 933
e-mail: microidea@microidea.it - http://www.microidea.it

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