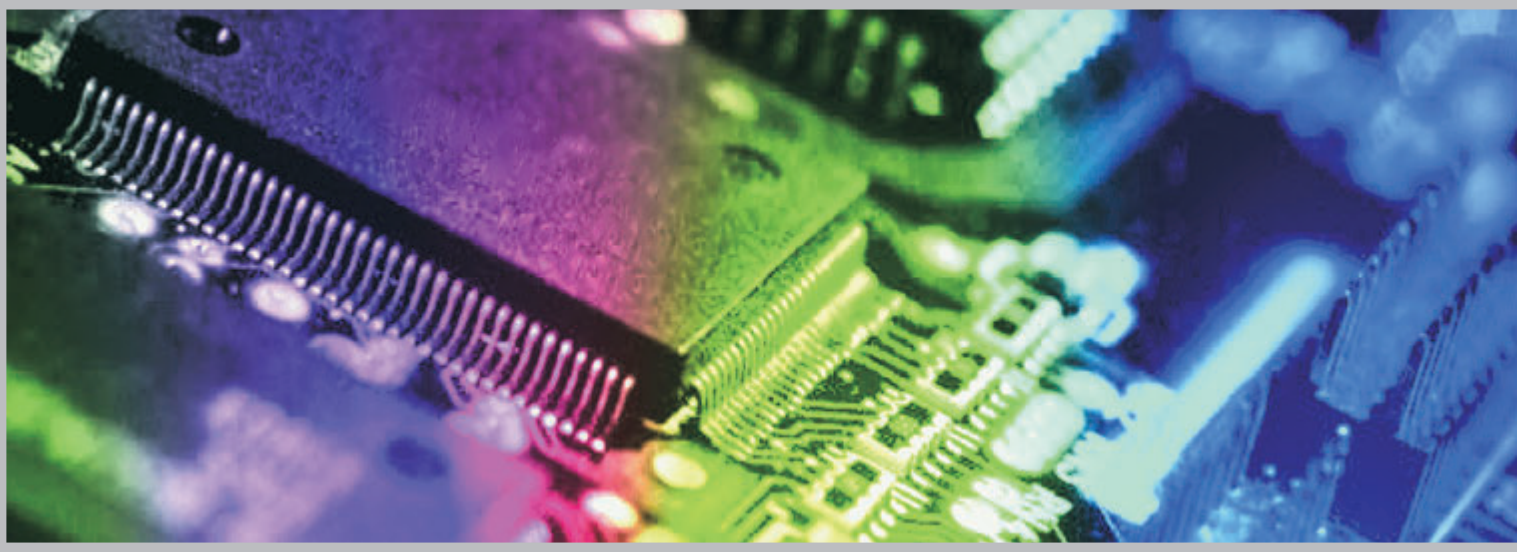
MICROIDEA

GENERAL CATALOG 2015

ELECTRONIC COMPANY

PRODUCTS OVERVIEW



- POWER FACTOR CONTROLLER
- TIMERS AND PROTECTION RELAYS
- POWER SUPPLY
- BATTERY CHARGERS
- GENSET CONTROLLERS
- DIGITAL INSTRUMENTS
- PASSIVE AND RELAY INTERFACES

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 — Digital 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

RoHS lead-free

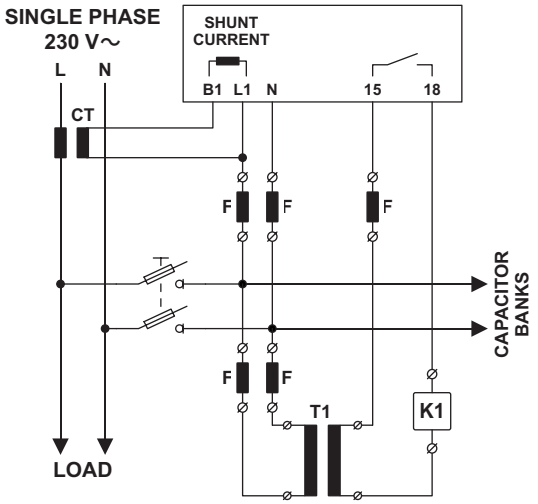
EC Directives - CE Marking:

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

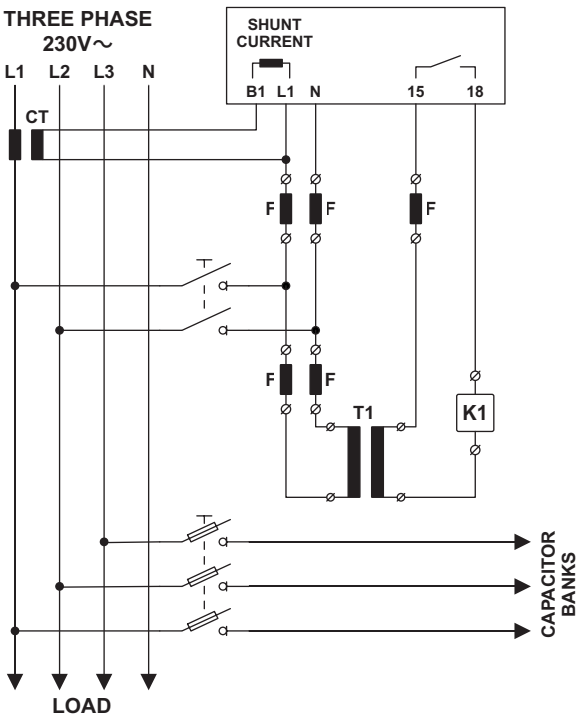
TECHNICAL DATA

	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 Adj.	-	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%	95
Altitude up to	m	2000
Weight	g	140
Dimensions	mm	90 x 36 x 64

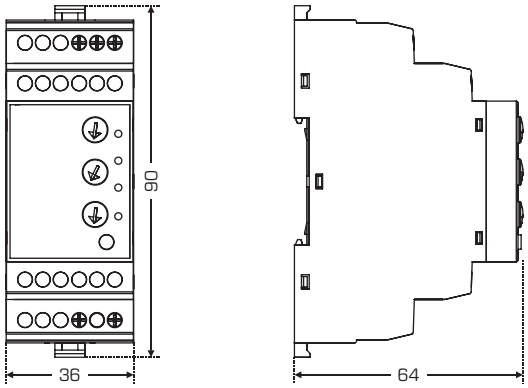
WIRING DIAGRAM - 1PH 230V~



WIRING DIAGRAM - 3PH 230V~



DIMENSIONS (mm)



DPFC 1PH 4-6 STEPS Digital 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
- ▶ FUNCTION & ALARM RELAY PROGRAMMABLE
- ▶ FAN RELAY PROGRAMMABLE
- ▶ RJ11 - TTL STANDARD - SERIAL INTERFACE:
  - OWNER / MODBUS RTU COMMUNUCATION PROTOCOL
- ▶ SELF-EXTINGUISHED MATERIAL UL94 V0

DIN RAIL VERSION AVAILABLE ON REQUEST

RoHS
lead-free

EC Directives - CE Marking:

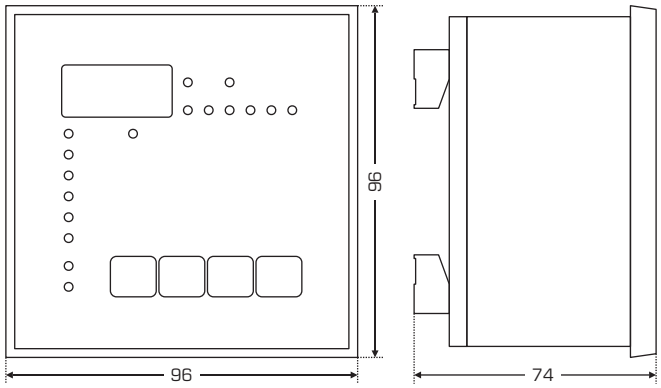
> 2006/95/EC - Low Voltage
> 2004/108/EC - EMC

TECHNICAL DATA

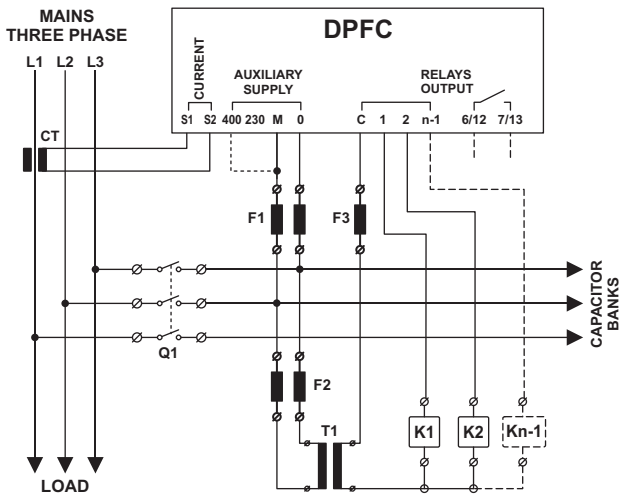
	UNIT	DPFC04A	DPFC06A
Supply voltage AC	V~	220 - 440	
Operating Limits (Ue)	%	-15 / +10	
Nominal Frequency	Hz	50 - 60 (range 47 - 63)	
Power Consumption (max. AC)	VA	5.8	
Immunity Time For Microbreakings	ms	< 6	
Display Type	-	1 Display - 3 Digit - 7 Segment	
Rated Current (CT)	A	5	
Voltage Reading Limits (L/Lx)	V~	180 - 485	
Current Reading Limits (CT)	A	0.125 - 5.5	
Measuring Values	-	True RMS	
Power Factor Adj.	-	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%	95	
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 Digital 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
- ▶ FUNCTION & ALARM RELAY PROGRAMMABLE
- ▶ FAN RELAY PROGRAMMABLE
- ▶ RJ11 - TTL STANDARD - SERIAL INTERFACE:
  - OWNER / MODBUS RTU COMMUNUCATION PROTOCOL
- ▶ SELF-EXTINGUISHED MATERIAL UL94 V0

RoHS
lead-free

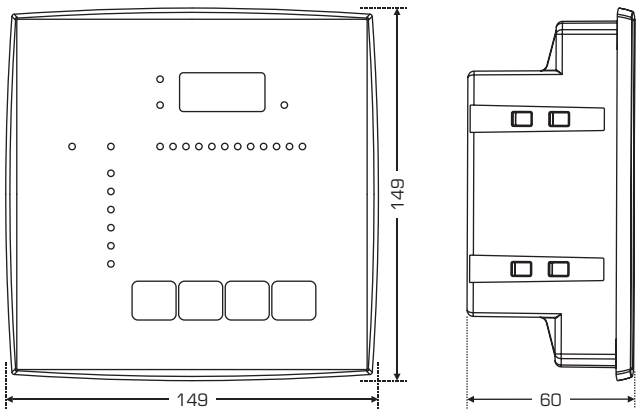
EC Directives - CE Marking:

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

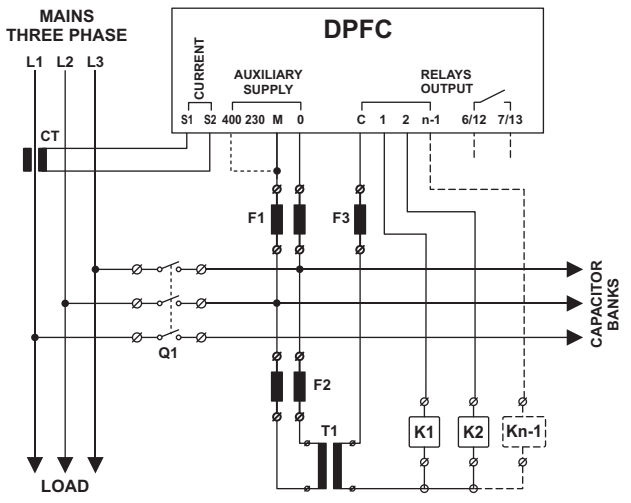
TECHNICAL DATA

	UNIT	DPFC04B	DPFC06B	DPFC08B	DPFC12B
Supply voltage AC	V~	220 - 440 (110V~ Version Available)			
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 Adj.	-	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%	95			
Altitude up to	m	2000			
Weight	g	520	540	650	700
Dimensions	mm	149 x 149 x 60			

DIMENSIONS (mm)



WIRING DIAGRAM



DPFC 3PH 6-12 STEPS Digital 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
- ▶ FUNCTION & ALARM RELAY PROGRAMMABLE
- ▶ FAN RELAY PROGRAMMABLE
- ▶ RJ11 - TTL STANDARD - SERIAL INTERFACE:
  - OWNER / MODBUS RTU COMMUNUCATION PROTOCOL
- ▶ SELF-EXTINGUISHED MATERIAL UL94 V0

RoHS
lead-free

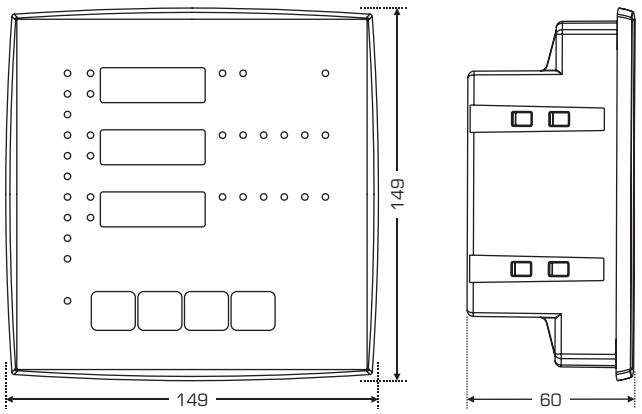
EC Directives - CE Marking:

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

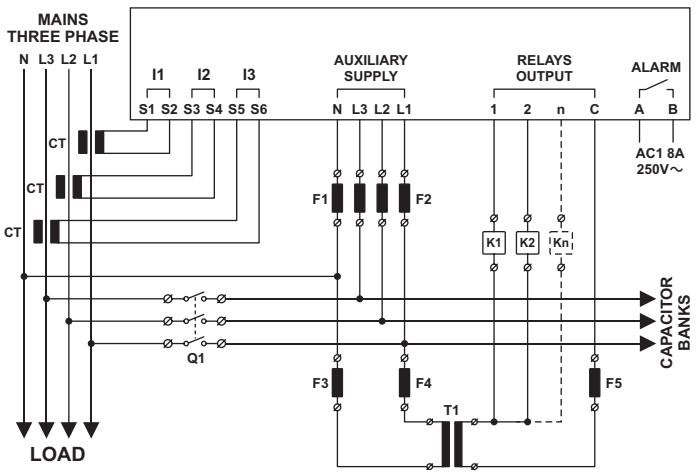
TECHNICAL DATA

	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	7.6	8.0
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 Adj.	-	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%	95	
Altitude up to	m	2000	
Weight	g	720	770
Dimensions	mm	149 x 149 x 60	

DIMENSIONS (mm)



WIRING DIAGRAM



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

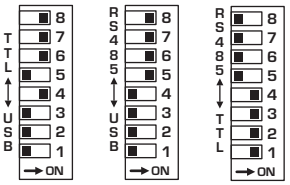
- USB AND RS-485 SERIAL INTERFACE WITH CABLES
- SURGE PROTECTION ON RS-485 LINE
- CONNECT REMOTE SERIAL DEVICE TO A PC
- ONE SERIAL SERVER CREATES ONE VIRTUAL COM-PORT ON A PC
- POWER AND DATA FLOW INDICATOR FOR TROUBLESHOOTING
- THE RS-485 STANDARD SUPPORTS HALF-DUPLEX (2 WIRE)
- REAL TIME TRANSFER ASCII PROTOCOL
- COMPACT SIZE - 2 MODULE - 35mm DIN RAIL MOUNTING EN50.022
- SELF-EXTINGUISHED MATERIAL UL94 V0

RoHS lead-free

Windows 8.1 Compatible

CE

DIP-SWITCH CONFIGURATION



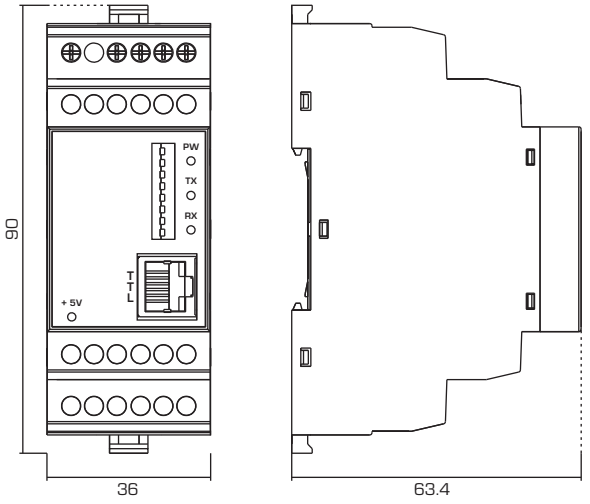
EC Directives - CE Marking:

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

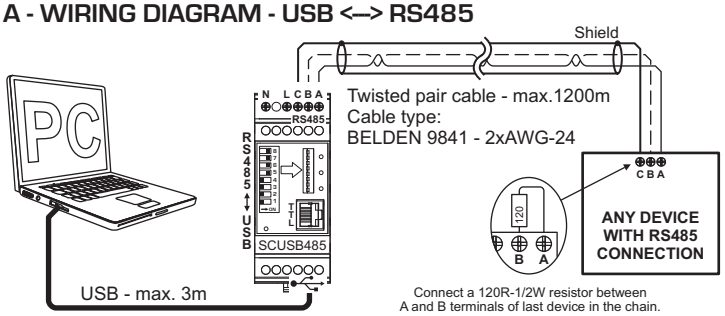
TECHNICAL DATA

	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	0.5
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)	V~	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	95
Dimensions	mm	90 x 36 x 63.4

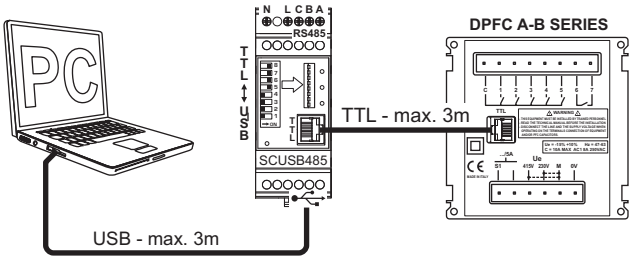
DIMENSIONS (mm)



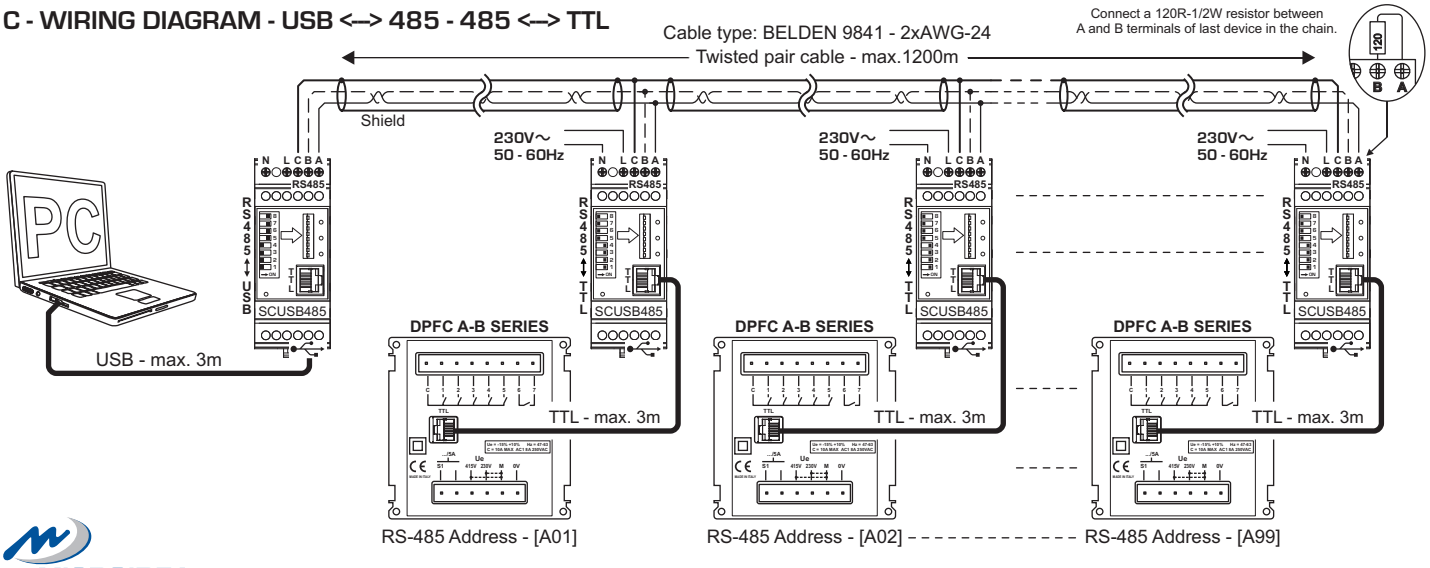
A - WIRING DIAGRAM - USB <--> RS485



B - WIRING DIAGRAM - USB <--> TTL

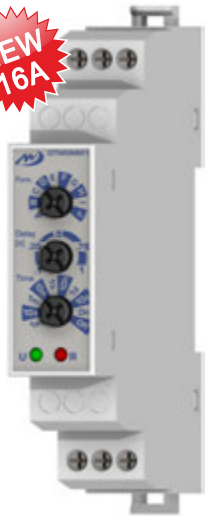


C - WIRING DIAGRAM - USB <--> 485 - 485 <--> TTL



DT DTMSMM1/-16 Multi-function Delay Timer

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



RoHS lead-free

■ TYPICAL APPLICATION: AUTOMATION CONTROL

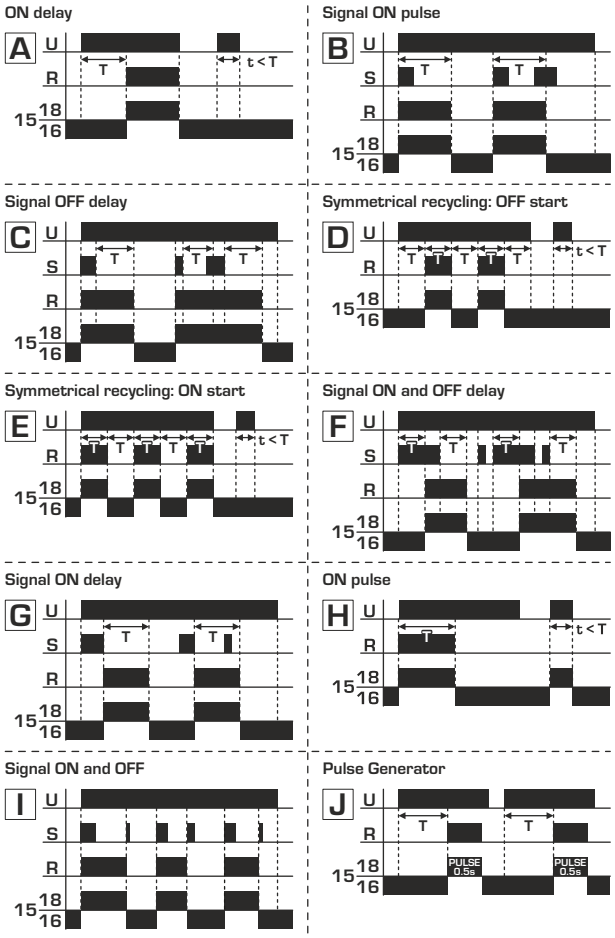
EC Directives - CE Marking:

