PSK Controllers Ltd.
Email: psk@psk.cc Website: www.psk.cc

MCE-4A

Main Generator Automatic Change Control

- Voltage monitors 3-phase mains / 3-phase generator.
- Indicates phase sequence, phase failure, Loss of neutral.
- Monitors 3 Phase symmetry and asymmetry upper and lower limit
- Minimum and maximum thresholds can be adjusted separately between -20% to +20%
- Detects loss of one or two phase.
- Measures its own supply voltage.
- Adjustable main contractor, generator contactor delay
- Protected against regenerated voltage present (back EMF).
- 3% hysteresis insures Smooth exchange at the upper or lower limit of the contactors.
- Din rail mounted
- Isolated mains and generator inputs.
- EN / IEC Certified

Operation

The completely automatic transfer switch monitors incoming voltage from the 3 Phase utility lines, around the clock. When utility power is interrupted, the automatic transfer switch immediately senses the problem and signals the generator to start. Once the generator is running at proper speed, the automatic transfer switch safely shuts off the utility line and simultaneously opens the generator power line from the generator. Within seconds, your generator system begins supplying electricity to the critical emergency circuits of your home or business. The transfer switch continues to monitor the utility line conditions. When the automatic transfer switch senses the utility line voltage has returned at a steady state, it re-transfers the electrical load back to the utility line and resumes monitoring for subsequent utility loss. The generator will continue to run for an engine cool-down period of several minutes while the entire system stands ready for the next power outage.

Operation Sequence Description

Correct main supply

	Operation	Indication	Explanation
1	applied 3 phase mains supply	LED (UM) on in	3 phase main connection on
2	Delay timer T/RMC operates	0 – 30sec	can be adjusted from the front panel
3	At the end of delay interval	LED RMC on	Relay RMC energizes contacts (15)&(18) Closed supplies phase to mains contactor (CN)
		Relay Contacts (11)&(9) are closed	generator auto activation is disconnected

Mains Power failure

	Operation	Indication	Explanation
1	Main power failure	Contacts (10) & (9) closed	Commands generator on
		Contacts (15) & (18) open	Contactor (CN) disconnected
		LED (UG) on	GNP-4 receives its supplies from generator
2	Delay time T/TRGC operates	0 – 30sec	can be adjusted from the front panel
3	At the end of delay interval		Relay RGC energizes contacts (1) & (3) Closed Supplies phase to mains Generator contactor (CN)
		LED RGC on	Generator contactor energizes

Mains Voltage Restored

	Operation	Indication	Explanation
1	Mains 3 phase restored	LED (UM) on	indicates 3 phase mains supplied
2	Delay time T1 operates	0 – 30sec	can be adjusted from the front panel
3	At the end of delay interval	Relay generator RGC de-energizes	contacts (1) & (3) Opens
		LED RGS off	Generator mains contactor (CG) de-activates
4	Delay timer T/RMC operates	0 – 30sec	can be adjusted from the front panel
5	At the end of delay interval	Relay RMC energizes	contacts (15) & (18) Closed Supplies phase to mains contactor (CN)
		LED RMC on	3 phase main connection on
		Relay Contacts (11)&(9) are closed	generator auto activation is disconnected

Note: LED (UG) stays on as long as the generator is working

Mains generator transfer switch (ATS)

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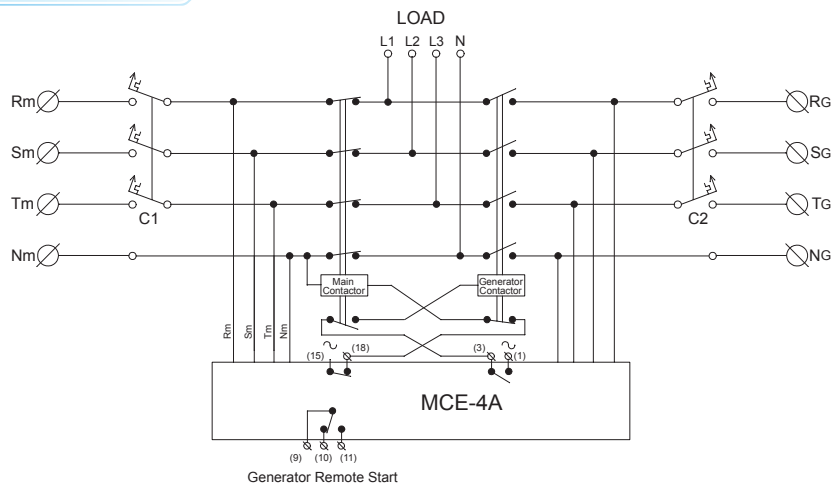
Indicator lights and Contacts

	LED Indication	Led Color	Description
Main	UM	Green	3 Phase mains connected
	SQC	Yellow	3 Phase mains wrong connection
	ASY	Blue	3 Phase Asymmetry problem
	RMC	Red	Relay RMC energizes contacts (15) & (18) connected
Generator	UG	Green	3 Phase Generator supply connected
	SQC	Yellow	3 Phase Generator wrong connection
	ASY	Blue	3 Phase Asymmetry problem
	RGC	Red	Relay RGC energizes contacts (1) & (3) connected
Timers	T/RMC		Mains contactor operation on delay (0 – 30sec)
	T