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

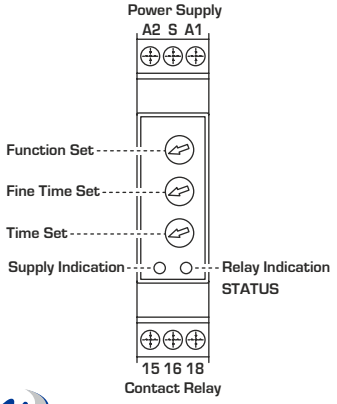
TECHNICAL DATA

INPUT	UNIT	DTMSMM1	DTMSMM1-16
Supply voltage DC ±10%	V⎓	24 - 75	
Supply voltage AC ±10%	V~	24 - 240	
Nominal Frequency	Hz	50 - 60 (range: 47 - 63)	
Power consumption (max. AC)	VA	12	
Supply indication	-	Green LED **U**	
Impulse length (min)	ms	25	
OUTPUT RELAY			
Rating	-	8A - 250V~/24V⎓	16A - 250V~/24V⎓
Max switching power	-	2000VA	4000VA
Max switching voltage	-	400V~	440V~
Min switching load	-	10mA 5V⎓	10mA 10V⎓
Contact life	Mech. Electr.	2×10^7 ops 1×10^5 ops	2×10^7 ops 3×10^4 ops
Changeover contacts	-	1 Au+AgCdO	
Output Indication	-	Red LED **R**	
GENERAL			
Time Range rotary switch	-	0.1s - 10dd	
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	
Relative Humidity w/o cond.	RH%	95	
Altitude up to	m	2000	
Weight	g	65	
Dimensions	mm	98 x 17.5 x 64	

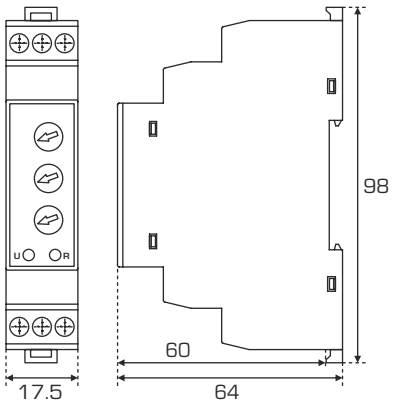
FUNCTIONS



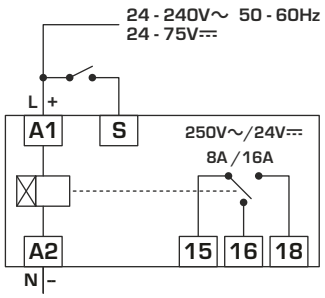
DESCRIPTION



DIMENSIONS (mm)

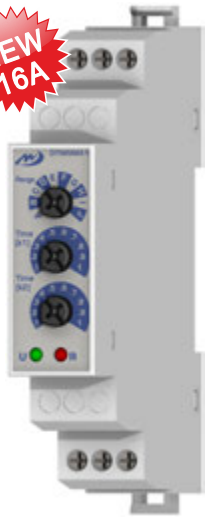


WIRING DIAGRAM



DT DTMSMA1/-16 Programmable Asymmetrical Timer

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



RoHS
lead-free

■ TYPICAL APPLICATION: AUTOMATION CONTROL

EC Directives - CE Marking:

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

TECHNICAL DATA

INPUT	UNIT	DTMSMA1	DTMSMA1-16
Supply voltage DC ±10%	V⎓	24 - 75	
Supply voltage AC ±10%	V~	24 - 240	
Nominal Frequency	Hz	50 - 60 (range: 47 - 63)	
Power consumption (max. AC)	VA	12	
Supply indication	-	Green LED **U**	
Power Reset	ms	200	
OUTPUT RELAY			
Rating	-	8A - 250V~/24V⎓	16A - 250V~/24V⎓
Max switching power	-	2000VA	4000VA
Max switching voltage	-	400V~	440V~
Min switching load	-	10mA 5V⎓	10mA 10V⎓
Contact life	Mech. Electr.	2 x 10^7 ops 1 x 10^5 ops	2 x 10^7 ops 3 x 10^4 ops
Changeover contacts	-	1 Au+AgCdO	
Output Indication	-	Red LED **R**	
GENERAL			
Time Range rotary switch	-	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	
Relative Humidity w/o cond.	RH%	95	
Altitude up to	m	2000	
Weight	g	65	
Dimensions	mm	98 x 17.5 x 64	

FUNCTIONS

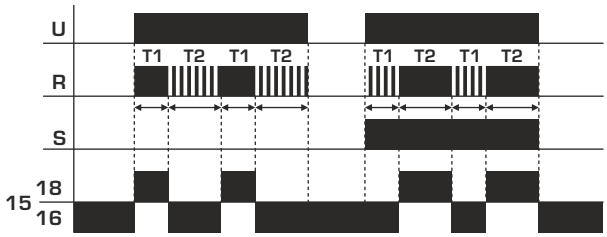
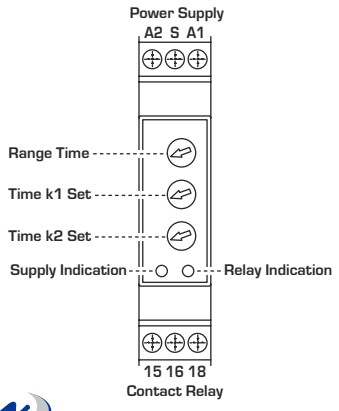


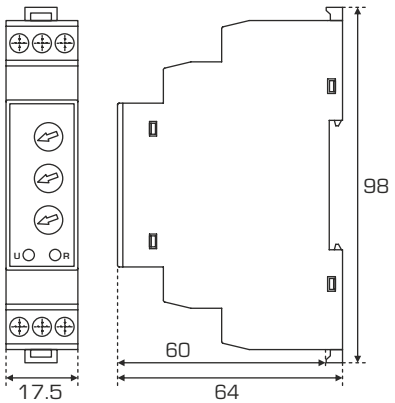
TABLE TIME RANGE SET

Range	T1 Max	T2 Max	Adj T1	Adj T2
A	2s	2s	k1 **x2s**	k2 **x2s**
B	10s	10s	k1 **x10s**	k2 **x10s**
C	60s	60s	k1 **x60s**	k2 **x60s**
D	10m	60s	k1 **x10m**	k2 **x60s**
E	60m	60s	k1 **x60m**	k2 **x60s**
F	10m	10m	k1 **x10m**	k2 **x10m**
G	60m	60m	k1 **x60m**	k2 **x60m**
H	10h	60m	k1 **x10h**	k2 **x60m**
I	10h	10h	k1 **x10h**	k2 **x10h**
J	20h	20h	k1 **x20h**	k2 **x20h**

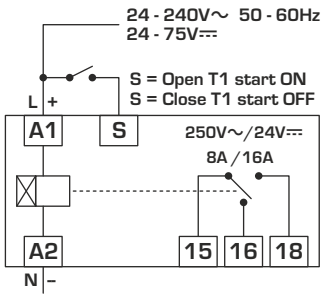
DESCRIPTION



DIMENSIONS (mm)



WIRING DIAGRAM



DT DTMSLD1 ON Delay Timer

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

RoHS lead-free

■ TYPICAL APPLICATION: AUTOMATION CONTROL

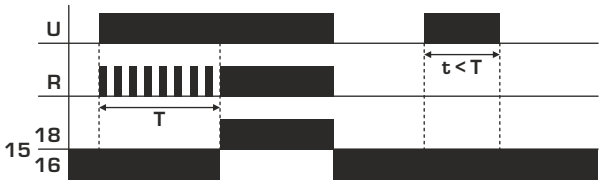
EC Directives - CE Marking:

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

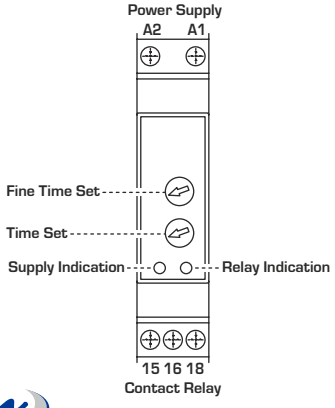
TECHNICAL DATA

INPUT	UNIT	DTMSLD1
Supply voltage DC ±10%	V⎓	24 - 75
Supply voltage AC ±10%	V~	24 - 240
Nominal Frequency	Hz	50 - 60 (range: 47 - 63)
Power consumption (max. AC)	VA	12
Supply indication	-	Green LED **U**
OUTPUT RELAY		
Rating	-	8A - 250V~/24V⎓
Max switching power	-	2000VA
Max switching voltage	-	400V~
Min switching load	-	10mA 5V⎓
Contact life	Mech. Electr.	2×10^7 ops 1×10^5 ops
Changeover contacts	-	1 Au+AgCdO
Output Indication	-	Red LED **R**
GENERAL		
Time Range rotary switch	-	0.1s - 10dd
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
Relative Humidity w/o cond.	RH%	95
Altitude up to	m	2000
Weight	g	45
Dimensions	mm	98 x 17.5 x 64

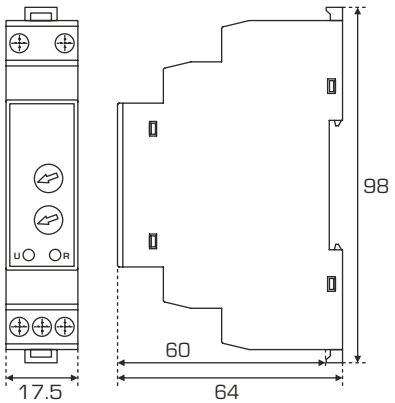
FUNCTIONS



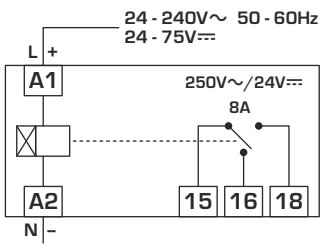
DESCRIPTION



DIMENSIONS (mm)



WIRING DIAGRAM



DT DTMSHD1 Fixed ON Delay Timer

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

RoHS lead-free

■ TYPICAL APPLICATION: COMPRESSOR

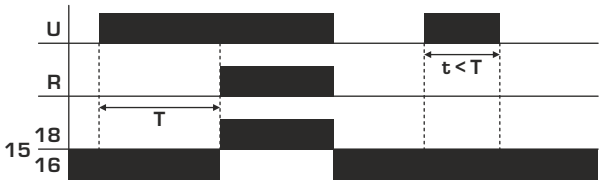
EC Directives - CE Marking:

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

TECHNICAL DATA

INPUT	UNIT	DTMSHD1
Supply voltage DC ±10%	V⎓	24 - 75
Supply voltage AC ±10%	V~	24 - 240
Nominal Frequency	Hz	50 - 60 (range: 47 - 63)
Power consumption (max. AC)	VA	12
Supply indication	-	Green LED **U**
OUTPUT RELAY		
Rating	-	8A - 250V~/24V⎓
Max switching power	-	2000VA
Max switching voltage	-	400V~
Min switching load	-	10mA 5V⎓
Contact life	Mech. Electr.	2×10^7 ops 1×10^5 ops
Changeover contacts	-	1 Au+AgCdO
Output Indication	-	Red LED **R**
GENERAL		
Fixed Time	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
Relative Humidity w/o cond.	RH%	95
Altitude up to	m	2000
Weight	g	45
Dimensions	mm	98 x 17.5 x 64

FUNCTIONS



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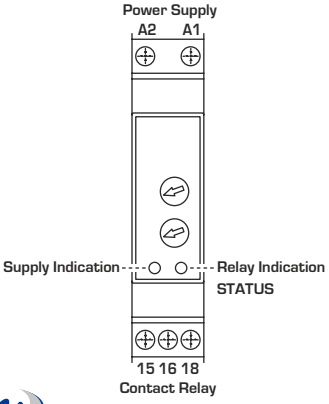
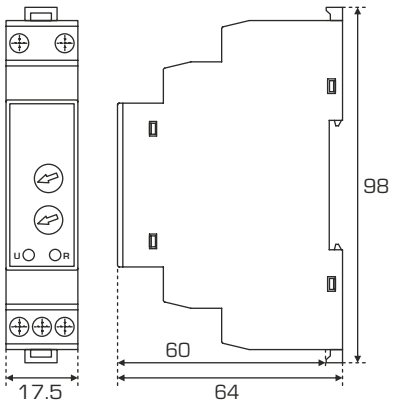
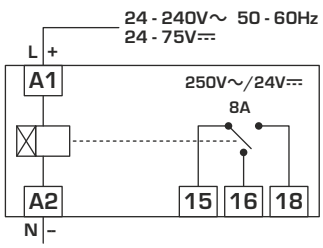


DIMENSIONS (mm)



WIRING DIAGRAM



DT DTMSOD1 Fixed OFF Delay Timer

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

RoHS lead-free

■ TYPICAL APPLICATION: COMPRESSOR

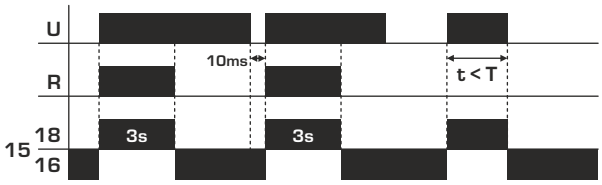
EC Directives - CE Marking:

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

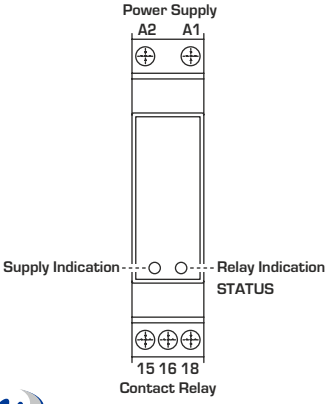
TECHNICAL DATA

INPUT	UNIT	DTMSOD1
Supply voltage DC ±10%	V⎓	24 - 75
Supply voltage AC ±10%	V~	24 - 240
Nominal Frequency	Hz	50 - 60 (range: 47 - 63)
Power consumption (max. AC)	VA	12
Supply indication	-	Green LED **U**
OUTPUT RELAY		
Rating	-	8A - 250V~/24V⎓
Max switching power	-	2000VA
Max switching voltage	-	400V~
Min switching load	-	10mA 5V⎓
Contact life	Mech. Electr.	2×10^7 ops 1×10^5 ops
Changeover contacts	-	1 Au+AgCdO
Output Indication	-	Red LED **R**
GENERAL		
Fixed Time	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
Relative Humidity w/o cond.	RH%	95
Altitude up to	m	2000
Weight	g	45
Dimensions	mm	98 x 17.5 x 64

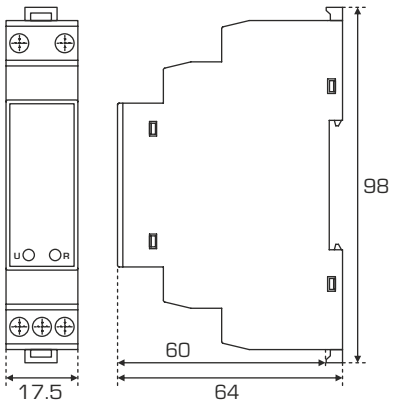
FUNCTIONS



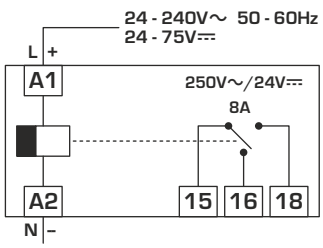
DESCRIPTION



DIMENSIONS (mm)



WIRING DIAGRAM



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

RoHS lead-free

■ TYPICAL APPLICATION: MOTOR STARTING

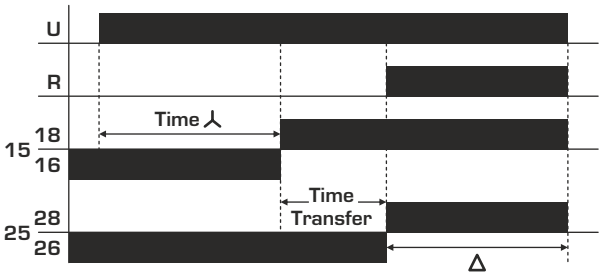
EC Directives - CE Marking:

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

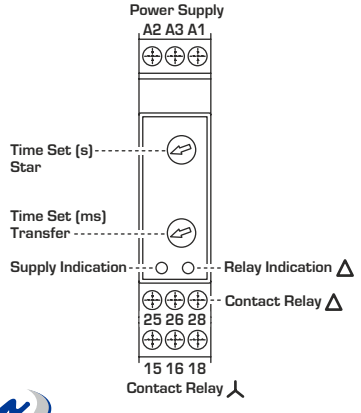
TECHNICAL DATA

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	-	Green LED **U**		
OUTPUT RELAY				
Rating	-	8A - 250V~/24V⎓		8A - 250V~
Max switching power	-	2000VA		
Max switching voltage	-	400V~		
Min switching load	-	10mA 5V⎓		
Contact life	Mech. Electr.	2 x 10^7 ops 1 x 10^5 ops		
Changeover contacts	-	1 Au+AgCdO		
Output Indication	-	Red LED **R**		
GENERAL				
Time Delay (START)	s	1 - 60		
Time Delay (TRANSITION)	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		
Relative Humidity w/o cond.	RH%	95		
Altitude up to	m	2000		
Weight	g	45		
Dimensions	mm	98 x 17.5 x 64		

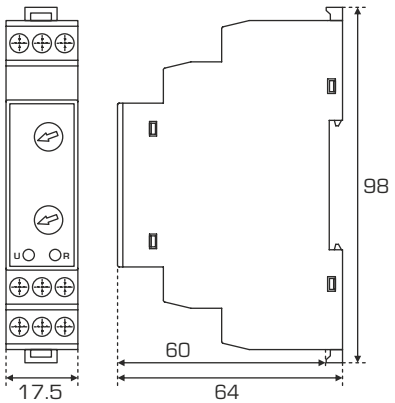
FUNCTIONS



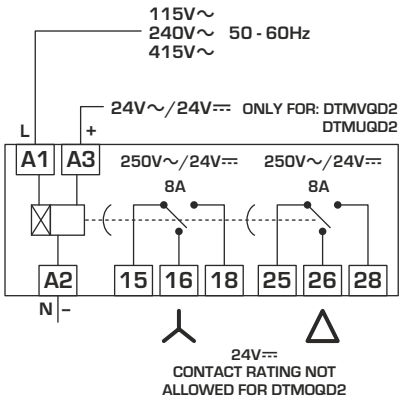
DESCRIPTION



DIMENSIONS (mm)



WIRING DIAGRAM



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

RoHS lead-free

■ TYPICAL APPLICATION: MOTOR STARTING

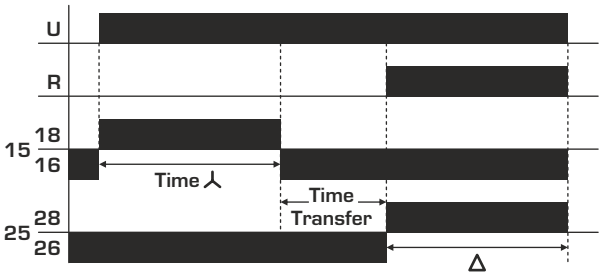
EC Directives - CE Marking:

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

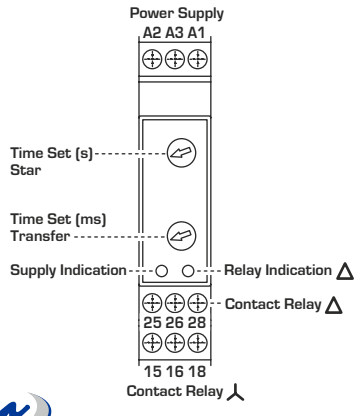
TECHNICAL DATA

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	-	Green LED **U**		
OUTPUT RELAY				
Rating	-	8A - 250V~/24V⎓		8A - 250V~
Max switching power	-	2000VA		
Max switching voltage	-	400V~		
Min switching load	-	10mA 5V⎓		
Contact life	Mech. Electr.	2 x 10^7 ops 1 x 10^5 ops		
Changeover contacts	-	1 Au+AgCdO		
Output Indication	-	Red LED **R**		
GENERAL				
Time Delay (START)	s	1 - 60		
Time Delay (TRANSITION)	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		
Relative Humidity w/o cond.	RH%	95		
Altitude up to	m	2000		
Weight	g	45		
Dimensions	mm	98 x 17.5 x 64		

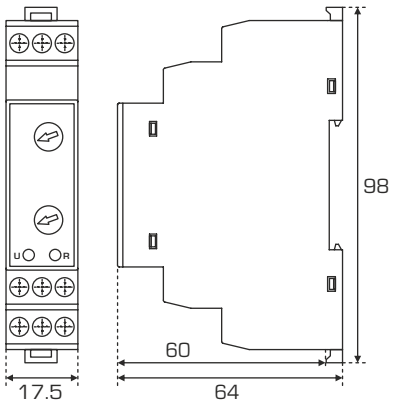
FUNCTIONS



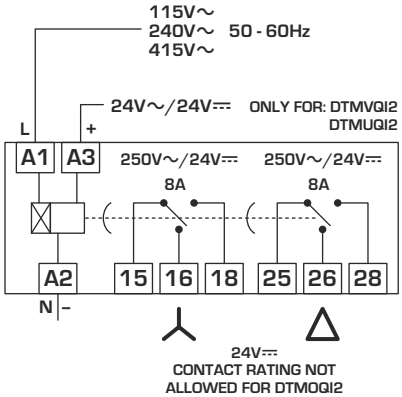
DESCRIPTION



DIMENSIONS (mm)



WIRING DIAGRAM



CL CLMSBD1 - 5/16 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

RoHS lead-free

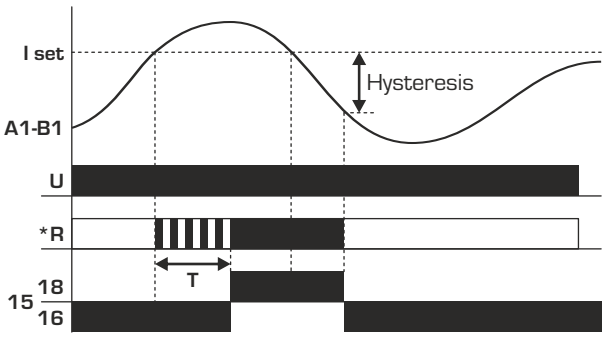
EC Directives - CE Marking:

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

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	-	Green LED **U**	
OUTPUT RELAY			
Rating	-	8A - 250V~/24V⎓	
Max switching power	-	2000VA	
Max switching voltage	-	400V~	
Min switching load	-	10mA 5V⎓	
Contact life	Mech. Electr.	2×10^7 ops 1×10^5 ops	
Changeover contacts	-	1 Au+AgCdO	
Output Indication	-	Green/Red LED **R**	
GENERAL			
Time Delay	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	
Relative Humidity w/o cond.	RH%	95	
Altitude up to	m	2000	
Weight	g	65	
Dimensions	mm	98 x 17.5 x 64	

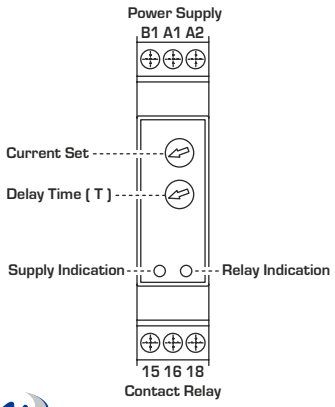
FUNCTIONS



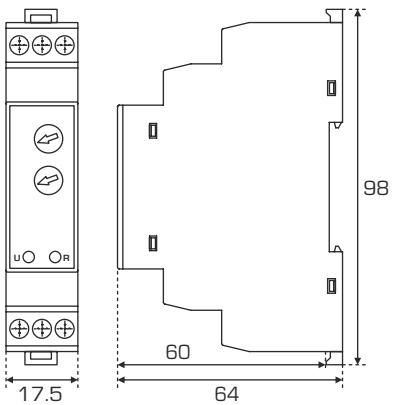
* The **R** Led is Bicolor:
If **I** input is < **I** set. the Led is Green and Relay is OFF
If **I** input is > **I** set. the Led is Red and Relay is ON

■ = RED
□ = GREEN

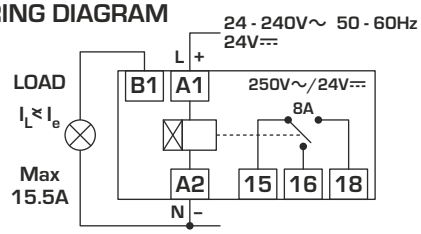
DESCRIPTION

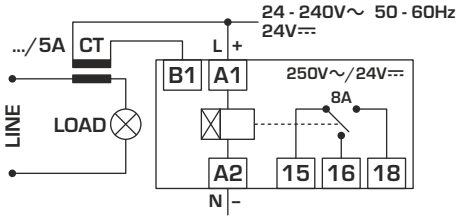


DIMENSIONS (mm)



WIRING DIAGRAM





CL CLMSBD1-LH - 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

RoHS lead-free

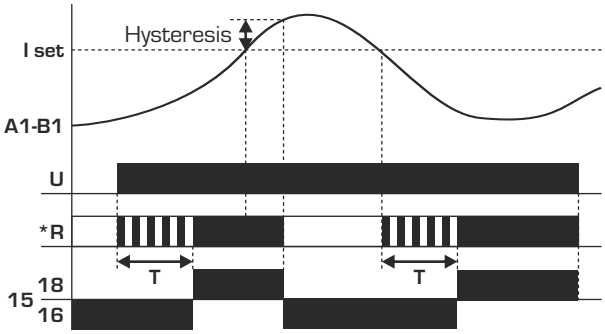
EC Directives - CE Marking:

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

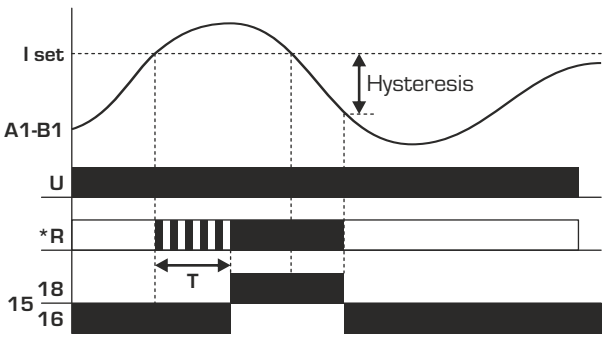
TECHNICAL DATA

	UNIT	CLMSBD1-LH-5	CLMSBD1-LH-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	-	Green LED **U**	
OUTPUT RELAY			
Rating	-	8A - 250V~/24V⎓	
Max switching power	-	2000VA	
Max switching voltage	-	400V~	
Min switching load	-	10mA 5V⎓	
Contact life	Mech. Electr.	2×10^7 ops 1×10^5 ops	
Changeover contacts	-	1 Au+AgCdO	
Output Indication	-	Green/Red LED **R**	
GENERAL			
Time Delay	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	
Relative Humidity w/o cond.	RH%	95	
Altitude up to	m	2000	
Weight	g	65	
Dimensions	mm	98 x 17.5 x 64	

L - FUNCTION



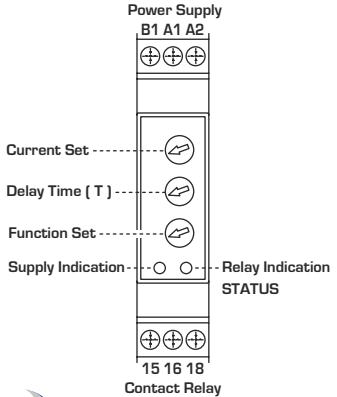
H - FUNCTION



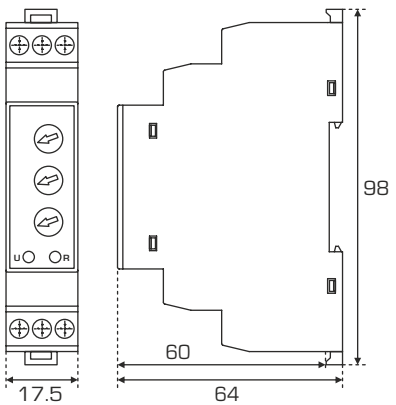
* The **R** Led is Bicolor:
If **I** input is < **I** set. the Led is Green and Relay is OFF
If **I** input is > **I** set. the Led is Red and Relay is ON

■ = RED
□ = GREEN

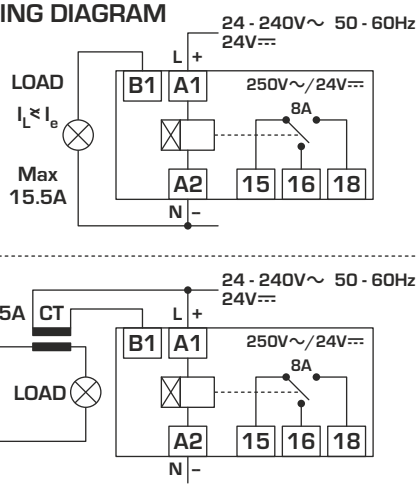
DESCRIPTION



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

RoHS lead-free

■ TYPICAL APPLICATION: BATTERY MONITORING VOLTAGE

EC Directives - CE Marking:

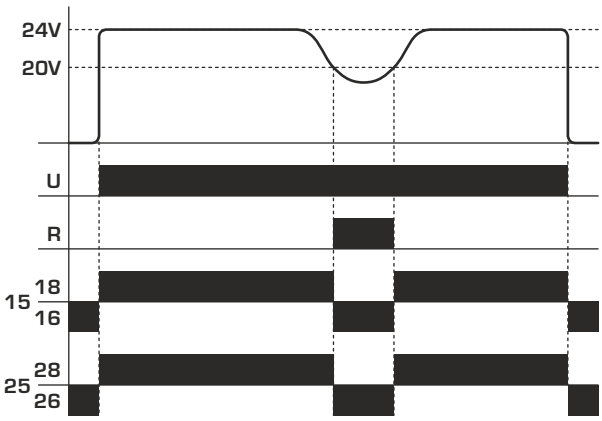
> 2006/95/EC - Low Voltage
> 2004/108/EC - EMC

CE

TECHNICAL DATA

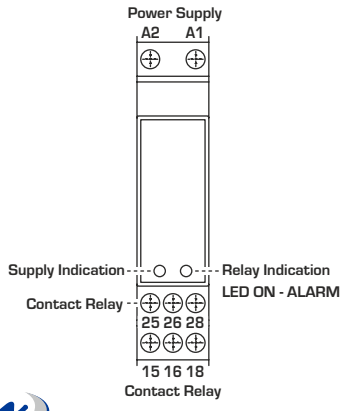
	UNIT	VLMCII2
INPUT		
Supply voltage DC ±10%	V⎓	24
Power consumption (max. DC)	W	0.3
Supply indication	-	Green LED **U**
OUTPUT RELAY		
Rating	-	8A - 250V~/24V⎓
Max switching power	-	2000VA
Max switching voltage	-	400V~
Min switching load	-	10mA 5V⎓
Contact life	Mech. Electr.	2 x 10^7 ops 1 x 10^5 ops
Changeover contacts	-	1 Au+AgCdO
Output Indication	-	Red LED **R**
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
Relative Humidity w/o cond.	RH%	95
Altitude up to	m	2000
Weight	g	65
Dimensions	mm	98 x 17.5 x 64

FUNCTIONS

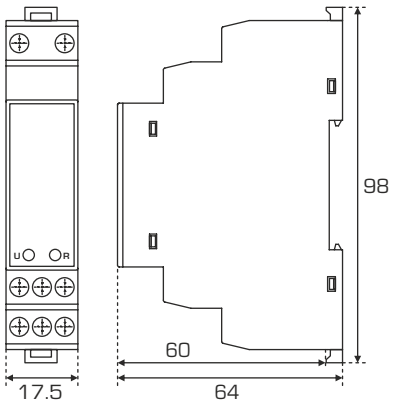


When Line is OK the R led is OFF and Relay is ON
When Line is wrong the R led is ON and Relay is OFF

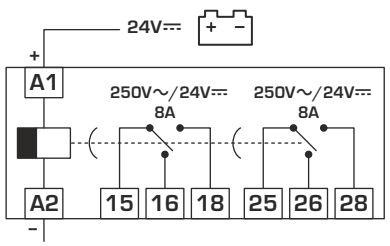
DESCRIPTION



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

RoHS lead-free

■ TYPICAL APPLICATION: MONITORING VOLTAGE

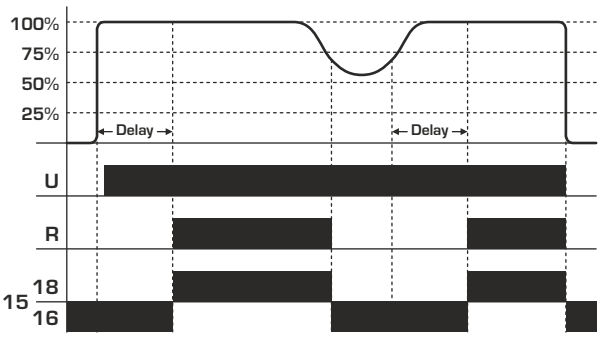
EC Directives - CE Marking:

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

TECHNICAL DATA

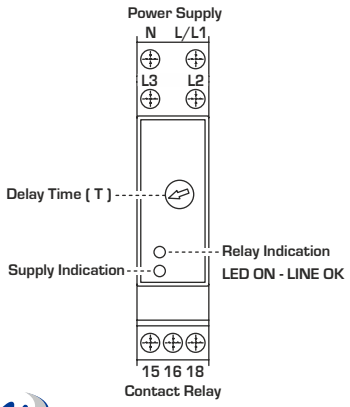
	UNIT	VLMFND1	VLTGND1
INPUT			
Supply voltage AC ±10%	V~	230	3 x 400+N
Power consumption (max. AC)	VA	7	14
Nominal Frequency	Hz	50 - 60 (range: 47 - 63)	
Supply indication	-	Green LED **U**	
OUTPUT RELAY			
Rating	-	8A - 250V~/24V⎓	
Max switching power	-	2000VA	
Max switching voltage	-	400V~	
Min switching load	-	10mA 5V⎓	
Contact life	Mech. Electr.	2 x 10^7 ops 1 x 10^5 ops	
Changeover contacts	-	1 Au+AgCdO	
Output Indication	-	Red LED **R**	
GENERAL			
Time Range ±10%	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	
Relative Humidity w/o cond.	RH%	95	
Altitude up to	m	2000	
Weight	g	55	
Dimensions	mm	98 x 17.5 x 64	

FUNCTIONS

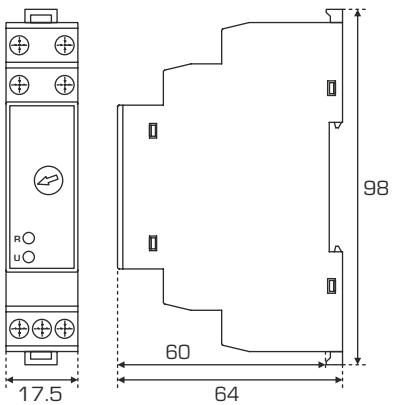


When Line is OK the R led and Relay are ON

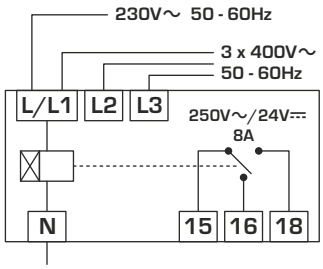
DESCRIPTION



DIMENSIONS (mm)



WIRING DIAGRAM



FS FSTKII1S/FSTWII1S 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

RoHS lead-free

■ TYPICAL APPLICATION: PHASE SEQUENCE/ROTATION CONTROL

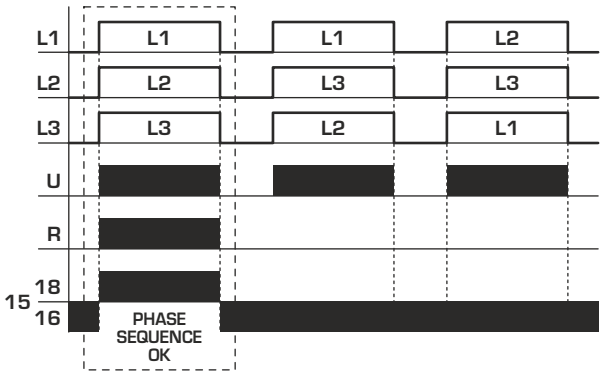
EC Directives - CE Marking:

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

TECHNICAL DATA

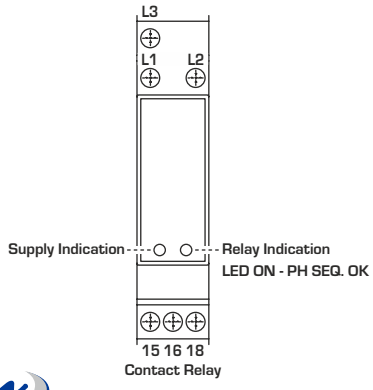
	UNIT	FSTKII1S	FSTWII1S
INPUT			
Supply voltage AC ±10%	V~	3 x 200 - 450	3 x 510 - 690
Nominal Frequency	Hz	50 - 60 (range: 47 - 63)	
Power consumption (max. AC)	VA	20	30
Supply indication	-	Green LED **U**	
OUTPUT RELAY			
Rating	-	8A - 250V~/24V⎓	
Max switching power	-	2000VA	
Max switching voltage	-	400V~	
Min switching load	-	10mA 5V⎓	
Contact life	Mech. Electr.	2 x 10^7 ops 1 x 10^5 ops	
Changeover contacts	-	1 Au+AgCdO	
Output Indication	-	Red LED **R**	
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	
Relative Humidity w/o cond.	RH%	95	
Altitude up to	m	2000	
Weight	g	60	
Dimensions	mm	98 x 17.5 x 64	

FUNCTIONS

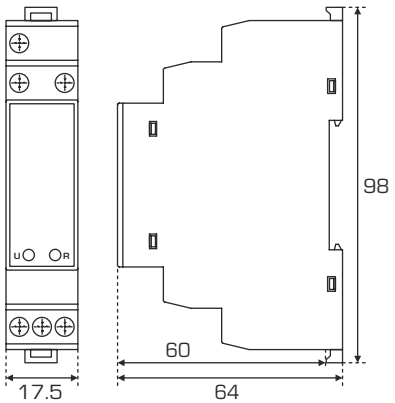


When Phase Sequence is OK the R led and Relay are ON

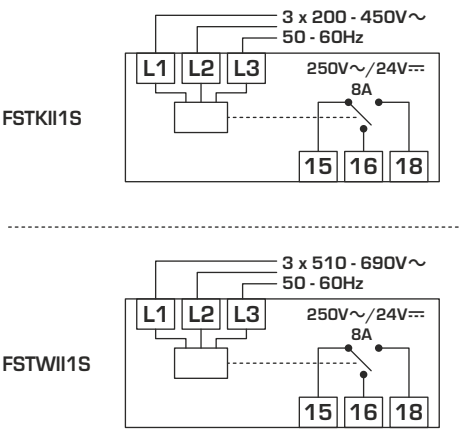
DESCRIPTION



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

RoHS lead-free

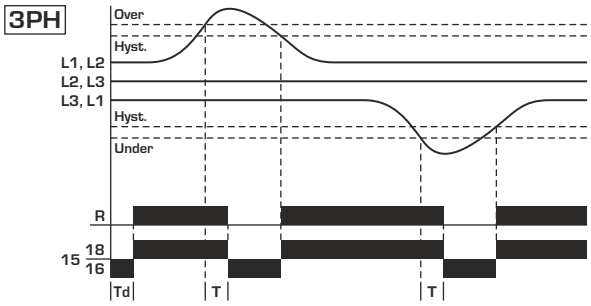
■ TYPICAL APPLICATION: SUPPLY VOLTAGE MONITORING

EC Directives - CE Marking:
> 2006/95/EC - Low Voltage
> 2004/108/EC - EMC

TECHNICAL DATA

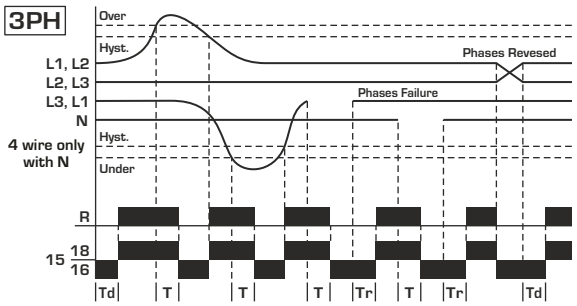
INPUT	UNIT	MVTFBD1	MVTFBD1S	MVTFBD1N
Supply voltage AC ±10%	V~	3 x 230	3 x 230	3 x 230+N
Nominal Frequency	Hz	50 - 60 (range: 47 - 63)		
Trip Levels	Under Over	75 - 95% of **U** 105 - 125% of **U**		
Power consumption (max. AC)	VA	13		
Supply indication	-	Green LED **U**		
OUTPUT RELAY				
Rating	-	8A - 250V~/24V⎓		
Max switching power	-	2000VA		
Max switching voltage	-	400V~		
Min switching load	-	10mA 5V⎓		
Contact life	Mech. Electr.	2 x 10^7 ops 1 x 10^5 ops		
Changeover contacts	-	1 Au+AgCdO		
Output Indication	-	Red LED **R**		
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		
Relative Humidity w/o cond.	RH%	95		
Altitude up to	m	2000		
Weight	g	65		
Dimensions	mm	98 x 17.5 x 64		

FUNCTIONS - MVTFBD1



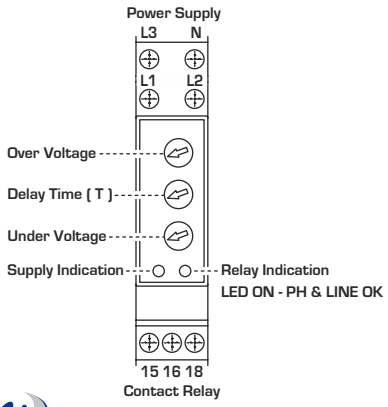
Without Phase Sequence
When Line is OK the R led and Relay are ON

FUNCTIONS - MVTFBD1S/N

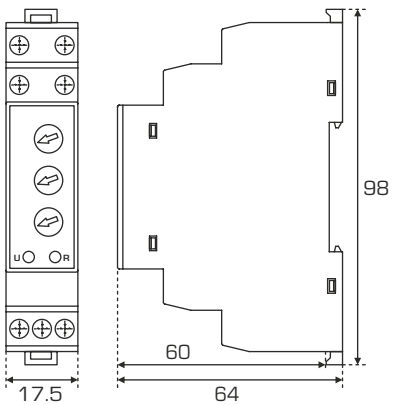


When Line and Phases are OK the R led and Relay are ON

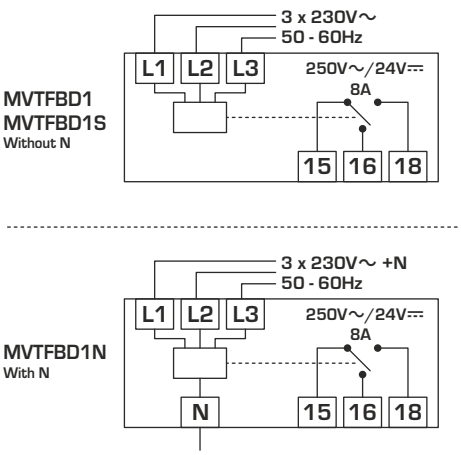
DESCRIPTION



DIMENSIONS (mm)

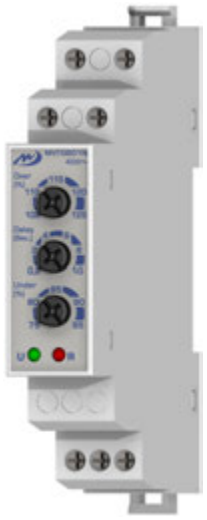


WIRING DIAGRAM



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



RoHS lead-free

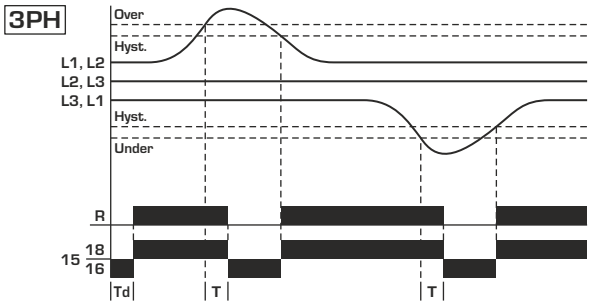
■ TYPICAL APPLICATION: SUPPLY VOLTAGE MONITORING

EC Directives - CE Marking:
> 2006/95/EC - Low Voltage
> 2004/108/EC - EMC

TECHNICAL DATA

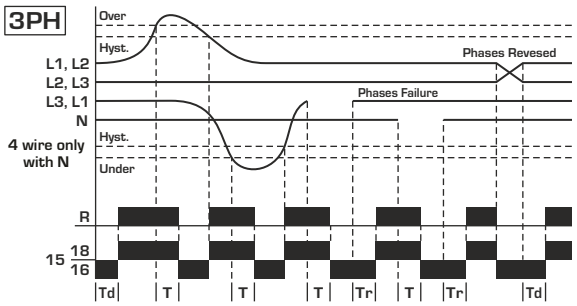
INPUT	UNIT	MVTGBD1	MVTGBD1S	MVTGBD1N
Supply voltage AC ±10%	V~	3 x 400	3 x 400	3 x 400+N
Nominal Frequency	Hz	50 - 60 (range: 47 - 63)		
Trip Levels	Under Over	75 - 95% of **U** 105 - 125% of **U**		
Power consumption (max. AC)	VA	16		
Supply indication	-	Green LED **U**		
OUTPUT RELAY				
Rating	-	8A - 250V~/24V⎓		
Max switching power	-	2000VA		
Max switching voltage	-	400V~		
Min switching load	-	10mA 5V⎓		
Contact life	Mech. Electr.	2 x 10^7 ops 1 x 10^5 ops		
Changeover contacts	-	1 Au+AgCdO		
Output Indication	-	Red LED **R**		
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		
Relative Humidity w/o cond.	RH%	95		
Altitude up to	m	2000		
Weight	g	65		
Dimensions	mm	98 x 17.5 x 64		

FUNCTIONS - MVTGBD1



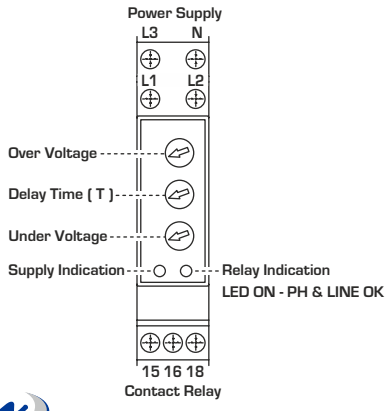
Without Phase Sequence
When Line is OK the R led and Relay are ON

FUNCTIONS - MVTGBD1S/N

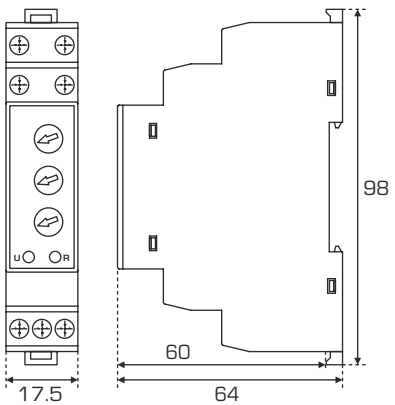


When Line and Phases are OK the R led and Relay are ON

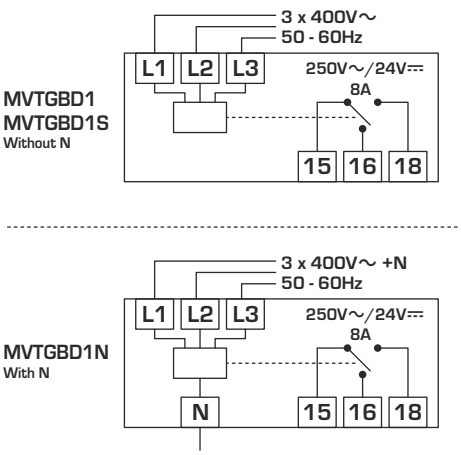
DESCRIPTION



DIMENSIONS (mm)



WIRING DIAGRAM



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
lead-free

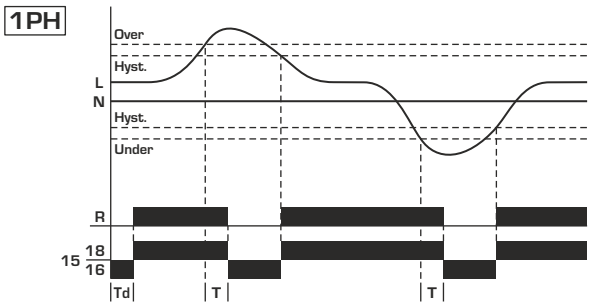
EC Directives - CE Marking:

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

TECHNICAL DATA

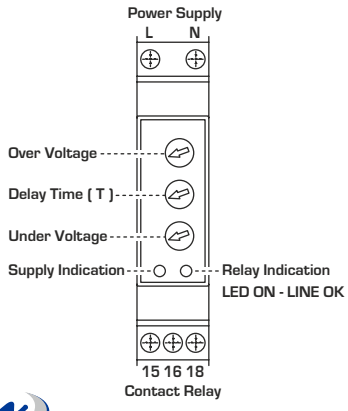
INPUT	UNIT	MVMFBD1	MVMFBD1-16
Supply voltage AC ±10%	V~	230	
Nominal Frequency	Hz	50 - 60 (range: 47 - 63)	
Trip Levels	Under Over	75 - 95% of **U** 105 - 125% of **U**	
Power consumption (max. AC)	VA	13	
Supply indication	-	Green LED **U**	
OUTPUT RELAY			
Rating	-	8A - 250V~/24V⎓	16A - 250V~/24V⎓
Max switching power	-	2000VA	4000VA
Max switching voltage	-	400V~	440V~
Min switching load	-	10mA 5V⎓	10mA 10V⎓
Contact life	Mech. Electr.	2 x 10^7 ops 1 x 10^5 ops	2 x 10^7 ops 3 x 10^4 ops
Changeover contacts	-	1 Au+AgCdO	
Output Indication	-	Red LED **R**	
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	
Relative Humidity w/o cond.	RH%	95	
Altitude up to	m	2000	
Weight	g	65	
Dimensions	mm	98 x 17.5 x 64	

FUNCTIONS

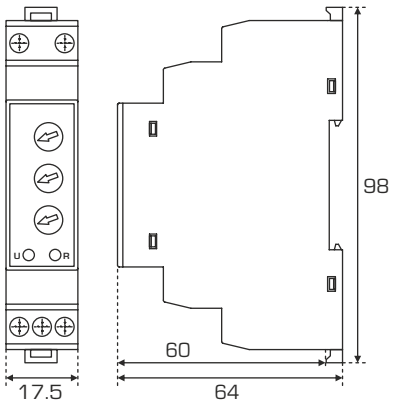


When Line is OK The R led and Relay are ON

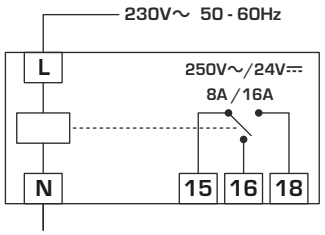
DESCRIPTION



DIMENSIONS (mm)



WIRING DIAGRAM



MV MVMFBD1L/MVTGBD1L Under Voltage Relay

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

RoHS lead-free

■ TYPICAL APPLICATION: GENSET SYSTEMS

EC Directives - CE Marking:

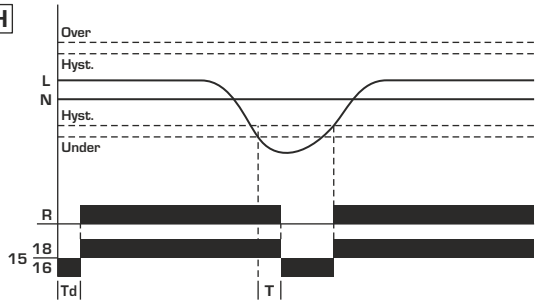
> 2006/95/EC - Low Voltage
> 2004/108/EC - EMC

TECHNICAL DATA

	UNIT	MVMFBD1L	MVTGBD1L
INPUT			
Supply voltage AC ±10%	V~	230	3 x 400
Nominal Frequency	Hz	50 - 60 (range: 47 - 63)	
Trip Levels	Under	75 - 95% of **U**	
Power consumption (max. AC)	VA	13	16
Supply indication	-	Green LED **U**	
OUTPUT RELAY			
Rating	-	8A - 250V~/24V⎓	
Max switching power	-	2000VA	
Max switching voltage	-	400V~	
Min switching load	-	10mA 5V⎓	
Contact life	Mech. Electr.	2 x 10^7 ops 1 x 10^5 ops	
Changeover contacts	-	1 Au+AgCdO	
Output Indication	-	Red LED **R**	
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	
Relative Humidity w/o cond.	RH%	95	
Altitude up to	m	2000	
Weight	g	55	
Dimensions	mm	98 x 17.5 x 64	

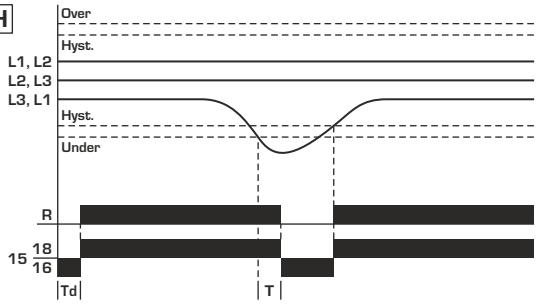
FUNCTIONS

1PH



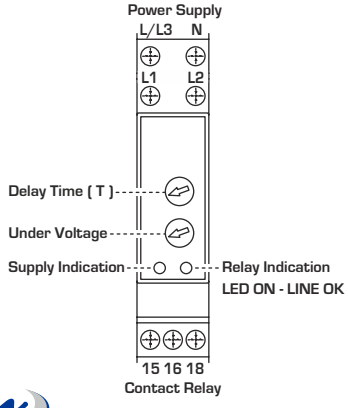
When Line is OK The R led and Relay are ON

3PH

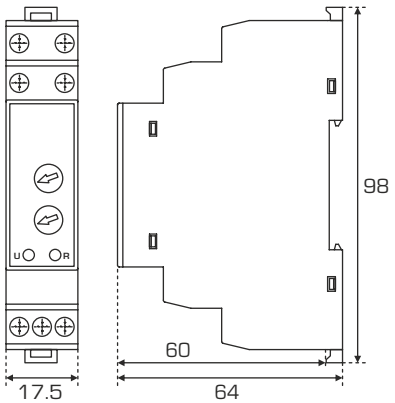


When Line is OK The R led and Relay are ON

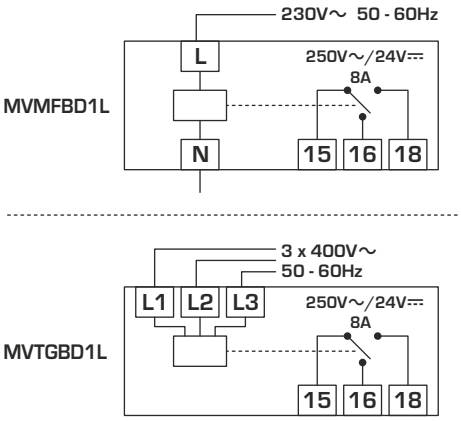
DESCRIPTION



DIMENSIONS (mm)



WIRING DIAGRAM



MV MVMFBD1H/MVTGBD1H Over Voltage Relay

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

RoHS lead-free

■ TYPICAL APPLICATION: SUPPLY VOLTAGE MONITORING

EC Directives - CE Marking:

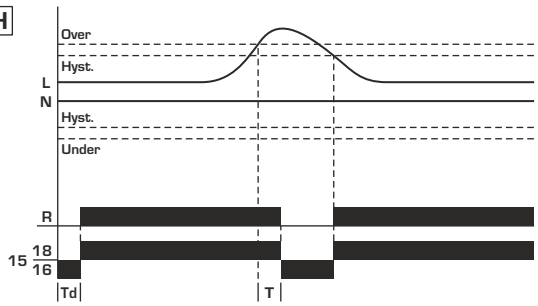
> 2006/95/EC - Low Voltage
> 2004/108/EC - EMC

TECHNICAL DATA

	UNIT	MVMFBD1H	MVTGBD1H
INPUT			
Supply voltage AC ±10%	V~	230	3 x 400
Nominal Frequency	Hz	50 - 60 (range: 47 - 63)	
Trip Levels	Under	105 - 125% of **U**	
Power consumption (max. AC)	VA	13	16
Supply indication	-	Green LED **U**	
OUTPUT RELAY			
Rating	-	8A - 250V~/24V⎓	
Max switching power	-	2000VA	
Max switching voltage	-	400V~	
Min switching load	-	10mA 5V⎓	
Contact life	Mech. Electr.	2 x 10^7 ops 1 x 10^5 ops	
Changeover contacts	-	1 Au+AgCdO	
Output Indication	-	Red LED **R**	
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	
Relative Humidity w/o cond.	RH%	95	
Altitude up to	m	2000	
Weight	g	55	
Dimensions	mm	98 x 17.5 x 64	

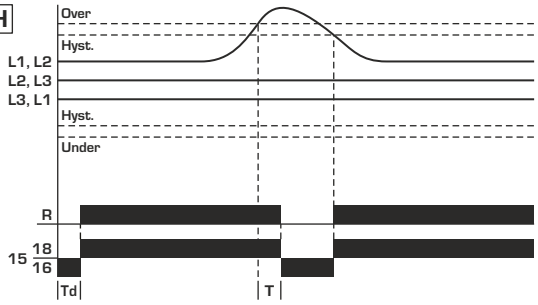
FUNCTIONS

1PH



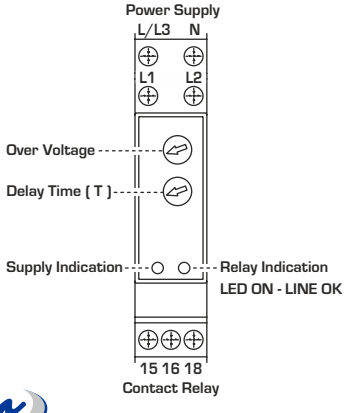
When Line is OK The R led and Relay are ON

3PH

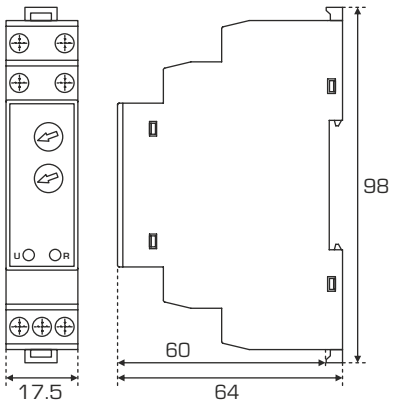


When Line is OK The R led and Relay are ON

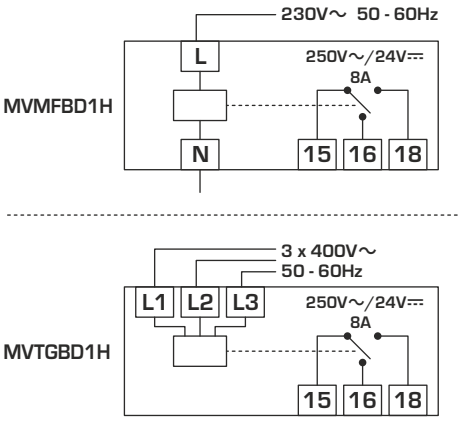
DESCRIPTION



DIMENSIONS (mm)

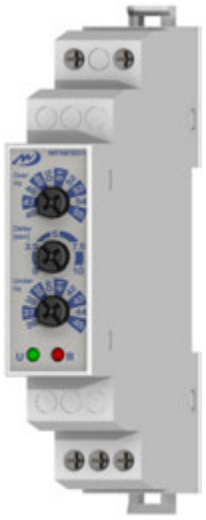


WIRING DIAGRAM



MF MFMFBD1 Frequency Monitor

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



RoHS lead-free

■ TYPICAL APPLICATION: GENSET SYSTEMS

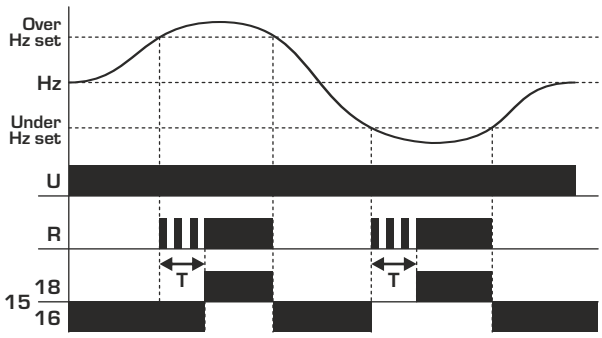
EC Directives - CE Marking:

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

TECHNICAL DATA

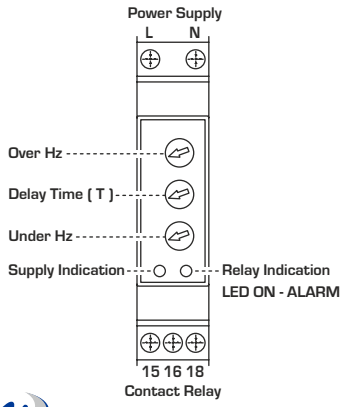
	UNIT	MFMFBD1
INPUT		
Supply voltage AC ±10%	V~	24 - 240
Nominal Frequency	Hz	50 - 60 (range: 47 - 63)
Frequency selectable	Hz	36 - 45 / 46 - 55
Power consumption (max. AC)	VA	12
Supply indication	-	Green LED **U**
OUTPUT RELAY		
Rating	-	8A - 250V~/24V⎓
Max switching power	-	2000VA
Max switching voltage	-	400V~
Min switching load	-	10mA 5V⎓
Contact life	Mech. Electr.	2×10^7 ops 1×10^5 ops
Changeover contacts	-	1 Au+AgCdO
Output Indication	-	Red LED **R**
GENERAL		
Time Delay	s	0 - 10 **T**
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
Relative Humidity w/o cond.	RH%	95
Altitude up to	m	2000
Weight	g	55
Dimensions	mm	98 x 17.5 x 64

FUNCTIONS

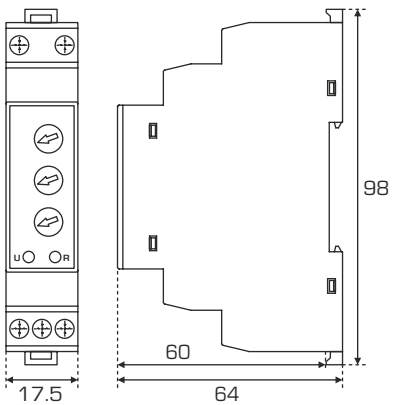


When Frequency is OK the R led and Relay are OFF
When Frequency is wrong the R led and Relay are ON

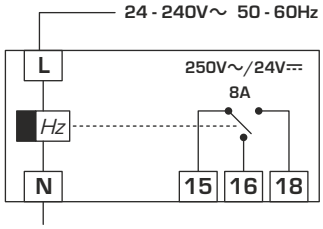
DESCRIPTION



DIMENSIONS (mm)



WIRING DIAGRAM



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

RoHS lead-free

■ TYPICAL APPLICATION: TEMPERATURE MONITOR

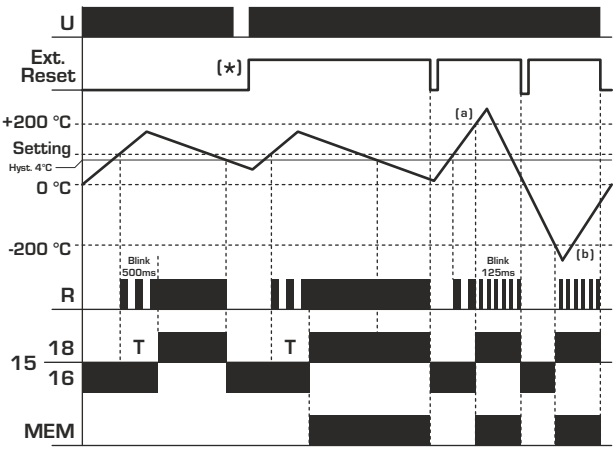
EC Directives - CE Marking:

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

TECHNICAL DATA

INPUT	UNIT	TPMCQD1-A
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	-	Green LED **U**
MEASURING CIRCUIT		
Type of sensor	-	PT100
Temperature Levels	°C	50 - 149
Precision	°C	± 2
OUTPUT RELAY		
Rating	-	8A - 250V~/24V⎓
Max switching power	-	2000VA
Max switching voltage	-	400V~
Min switching load	-	10mA 5V⎓
Contact life	Mech. Electr.	2×10^7 ops 1×10^5 ops
Changeover contacts	-	1 Au+AgCdO
Output Indication	-	Red LED **R**
GENERAL		
Delay Time	s	1 - 60 **T**
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
Relative Humidity w/o cond.	RH%	95
Altitude up to	m	2000
Weight	g	70
Dimensions	mm	98 x 17.5 x 64

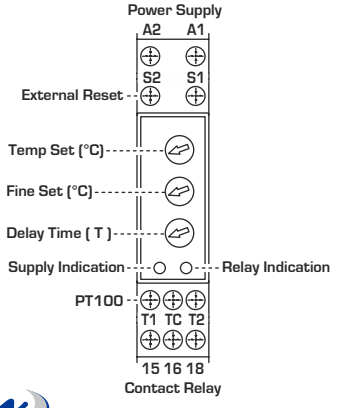
FUNCTIONS



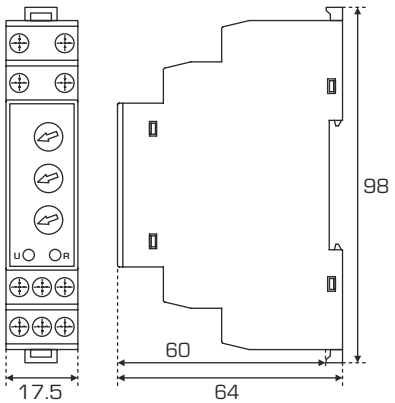
(*) - to activate the "MEM", the device needs to be restarted

(a) - Short Circuit (b) - Open Circuit

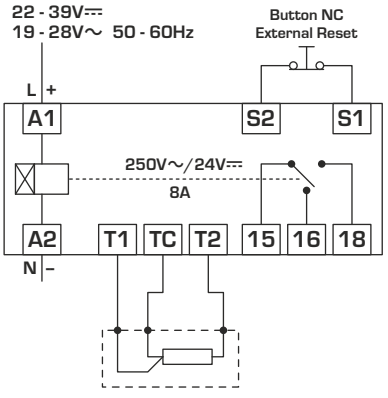
DESCRIPTION



DIMENSIONS (mm)



WIRING DIAGRAM



TP TPM...CII1/III1 PTC - Motor Protection Relay

- PROTECTION RELAY FOR MOTOR WITH PTC SENSOR
- 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

RoHS lead-free

■ TYPICAL APPLICATION: MOTOR OVERLOAD

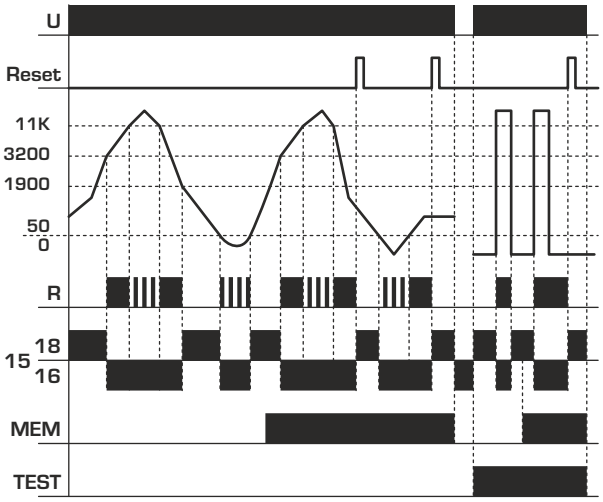
EC Directives - CE Marking:

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

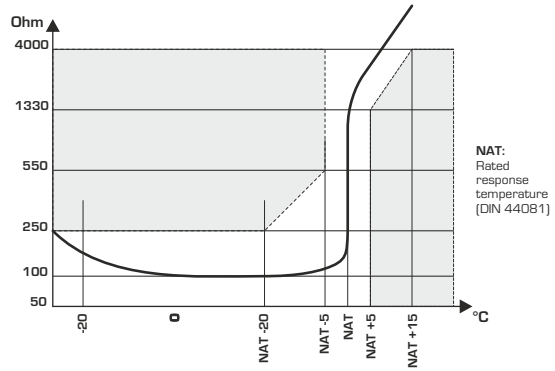
TECHNICAL DATA

	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	-	Green LED **U**	
MEASURING CIRCUIT			
Type of PTC sensor	-	According to DIN 44081	
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	-	2000VA	
Max switching voltage	-	400V~	
Min switching load	-	10mA 5V⎓	
Contact life	Mech. Electr.	2×10^7 ops 1×10^5 ops	
Changeover contacts	-	1 Au+AgCdO	
Output Indication	-	Red LED **R**	
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	
Relative Humidity w/o cond.	RH%	95	
Altitude up to	m	2000	
Weight	g	55	
Dimensions	mm	98 x 17.5 x 64	

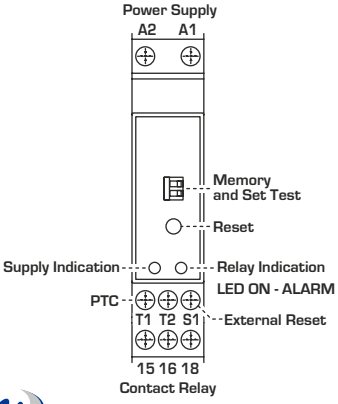
FUNCTIONS



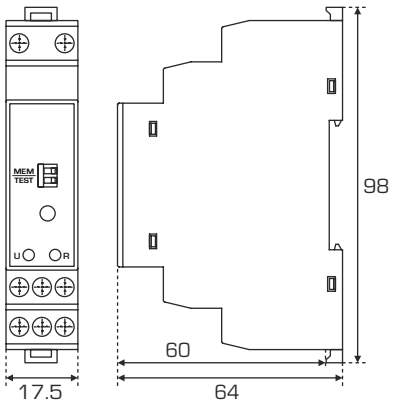
PTC RESISTIVE CURVE



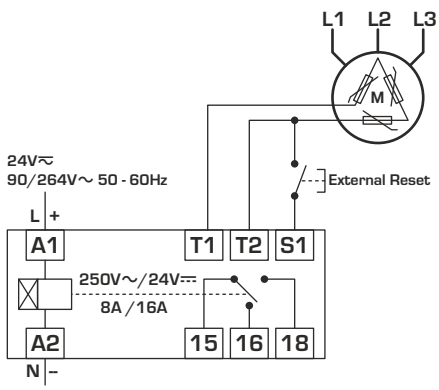
DESCRIPTION



DIMENSIONS (mm)



WIRING DIAGRAM



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

RoHS lead-free

■ TYPICAL APPLICATION: MOTOR OVERLOAD

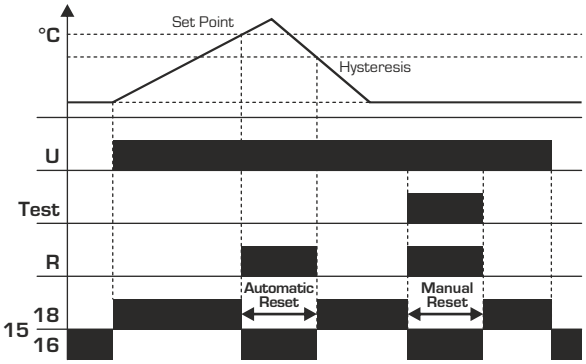
EC Directives - CE Marking:

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

TECHNICAL DATA

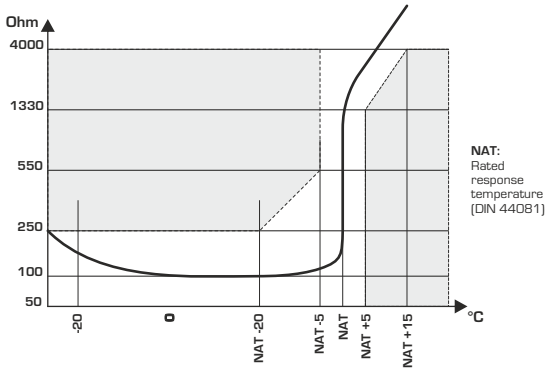
	UNIT	TPMYII1	TPMRII1	TPMGII1
INPUT				
Supply voltage AC ±10%	V~	12/24	110/230	400
Nominal Frequency	Hz	50 - 60 (range: 47 - 63)		
Power consumption (max. AC)	VA	0.5	3.2	5.6
Supply indication	-	Green LED **U**		
MEASURING CIRCUIT				
Type of PTC sensor	-	According to DIN 44081		
Total PTC resistance 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 5V⎓		
Contact life	Mech. Electr.	2 x 10^7 ops 1 x 10^5 ops		
Changeover contacts	-	1 Au+AgCdO		
Output Indication	-	Red LED **R**		
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		
Relative Humidity w/o cond.	RH%	95		
Altitude up to	m	2000		
Weight	g	170		
Dimensions	mm	94 x 35 x 58		

FUNCTIONS with 3 probe

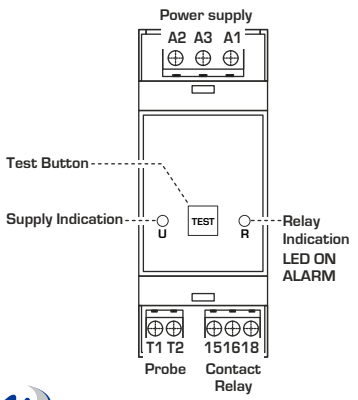


When Status is OK the R led is OFF and Relay is ON
When Status is wrong the R led is ON and Relay is OFF

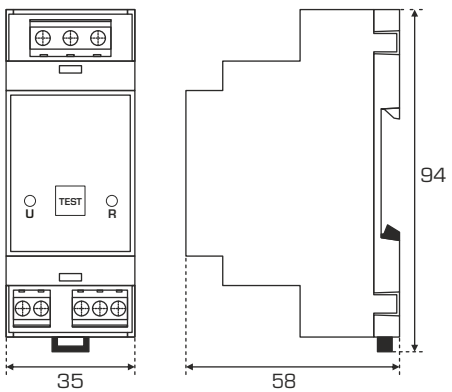
PTC RESISTIVE CURVE



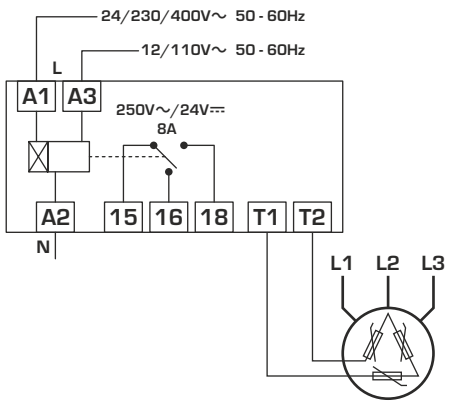
DESCRIPTION



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

RoHS lead-free

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

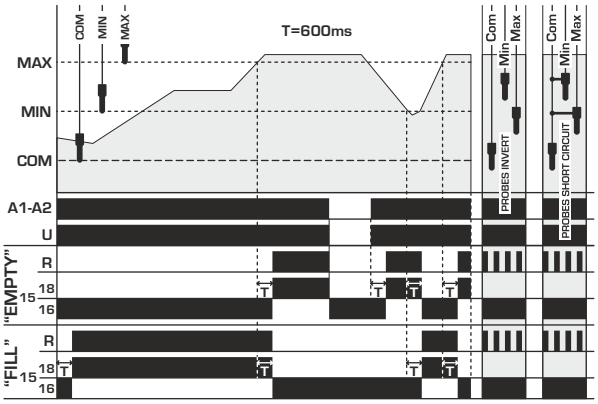
EC Directives - CE Marking:

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

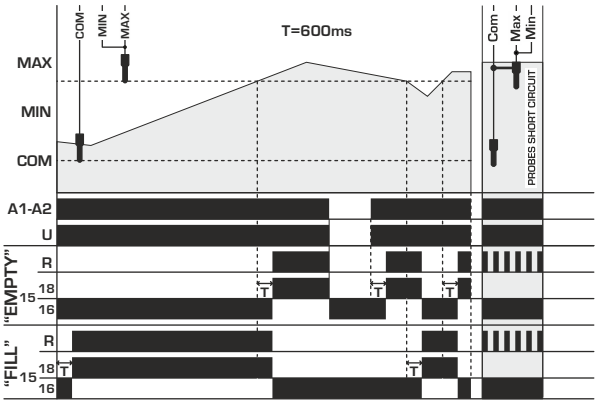
TECHNICAL DATA

INPUT	UNIT	LRMCII1	LRMEII1	LRMFII1	LRMGII1
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	-	Green LED **U**			
OUTPUT RELAY					
Rating	-	8A - 250V~/24V⎓			
Max switching power	-	2000VA			
Max switching voltage	-	400V~			
Min switching load	-	10mA 5V⎓			
Contact life	Mech. Electr.	2×10^7 ops 1×10^5 ops			
Changeover contacts	-	1 Au+AgCdO			
Output Indication	-	Red LED **R**			
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			
Relative Humidity w/o cond.	RH%	95			
Altitude up to	m	2000			
Weight	g	120			
Dimensions	mm	98 x 35.7 x 64			

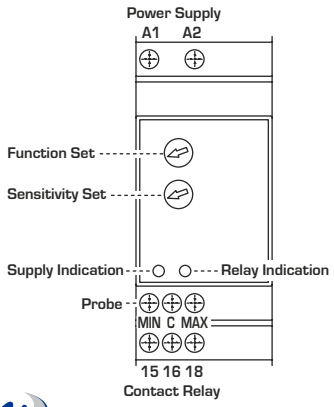
FUNCTIONS with 3 probe



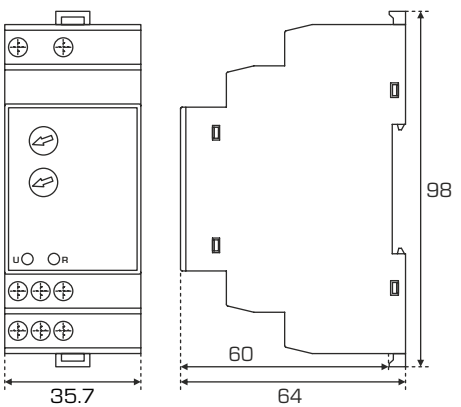
FUNCTIONS with 2 probe (short ciruite Min and Max probe)



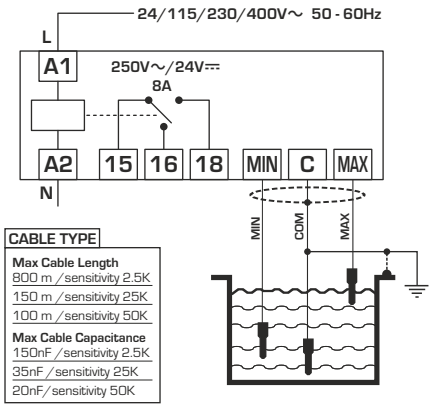
DESCRIPTION



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

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 lead-free

EC Directives - CE Marking:

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

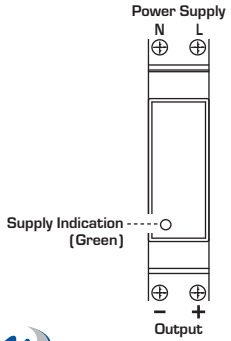
CE

TECHNICAL DATA

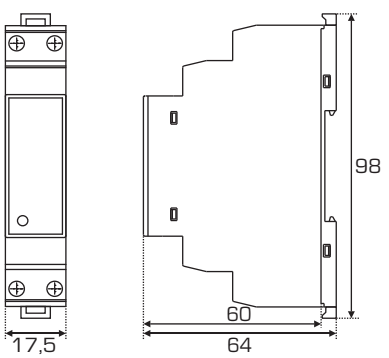
INPUT	UNIT	SWMF05L5	SWMF12L5	SWMF24L2
Supply voltage AC ±10%	V~		230	
Nominal Frequency	Hz		50 - 60 (range: 47 - 63)	
Power consumption (max. AC)	VA	12	18	15
In-rush current at rated V~ [1]	A		< 30	
Input overload protection	-		(internal)	
Input overvoltage protection (max. AC)	%		110	
OUTPUT				
Output 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	
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%		95	
MTBF (MIL STD 217D at 35°C)	h		400 000	
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

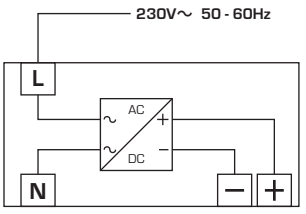
DESCRIPTION



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 lead-free

EC Directives - CE Marking:

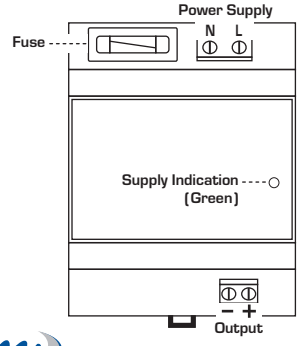
> 2006/95/EC - Low Voltage
> 2004/108/EC - EMC

TECHNICAL DATA

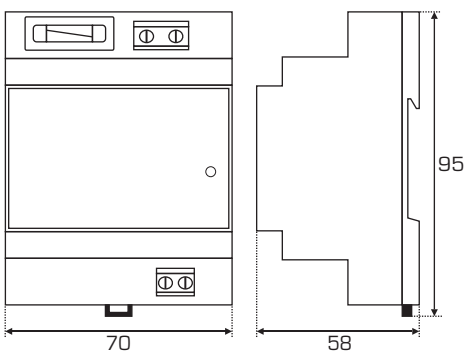
INPUT	UNIT	SWMF1202	SWMF2401
Supply voltage DC	V⎓	200 - 350	
Supply voltage AC ±10%	V~	230	
Nominal Frequency	Hz	50 - 60 (range: 47 - 63)	
Power consumption (max. AC)	VA	80	
In-rush current at rated V~ [1]	A	32	
Input overload protection T-type fuse	A	1	
Input overvoltage protection (max. AC)	%	110	
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%	95	
MTBF (MIL STD 217D at 35°C)	h	400 000	
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 Connecting in parallel in User Manual
[4] See Curve 2 in User Manual
[5] See Curve 1 in User Manual

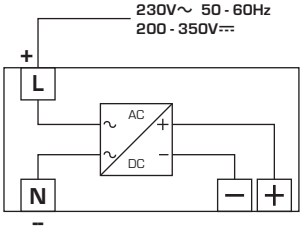
DESCRIPTION



DIMENSIONS (mm)



WIRING DIAGRAM



SW SWMI...2403/1204/2404 Switching Power Supply

- HIGH HOLD-UP TIME
- METALLIC BOX PROTECTION IP20
- FAST WIRING - PLUGGABLE CONNECTORS
- REAL DECLARED VALUES
- ADVANCED DESIGN
- DIN RAIL MOUNTING EN50.022

RoHS lead-free

EC Directives - CE Marking:

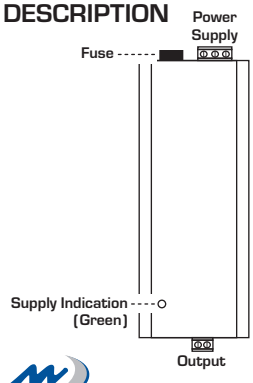
> 2006/95/EC - Low Voltage
> 2004/108/EC - EMC

TECHNICAL DATA

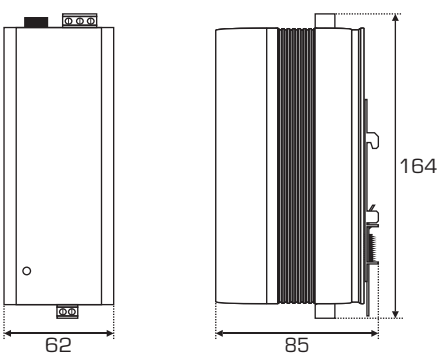
INPUT	UNIT	SWMI2403	SWMI1204	SWMI2404
Supply voltage DC	V⎓	150 - 350		
Supply voltage AC ±10%	V~	90 - 264		
Nominal Frequency	Hz	50 - 60 (range: 47 - 63)		
Power consumption (max. AC)	VA	90		
In-rush current at rated V~ [1]	A	32		
Input overload protection T-type fuse	A	1.6	2	
Input overvoltage protection (max. AC)	%	110		
OUTPUT				
Output voltage DC ±2%	V⎓	24	12	24
Max. continuos output current	A	2.5	4	
Max. continuos output power	W	60		100
Mains/Load fluctuation control	%	± 1		
Ripple BW 20MHz at max. load	mV	< 150	< 110	
Hold-up time at rated V~ and max. load [2]	ms	100		140
Rise time at rated V~ [2]	ms	150		2000
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~	%	83		
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 (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	400 000		
Altitude up to	m	2000		
Weight	g	580	640	
Dimensions	mm	164 x 62 x 85		

[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

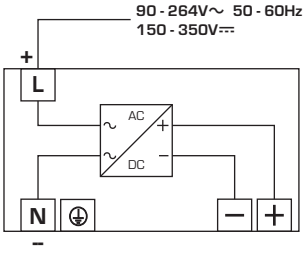
DESCRIPTION



DIMENSIONS (mm)



WIRING DIAGRAM



SW SWMI2406 Switching Power Supply

- HIGH HOLD-UP TIME
- METALLIC BOX PROTECTION IP20
- FAST WIRING - PLUGGABLE CONNECTORS
- REAL DECLARED VALUES
- ADVANCED DESIGN
- DIN RAIL MOUNTING EN50.022 OR SCREW

RoHS lead-free

EC Directives - CE Marking:

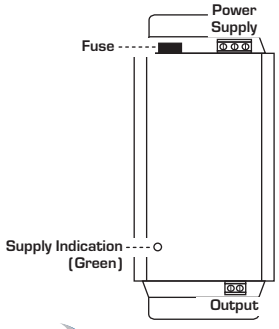
> 2006/95/EC - Low Voltage
> 2004/108/EC - EMC

TECHNICAL DATA

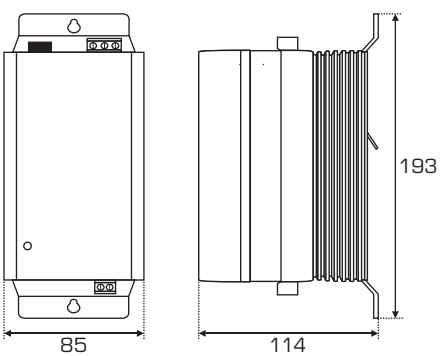
INPUT	UNIT	SWMI2406
Supply voltage DC	V⎓	150 - 350
Supply voltage AC ±10%	V~	90 - 264
Nominal Frequency	Hz	50 - 60 (range: 47 - 63)
Power consumption (max. AC)	VA	180
In-rush current at rated V~ [1]	A	32
Input overload protection T-type fuse	A	3
Input overvoltage protection (max. AC)	%	110
OUTPUT		
Output voltage DC ±2%	V⎓	24
Max. continuos output current	A	6
Max. continuos output power	W	150
Mains/Load fluctuation control	%	± 1
Ripple BW 20MHz at max. load	mV	< 70
Hold-up time at rated V~ and max. load [2]	ms	140
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
GENERAL		
Efficiency at rated V~	%	83
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 (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	400 000
Altitude up to	m	2000
Weight	g	1280
Dimensions	mm	193 x 85 x 114

[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

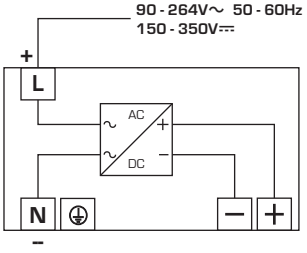
DESCRIPTION



DIMENSIONS (mm)



WIRING DIAGRAM



SW SWMF2410 Switching Power Supply

- ▸ HIGH HOLD-UP TIME
- ▸ METALLIC BOX PROTECTION IP20
- ▸ FAST WIRING - PLUGGABLE CONNECTORS
- ▸ REAL DECLARED VALUES
- ▸ ADVANCED DESIGN
- ▸ DIN RAIL MOUNTING EN50.022 OR SCREW

- ■ PFC NOT PRESENT

RoHS lead-free

EC Directives - CE Marking:

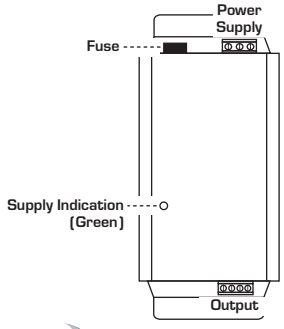
> 2006/95/EC - Low Voltage
> 2004/108/EC - EMC

TECHNICAL DATA

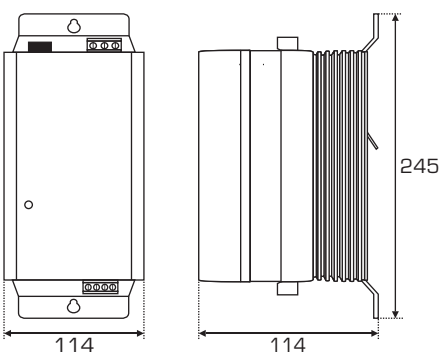
INPUT	UNIT	SWMF2410
Supply voltage DC	V⎓	200 - 350
Supply voltage AC ±10%	V~	230
Nominal Frequency	Hz	50 - 60 (range: 47 - 63)
Power consumption (max. AC)	VA	560
In-rush current at rated V~ [1]	A	32
Input overload protection T-type fuse	A	4
Input overvoltage protection (max. AC)	%	110
OUTPUT		
Output voltage DC ±2%	V⎓	24
Max. continuos output current	A	10
Max. continuos output power	W	240
Mains/Load fluctuation control	%	± 1
Ripple BW 20MHz at max. load	mV	< 70
Hold-up time at rated V~ and max. load [2]	ms	140
Rise time at rated V~ [2]	ms	2000
Parallel connection	-	Not possible
Output overvoltage protection min. % of Vout	%	120
Output overload protection % of max. load [3]	%	110% with Hiccup
GENERAL		
Efficiency at rated V~	%	83
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 (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	400 000
Altitude up to	m	2000
Weight	g	1890
Dimensions	mm	245 x 114 x 114

[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

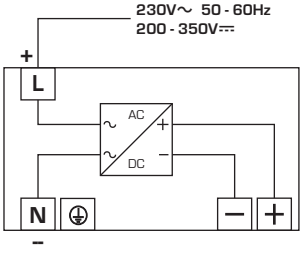
DESCRIPTION



DIMENSIONS (mm)



WIRING DIAGRAM



SW SWTL2410/20/40 Switching Power Supply

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

RoHS lead-free

EC Directives - CE Marking:

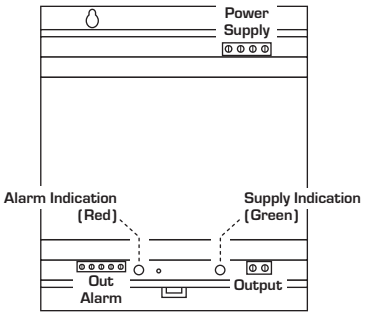
> 2006/95/EC - Low Voltage
> 2004/108/EC - EMC

TECHNICAL DATA

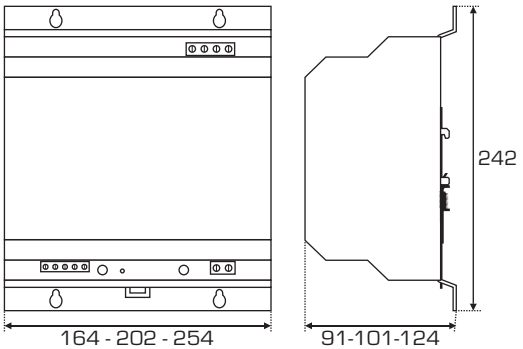
	UNIT	SWTL2410	SWTL2420	SWTL2440
INPUT				
Supply voltage AC ±10%	V~	3 x 350 - 500		
Nominal Frequency	Hz	50 - 60 (range: 47 - 63)		
Power consumption (max. AC)	VA	625	760	1385
In-rush current at rated V~ [1]	A	50 (Electronic Limitation)		
Input overvoltage protection (max. AC)	%	110		
OUTPUT				
Output voltage DC adjustable	V⎓	24 (range: 22 - 28)		
Max. continuos output current	A	10	20	40
Max. continuos output power	W	240	480	960
Mains/Load fluctuation control	%	± 1		
Ripple BW 20MHz at max. load	mV	< 50		< 150
Hold-up time at rated V~ and max. load [2]	ms	90	50	
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	400 000		
Altitude up to	m	2000		
Weight	g	3560	4060	5210
Dimensions	mm	242 x 164 x 91	242 x 202 x 101	242 x 254 x 124

[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

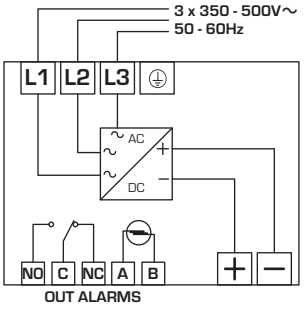
DESCRIPTION



DIMENSIONS (mm)



WIRING DIAGRAM



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 lead-free

EC Directives - CE Marking:

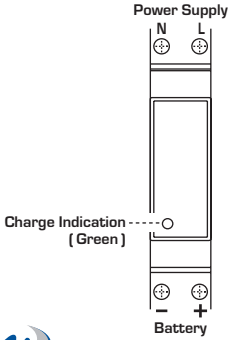
> 2006/95/EC - Low Voltage
> 2004/108/EC - EMC

TECHNICAL DATA

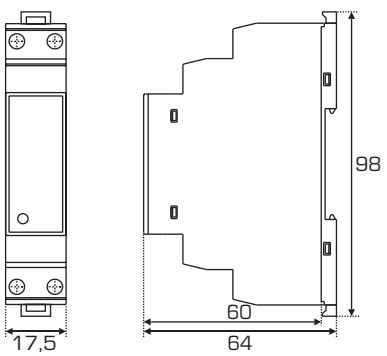
	UNIT	BCMF06L5	BCMF12L5	BCMF24L2
INPUT				
Supply voltage AC ±10%	V~		230	
Nominal Frequency	Hz		50 - 60 (range: 47 - 63)	
Power consumption (max. AC)	VA	12	18	15
In-rush current at rated V~ [1]	A		< 30	
Input overload protection	A		(internal)	
Input overvoltage protection % of VAC max	%		110	
OUTPUT				
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		400 000	
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

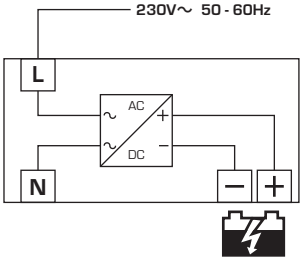
DESCRIPTION



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

RoHS lead-free

■ OPTIONAL: Tropicalization of PCB

EC Directives - CE Marking:

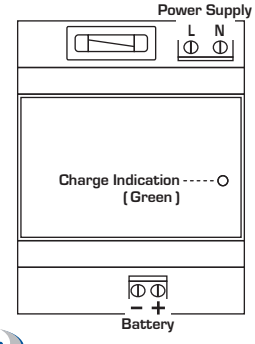
> 2006/95/EC - Low Voltage
> 2004/108/EC - EMC

TECHNICAL DATA

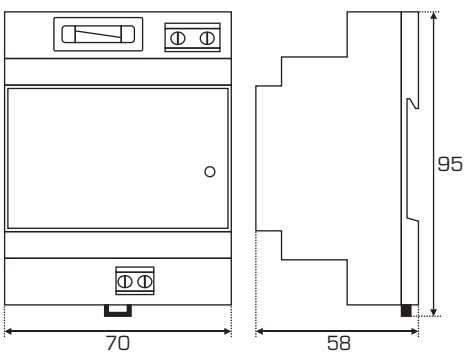
	UNIT	BCMF12E2	BCMF24E1
INPUT			
Supply voltage DC	V⎓	200 - 350	
Supply voltage AC ±10%	V~	230	
Nominal Frequency	Hz	50 - 60 (range: 47 - 63)	
Power consumption (max. AC)	VA	80	
In-rush current at rated V~ [1]	A	< 30	
Input overload protection T-type fuse	A	1	
Input overvoltage protection % of VAC max	%	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	100 000	
Altitude up to	m	2000	
Weight	g	130	
Dimensions	mm	90 x 70 x 58	

[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

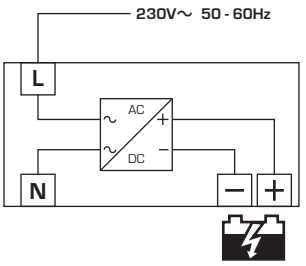
DESCRIPTION



DIMENSIONS (mm)



WIRING DIAGRAM



BC BCMI12E3/BCMF24E2 Switching Battery Charger

For Generating Groups

- 1 CHARGING LEVEL
- CHARGING CURRENT ADJ: 30% - 100% Ic
- PROTECTIONS:
  - Overvoltage AC Input (110% Ue)
  - Shortcircuit AC Input Fuse
  - Overvoltage From DC Generator of Genset
  - Low Current Charging (Ic < 200mA) Turn Off DC Output Voltage
  - Reverse Polarity of Battery With or Without AC Supply to BC
- METALLIC BOX PROTECTION IP20
- FAST WIRING - PLUGGABLE CONNECTORS
- ADVANCED DESIGN
- DIN RAIL MOUNTING EN50.022

■ OPTIONAL: Tropicalization of PCB

RoHS lead-free

EC Directives - CE Marking:

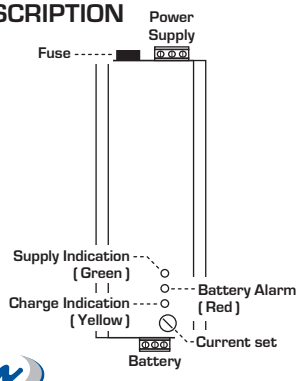
> 2006/95/EC - Low Voltage
> 2004/108/EC - EMC

TECHNICAL DATA

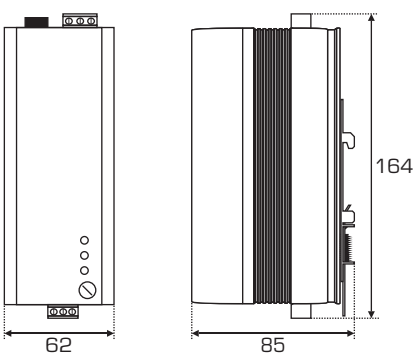
	UNIT	BCMI12E3	BCMF24E2
INPUT			
Supply voltage DC	V⎓	150 - 350	
Supply voltage AC ±10%	V~	90 - 264	230
Nominal Frequency	Hz	50 - 60 (range: 47 - 63)	
Power consumption (max. AC)	VA	90	170
In-rush current at rated V~ [1]	A	< 30	
Input overload protection T-type fuse	A	1.6	1
Input overvoltage protection % of VAC max	%	110	
OUTPUT			
Output voltage DC ±2%	V⎓	13.8	27.6
Max. output current adj. 30 - 100% of Iout	A	3	2
Max. continuos output power	W	36	45
Mains/Load fluctuation control	%	± 2	
Ripple BW 20MHz at max. load	mV	650	
Hold-up time at rated V~ and max. load [2]	ms	140	
Rise time at rated V~ [2]	ms	190	
Charging curve type	-	1 Level	
Output overvoltage protection min. % of Vout	%	120	
Output overload protection % of max. load [3]	%	110% with Hiccup	
GENERAL			
Efficiency at rated V~	%	85	
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 (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	400 000	
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	940	
Dimensions	mm	164 x 62 x 85	

[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

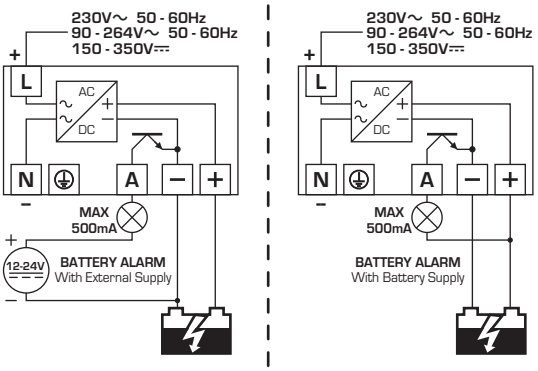
DESCRIPTION



DIMENSIONS (mm)



WIRING DIAGRAM



BC BCMI12E6/BCMF24E6 Switching Battery Charger

For Generating Groups

- 1 CHARGING LEVEL
- CHARGING CURRENT ADJ: 30% - 100% Ic
- PROTECTIONS:
  - Overvoltage AC Input (110% Ue)
  - Shortcircuit AC Input Fuse
  - Overvoltage From DC Generator of Genset
  - Low Current Charging (Ic < 200mA) Turn Off DC Output Voltage
  - Reverse Polarity of Battery With or Without AC Supply to BC
- METALLIC BOX PROTECTION IP20
- FAST WIRING - PLUGGABLE CONNECTORS
- ADVANCED DESIGN
- DIN RAIL MOUNTING EN50.022 OR SCREW

■ OPTIONAL: Tropicalization of PCB

RoHS lead-free

EC Directives - CE Marking:

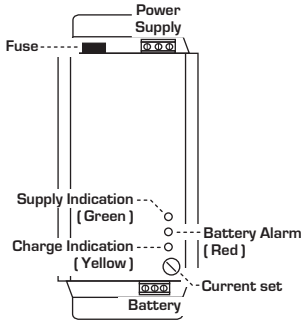
> 2006/95/EC - Low Voltage
> 2004/108/EC - EMC

TECHNICAL DATA

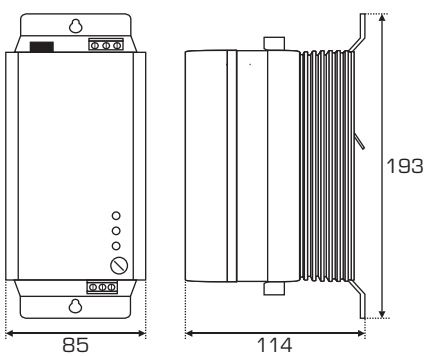
	UNIT	BCMI12E6	BCMF24E6
INPUT			
Supply voltage DC	V⎓	150 - 350	
Supply voltage AC ±10%	V~	90 - 264	230
Nominal Frequency	Hz	50 - 60 (range: 47 - 63)	
Power consumption (max. AC)	VA	180	336
In-rush current at rated V~ [1]	A	< 30	
Input overload protection T-type fuse	A	2	
Input overvoltage protection % of VAC max	%	110	
OUTPUT			
Output voltage DC ±2%	V⎓	13.8	27.6
Max. output current adj. 30 - 100% of Iout	A	6	
Max. continuos output power	W	75	150
Mains/Load fluctuation control	%	± 2	
Ripple BW 20MHz at max. load	mV	700	
Hold-up time at rated V~ and max. load [2]	ms	150	
Rise time at rated V~ [2]	ms	20	200
Charging curve type	-	1 Level	
Output overvoltage protection min. % of Vout	%	120	
Output overload protection % of max. load [3]	%	110% with Hiccup	
GENERAL			
Efficiency at rated V~	%	85	
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 (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	400 000	
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	1220	1300
Dimensions	mm	193 x 85 x 114	

[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

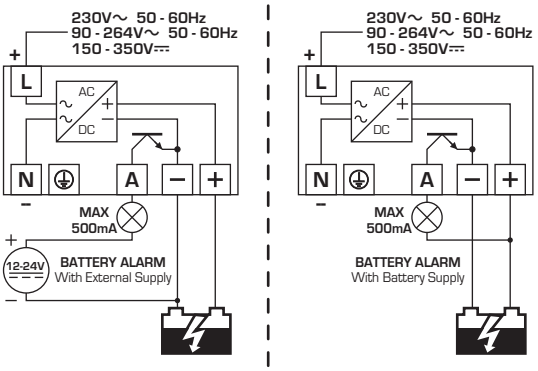
DESCRIPTION



DIMENSIONS (mm)



WIRING DIAGRAM



BC BCMF...12B2/24B2 Switching Battery Charger

- 3 CHARGING LEVEL TRICK/BULK/FLOAT
- ADJUSTABLE CHARGING CURRENT
- LED STATUS DISPLAY
- METALLIC BOX PROTECTION IP20
- ADVANCED DESIGN
- DIN RAIL MOUNTING EN50.022 OR SCREW

RoHS lead-free

EC Directives - CE Marking:

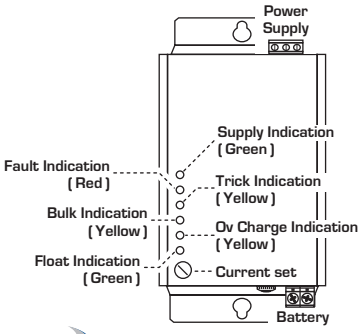
> 2006/95/EC - Low Voltage
> 2004/108/EC - EMC

TECHNICAL DATA

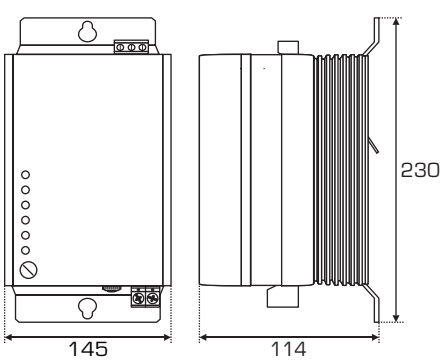
	UNIT	BCMF12B2	BCMF24B2
INPUT			
Supply voltage DC	V⎓	150 - 350	
Supply voltage AC ±10%	V~	230	
Nominal Frequency	Hz	50 - 60 (range: 47 - 63)	
Power consumption (max. AC)	VA	560	
In-rush current at rated V~ [1]	A	< 30	
Input overload protection T-type fuse	A	4	
Input overvoltage protection % of VAC max	%	110	
OUTPUT			
Output voltage DC ±1.5% (Floating state)	V⎓	13.8	27.6
Max. output current adj. 30 - 100% of Iout	A	12	
Max. continuos output power	W	150	280
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~	%	90	
Working temperature - free convection	°C	-20 / +60	
De-rating 3.4% In/°C [3]	°C	> 45	
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	400 000	
Monitoring signals	-	TRIK / BULK / FLOAT / FAULT / LOSS	
Threshold for Low Battery voltage (V Rated)	%	< 50	
Protection against battery reverse polarity	-	Electronic Circuit	
Altitude up to	m	2000	
Weight	g	2040	
Dimensions	mm	230 x 145 x 114	

(1) See Curve 3 - 4 in Technical Data (2) See Curve 2 in Technical Data (3) See Curve 1 in Technical Data

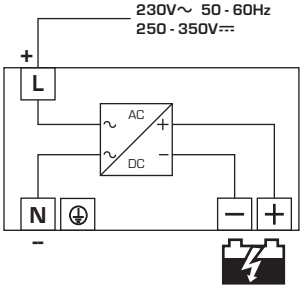
DESCRIPTION



DIMENSIONS (mm)



WIRING DIAGRAM



BC BCMF...12A2/24A2 Switching Battery Charger

- 3 CHARGING LEVEL TRICK/BULK/FLOAT
- ADJUSTABLE CHARGING CURRENT
- LED STATUS DISPLAY
- REMOTE MONITORING (Optional - Cod. CTBCHT02)
- METALLIC BOX PROTECTION IP20
- ADVANCED DESIGN
- DIN RAIL MOUNTING EN50.022 OR SCREW

RoHS lead-free

EC Directives - CE Marking:

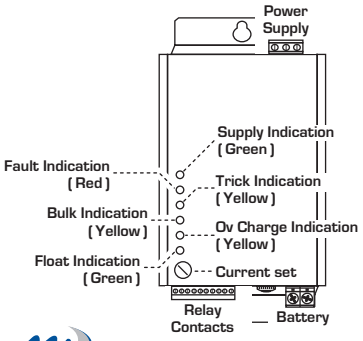
> 2006/95/EC - Low Voltage
> 2004/108/EC - EMC

TECHNICAL DATA

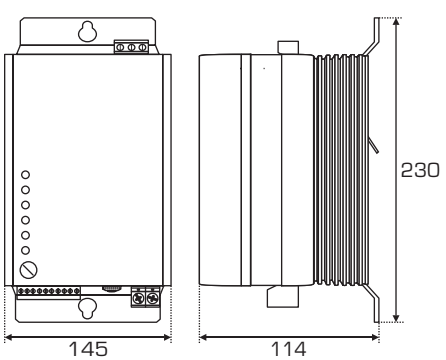
	UNIT	BCMF12A2	BCMF24A2
INPUT			
Supply voltage DC	V⎓	150 - 350	
Supply voltage AC ±10%	V~	230	
Nominal Frequency	Hz	50 - 60 (range: 47 - 63)	
Power consumption (max. AC)	VA	560	
In-rush current at rated V~ [1]	A	< 30	
Input overload protection T-type fuse	A	4	
Input overvoltage protection % of VAC max	%	110	
OUTPUT			
Output voltage DC ±1.5% (Floating state)	V⎓	13.8	27.6
Max. output current adj. 30 - 100% of Iout	A	12	
Max. continuos output power	W	150	280
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~	%	90	
Working temperature - free convection	°C	-20 / +60	
De-rating 3.4% In/°C [3]	°C	> 45	
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	400 000	
Remote monitoring signals [4]	-	TRIK / BULK / FLOAT / FAULT / LOSS	
Threshold for Low Battery voltage (V Rated)	%	< 50	
Protection against battery reverse polarity	-	Electronic Circuit	
Altitude up to	m	2000	
Weight	g	2050	
Dimensions	mm	230 x 145 x 114	

[1] See Curve 3 - 4 in Technical Data [2] See Curve 2 in Technical Data [3] See Curve 1 in Technical Data [4] On voltage - free contact

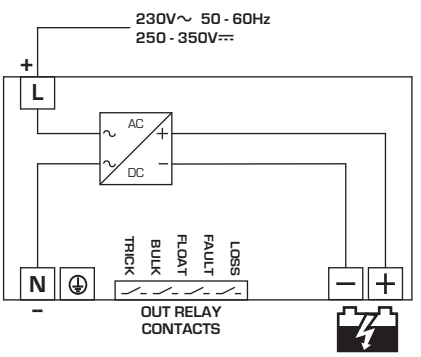
DESCRIPTION



DIMENSIONS (mm)



WIRING DIAGRAM



BC BCMF...12B5/24B5 Switching Battery Charger

- 2 CHARGING LEVEL BULK/FLOAT
- ADJUSTABLE CHARGING CURRENT
- LED STATUS DISPLAY
- METALLIC BOX PROTECTION IP20
- ADVANCED DESIGN
- DIN RAIL MOUNTING EN50.022 OR SCREW

RoHS lead-free

EC Directives - CE Marking:

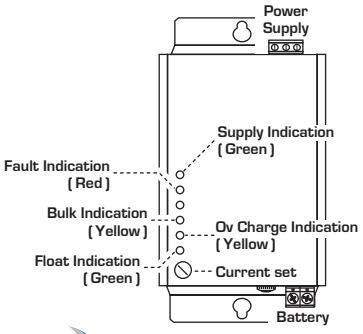
> 2006/95/EC - Low Voltage
> 2004/108/EC - EMC

TECHNICAL DATA

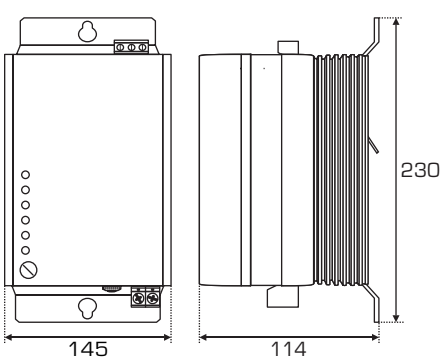
	UNIT	BCMF12B5	BCMF24B5
INPUT			
Supply voltage DC	V⎓	150 - 350	
Supply voltage AC ±10%	V~	230	
Nominal Frequency	Hz	50 - 60 (range: 47 - 63)	
Power consumption (max. AC)	VA	690	
In-rush current at rated V~ [1]	A	< 30	
Input overload protection T-type fuse	A	4	
Input overvoltage protection % of VAC max	%	110	
OUTPUT			
Output voltage DC ±1.5% (Floating state)	V⎓	13.8	27.6
Max. output current adj. 30 - 100% of Iout	A	15	
Max. continuos output power	W	180	360
Mains/Load fluctuation control	%	± 2	
Charging curve type	-	2 Levels	
Output overvoltage protection min. % of Vout	%	120	
Output overload protection % of max. load [2]	%	110% with Hiccup	
GENERAL			
Efficiency at rated V~	%	90	
Working temperature - free convection	°C	-20 / +60	
De-rating 3.4% In/°C [3]	°C	> 45	
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	400 000	
Monitoring signals	-	BULK / FLOAT / FAULT / LOSS	
Threshold for Low Battery voltage (V Rated)	%	< 50	
Protection against battery reverse polarity	-	Electronic Circuit	
Altitude up to	m	2000	
Weight	g	2040	
Dimensions	mm	230 x 145 x 114	

(1) See Curve 3 - 4 in Technical Data (2) See Curve 2 in Technical Data (3) See Curve 1 in Technical Data

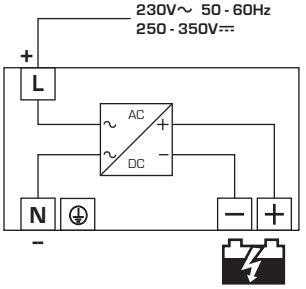
DESCRIPTION



DIMENSIONS (mm)



WIRING DIAGRAM



BC BCMF...12A5/24A5 Switching Battery Charger

- 2 CHARGING LEVEL BULK/FLOAT
- ADJUSTABLE CHARGING CURRENT
- LED STATUS DISPLAY
- REMOTE MONITORING (Optional - Cod. CTBCHT02)
- METALLIC BOX PROTECTION IP20
- ADVANCED DESIGN
- DIN RAIL MOUNTING EN50.022 OR SCREW

RoHS lead-free

EC Directives - CE Marking:

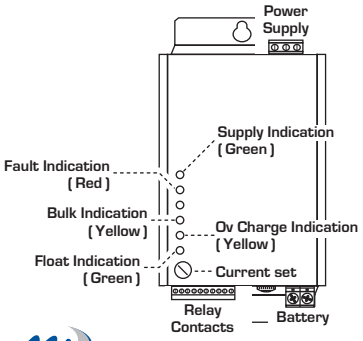
> 2006/95/EC - Low Voltage
> 2004/108/EC - EMC

TECHNICAL DATA

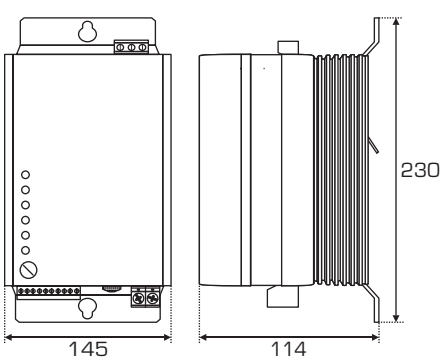
	UNIT	BCMF12A5	BCMF24A5
INPUT			
Supply voltage DC	V⎓	150 - 350	
Supply voltage AC ±10%	V~	230	
Nominal Frequency	Hz	50 - 60 (range: 47 - 63)	
Power consumption (max. AC)	VA	690	
In-rush current at rated V~ [1]	A	< 30	
Input overload protection T-type fuse	A	4	
Input overvoltage protection % of VAC max	%	110	
OUTPUT			
Output voltage DC ±1.5% (Floating state)	V⎓	13.8	27.6
Max. output current adj. 30 - 100% of Iout	A	15	
Max. continuos output power	W	180	360
Mains/Load fluctuation control	%	± 2	
Charging curve type	-	2 Levels	
Output overvoltage protection min. % of Vout	%	120	
Output overload protection % of max. load [2]	%	110% with Hiccup	
GENERAL			
Efficiency at rated V~	%	90	
Working temperature - free convection	°C	-20 / +60	
De-rating 3.4% In/°C [3]	°C	> 45	
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	400 000	
Remote monitoring signals [4]	-	BULK / FLOAT / FAULT / LOSS	
Threshold for Low Battery voltage (V Rated)	%	< 50	
Protection against battery reverse polarity	-	Electronic Circuit	
Altitude up to	m	2000	
Weight	g	2050	
Dimensions	mm	230 x 145 x 114	

[1] See Curve 3 - 4 in Technical Data [2] See Curve 2 in Technical Data [3] See Curve 1 in Technical Data [4] On voltage - free contact

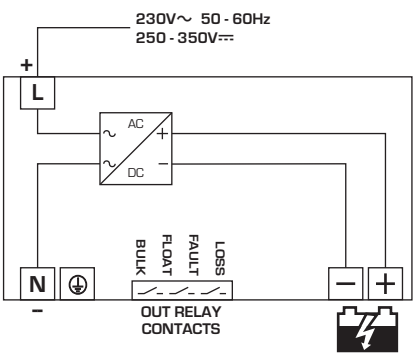
DESCRIPTION



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
lead-free

EC Directives - CE Marking:

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

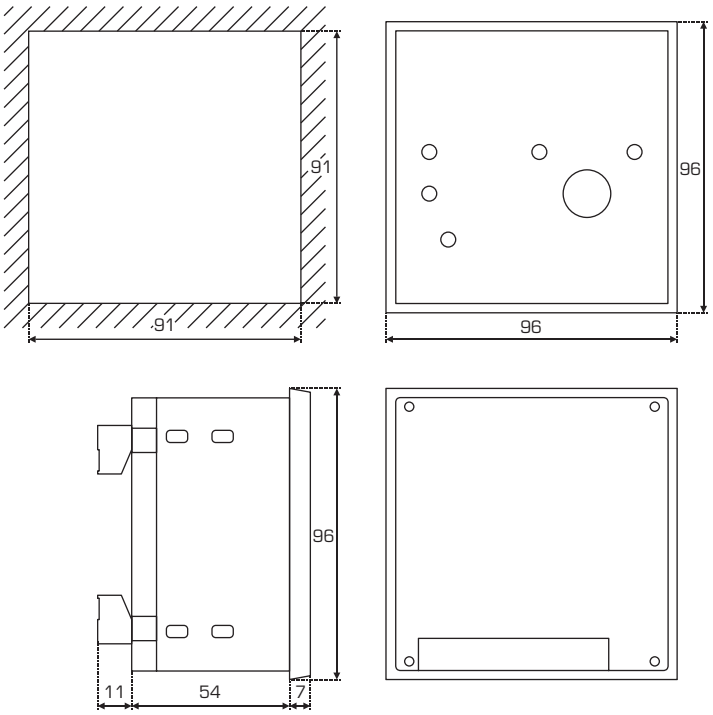
TECHNICAL DATA

	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.	%	95
Altitude up to	m	2000
Weight	g	150
Dimensions	mm	96 x 96 x 72

LED INDICATIONS:

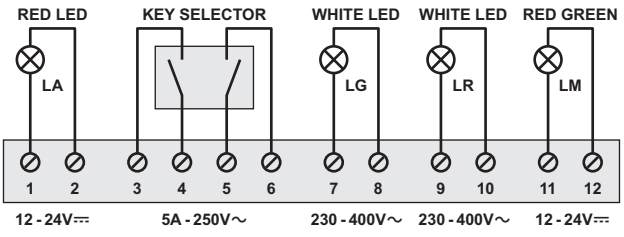
- **LR:** MAINS SIDE
- **LG:** GENERATOR SIDE
- **LM:** ENGINE RUNNING
- **LA:** ENGINE ALARM

DIMENSIONS (mm)

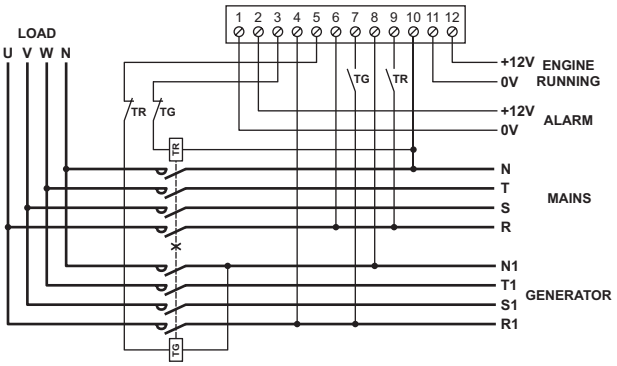


WIRING DIAGRAM

- INTERNAL CONNECTIONS



- TYPICAL APPLICATION



GENSET ITS-B/ITS-E Intelligent Transfer Switch

- THREE-PHASE VOLTAGE MEASUREMENTS - MAINS/GENERATOR
- MANUAL OR AUTOMATIC OPERATION
- MAINS AUTO DETECTION WITH AUTO RECONNECTION
- REMOTE START GENERATOR INPUT
- MIN AND MAX VOLTAGE PROTECTION - MAINS/GENERATOR
- RELAY OUTPUTS FOR MAINS/GENERATOR CONTACTOR
- SUPPLY VOLTAGE 8-30V⎓
- 1 DISPLAY 3 DIGIT 7 SEGMENT LED
- LED INDICATION - 15 FUNCTIONS
- 96X96 CASE FOR PANEL MOUNTING
- SELF-EXTINGUISHED MATERIAL UL94 V0

RoHS lead-free

CE

EC Directives - CE Marking:

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

TECHNICAL DATA

	UNIT	ITS-B	ITS-E
Supply Voltage DC	V⎓	8 - 30	
Power consumption (max. DC)	W	3	
Measuring Type	V~	230 1PH 3PH / 400 - 440 3PH	
Display Type	-	1 Display 3x7 Segment	
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.	%	95	
Altitude up to	m	2000	
Weight	g	200	230
Dimensions	mm	96 x 96 x 112	

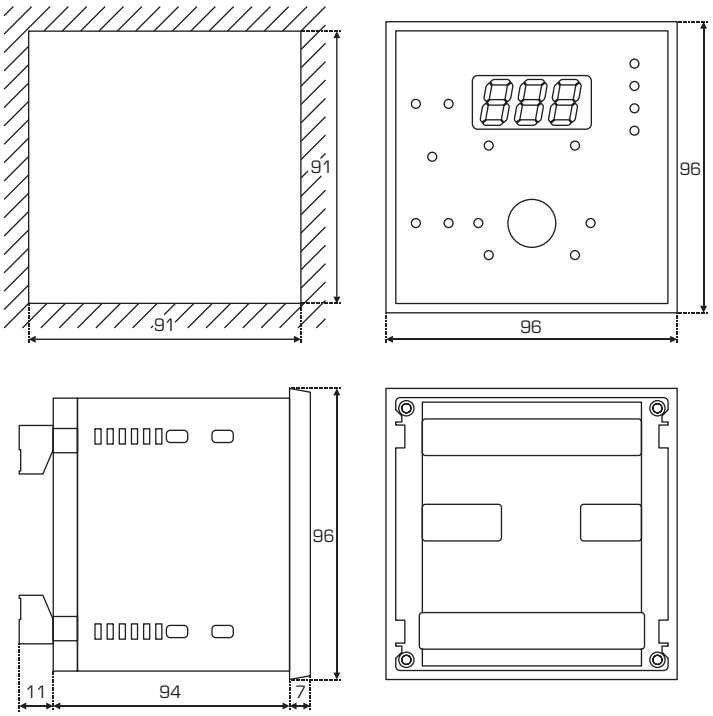
LED INDICATIONS:

- MANUAL CONTROL
- AUTOMATIC CONTROL
- MAINS ON
- GENERATOR ON
- GENERATOR CONTACTOR CLOSED
- MAINS CONTACTOR CLOSED
- PHASE VOLTAGE
- GENERATOR RUN
- GENERATOR START
- GENERATOR ALARM

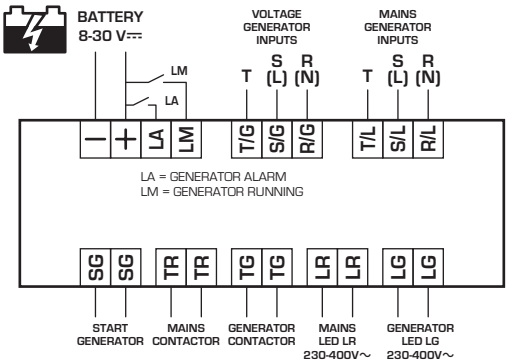
ITS-E ONLY:

- LOAD ON GENERATOR
- LOAD ON MAINS

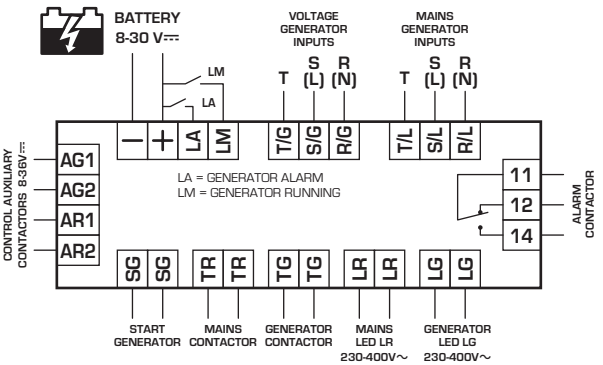
DIMENSIONS (mm)



WIRING DIAGRAM - ITS-B



WIRING DIAGRAM - ITS-E



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

RoHS
lead-free

EC Directives - CE Marking:

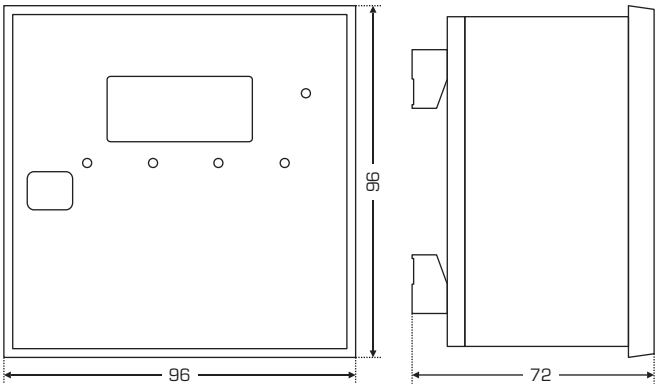
> 2006/95/EC - Low Voltage
> 2004/108/EC - EMC

CE

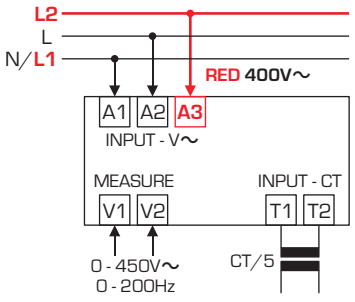
TECHNICAL DATA

	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.	%	95	
Altitude up to	m	2000	
Weight	g	260	
Dimensions	mm	96 x 96 x 72	

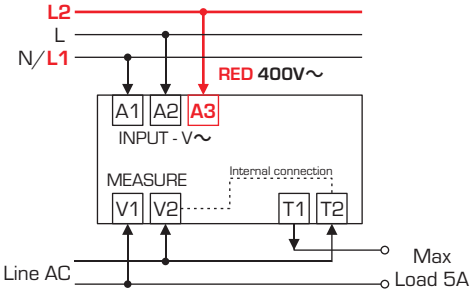
DIMENSIONS (mm)



WIRING DIAGRAM WITH CT



WIRING DIAGRAM WITHOUT CT



MI MITFR3 / MITFR3D 3PH - Energy Meter

- **MEASUREMENTS:**
  - COSφ INDUCTIVE & CAPACITIVE (four quadrants)
  - THREE PHASE VOLTAGE & CURRENT
  - POWER: W - Wh - VA - VAr - VArh
  - SINGLE AND TOTAL HARMONIC DISTORSION V/I
  - WORKING HOURS
  - AMBIENT TEMPERATURE
  - PROGRAMMABLE ALARM RELAY:
    > Under/Over V - Overcurrent - Frequency - Low Cosφ - THDi
- **RJ11 - TTL STANDARD - SERIAL INTERFACE:**
  OWNER / MODBUS RTU COMMUNUCATION PROTOCOL
- **144x144 PANEL MOUNTING or 9 MODULES DIN**
- **SELF-EXTINGUISHED MATERIAL UL94 V0**

NEW

RoHS lead-free

CE

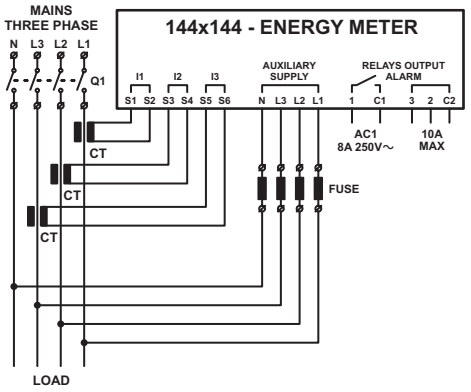
EC Directives - CE Marking:

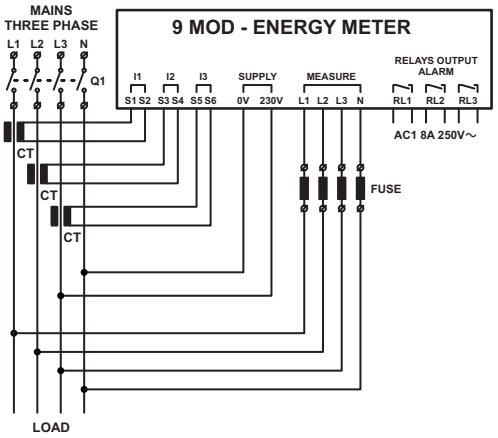
> 2006/95/EC - Low Voltage
> 2004/108/EC - EMC

TECHNICAL DATA

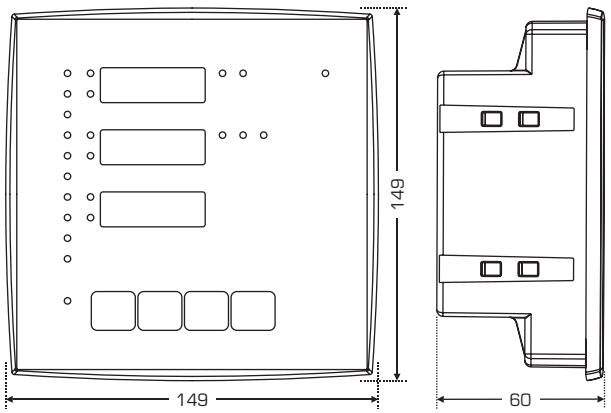
	UNIT	MITFR3	MITFR3D
Supply voltage AC ±10%	V~	3x400 + N	230 L/N
Nominal Frequency	Hz	50 - 60 (range: 45 - 65)	
Power consumption (max. AC)	VA	4	
Rated Current (CT)	A	5/1...50000	
Immunity Time For Microbreakings	ms	< 50ms	
Display Type	-	3 Display - 4 Digit - 7 Segment	
Measuring Type	-	True RMS	
Cosφ (L/L)	-	0.00 to 1.00 ±1%	
Voltage (N/Lx)	VA~	100 to 280 ±1%	
Voltage (L/L)	VA~	180 to 490 ±1%	
Current (CT)	A	0.05 to 5.5 ± 0.5%	
Active Power (Lx)	W	Class 1	
Reactive Power (Lx)	VAr	Class 1	
Apparent Power (Lx)	VA	Class 1	
THD of Volt or Current	%	0 to 255	
Work Hours	h	0 to 9999 (with multiplier)	
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.	%	95	
Altitude up to	m	2000	
Weight	g	680	550
Dimensions	mm	149 x 149 x 60	157 x 89 x 60

WIRING DIAGRAM

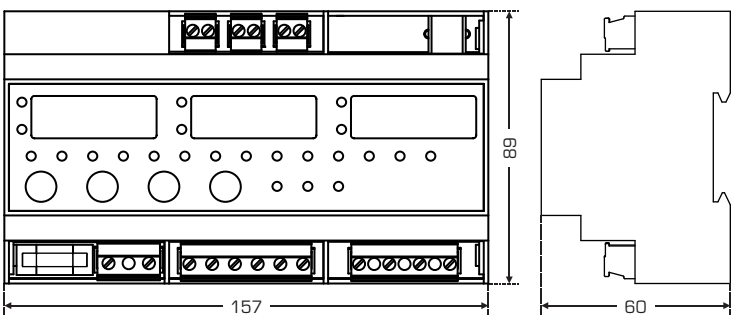




144x144 - DIMENSIONS (mm)



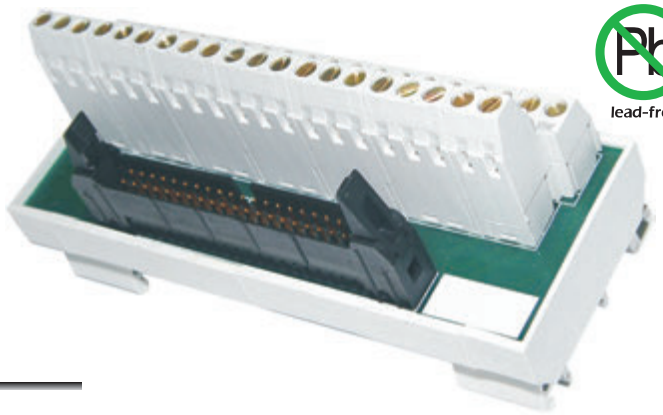
9 MODULES - DIMENSIONS (mm)



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 lead-free



EC Directives - CE Marking:

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

CE

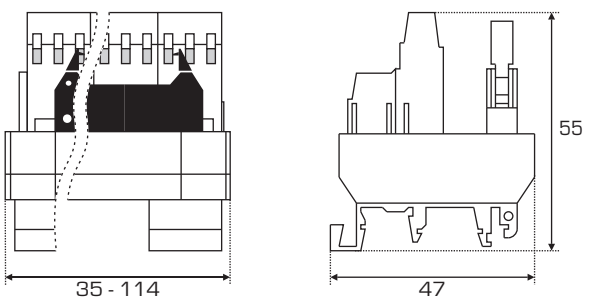
TECHNICAL DATA

	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

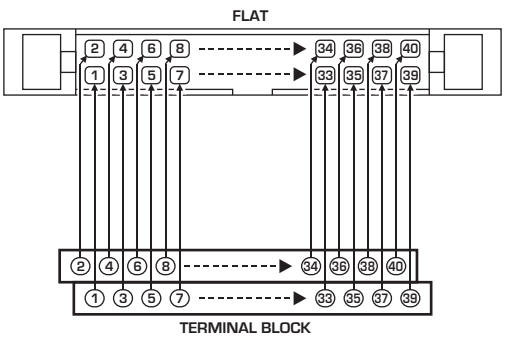
TECHNICAL DATA

	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 92 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 lead-free

EC Directives - CE Marking:

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

CE

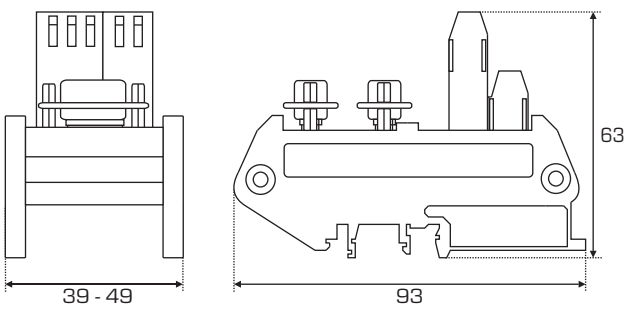
TECHNICAL DATA

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

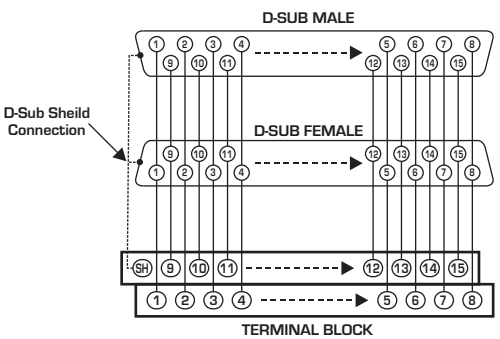
TECHNICAL DATA

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

DIMENSIONS (mm)



WIRING DIAGRAM



- D-SUB CABLE 25/37 POLES
- COMPACT INTERFACE
- SCREW CONNECTORS
- DIN RAIL MOUNTING EN50.022
- SELF-EXTINGUISHED MATERIAL UL94 V0

RoHS lead-free

EC Directives - CE Marking:

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

CE

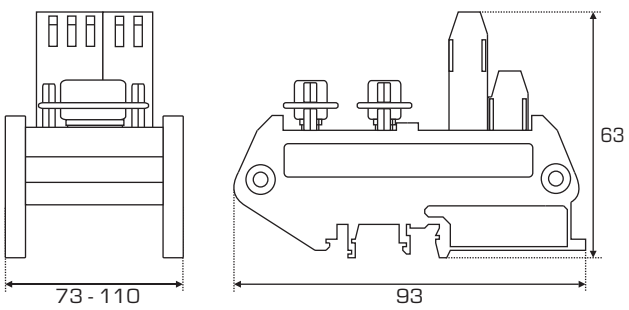
TECHNICAL DATA

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

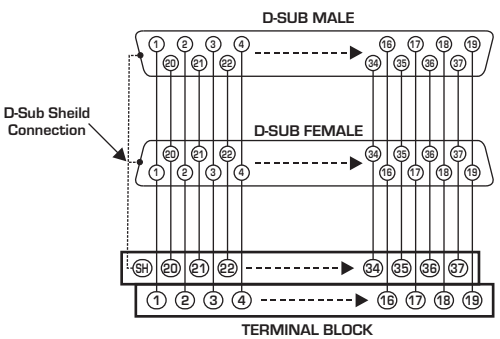
TECHNICAL DATA

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

DIMENSIONS (mm)



WIRING DIAGRAM



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

RoHS lead-free

EC Directives - CE Marking:

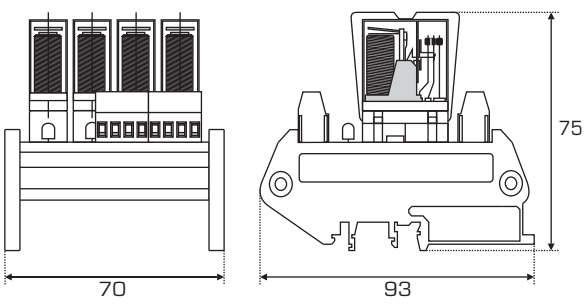
> 2006/95/EC - Low Voltage
> 2004/108/EC - EMC

CE

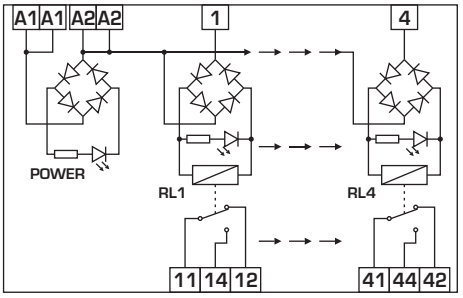
TECHNICAL DATA

	UNIT	IRA04CHA	IRA04EHA	IRA04FAA
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		
Rated voltage for contact	V~	250		
Rated current for contact	A	10		
Breaking capacity	A	10		
Min. permissible Load	mA/V	100/5		
Rated Load in AC	VA	2000		
Rated Load in DC	W	300		
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	170		
Dimensions	mm	75 x 70 x 93		

DIMENSIONS (mm)



WIRING DIAGRAM



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

RoHS lead-free

EC Directives - CE Marking:

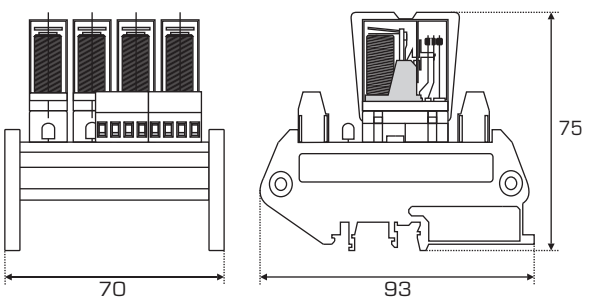
> 2006/95/EC - Low Voltage
> 2004/108/EC - EMC

CE

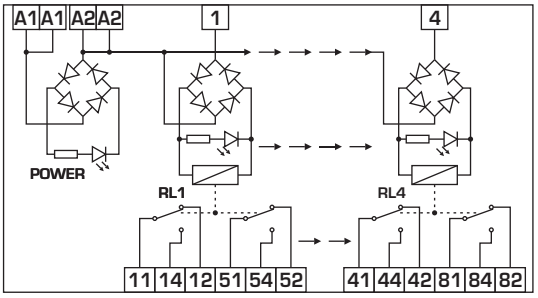
TECHNICAL DATA

	UNIT	IRA04CHB	IRA04EHB	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	-	2		
Rated voltage for contact	V~	250		
Rated current for contact	A	5		
Breaking capacity	A	5		
Min. permissible Load	mA/V	100/5		
Rated Load in AC	VA	1250		
Rated Load in DC	W	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	205		
Dimensions	mm	75 x 70 x 93		

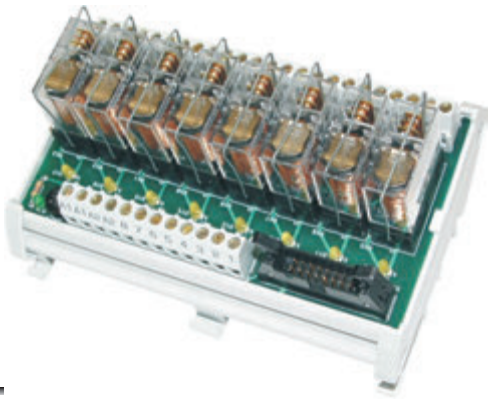
DIMENSIONS (mm)



WIRING DIAGRAM



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



RoHS lead-free

EC Directives - CE Marking:

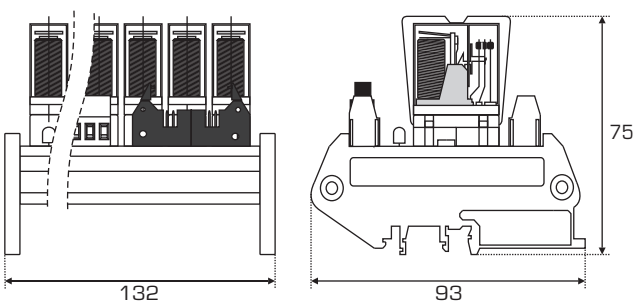
> 2006/95/EC - Low Voltage
> 2004/108/EC - EMC

CE

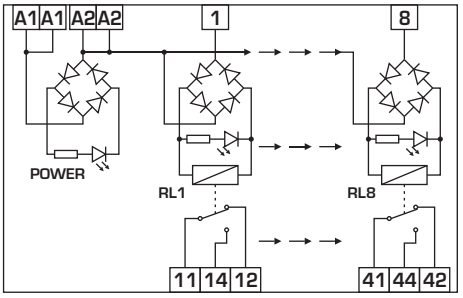
TECHNICAL DATA

	UNIT	IRA08CHA	IRA08EHA	IRA08FAA
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		
Rated voltage for contact	V~	250		
Rated current for contact	A	10		
Breaking capacity	A	10		
Min. permissible Load	mA/V	100/5		
Rated Load in AC	VA	2000		
Rated Load in DC	W	300		
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	330		
Dimensions	mm	75 x 132 x 93		

DIMENSIONS (mm)



WIRING DIAGRAM



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

RoHS lead-free

EC Directives - CE Marking:

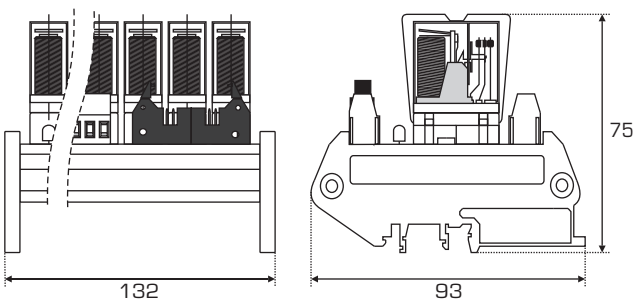
> 2006/95/EC - Low Voltage
> 2004/108/EC - EMC

CE

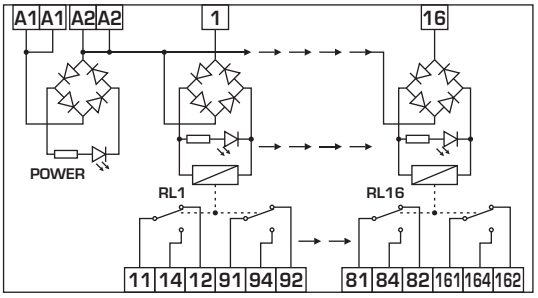
TECHNICAL DATA

	UNIT	IRA08CHB	IRA08EHB	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	-	2		
Rated voltage for contact	V~	250		
Rated current for contact	A	5		
Breaking capacity	A	5		
Min. permissible Load	mA/V	100/5		
Rated Load in AC	VA	1250		
Rated Load in DC	W	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	405		
Dimensions	mm	75 x 132 x 93		

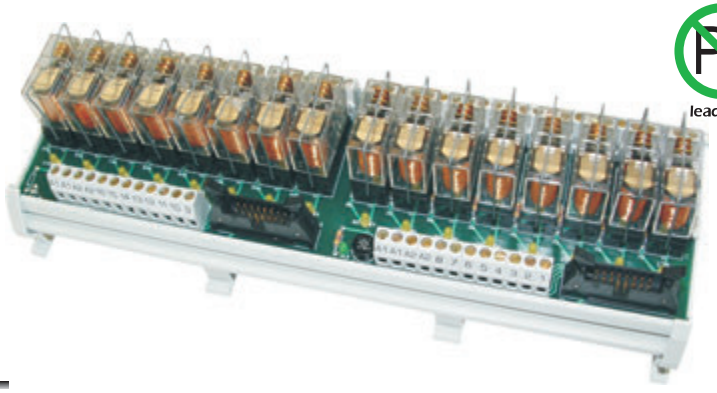
DIMENSIONS (mm)



WIRING DIAGRAM



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



RoHS lead-free

EC Directives - CE Marking:

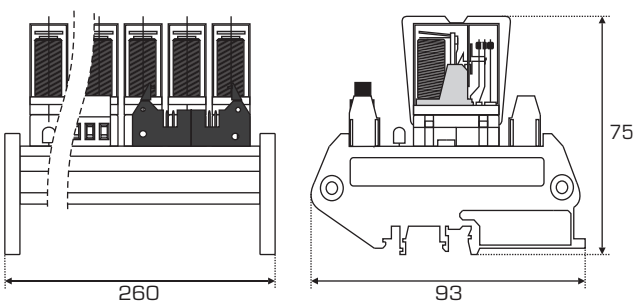
> 2006/95/EC - Low Voltage
> 2004/108/EC - EMC

CE

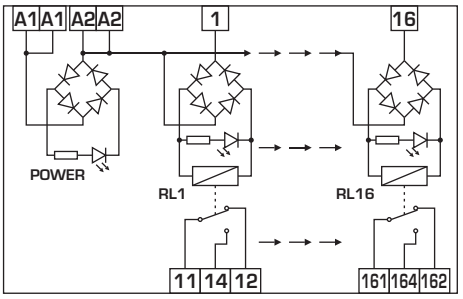
TECHNICAL DATA

	UNIT	IRA16CHA	IRA16EHA	IRA16FAA
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		
Rated voltage for contact	V~	250		
Rated current for contact	A	10		
Breaking capacity	A	10		
Min. permissible Load	mA/V	100/5		
Rated Load in AC	VA	2000		
Rated Load in DC	W	300		
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	634		
Dimensions	mm	75 x 260 x 93		

DIMENSIONS (mm)

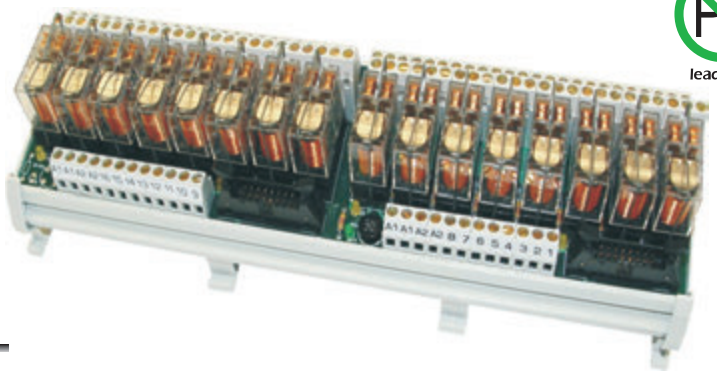


WIRING DIAGRAM



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

RoHS lead-free



EC Directives - CE Marking:

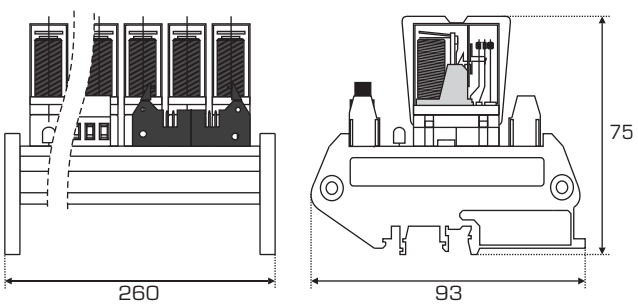
> 2006/95/EC - Low Voltage
> 2004/108/EC - EMC

CE

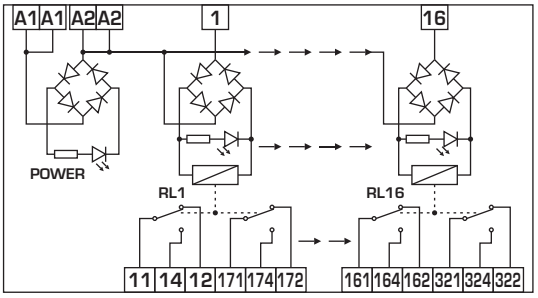
TECHNICAL DATA

	UNIT	IRA16CHB	IRA16EHB	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	-	2		
Rated voltage for contact	V~	250		
Rated current for contact	A	5		
Breaking capacity	A	5		
Min. permissible Load	mA/V	100/5		
Rated Load in AC	VA	1250		
Rated Load in DC	W	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	642		
Dimensions	mm	75 x 260 x 93		

DIMENSIONS (mm)



WIRING DIAGRAM



Remarks

Remarks

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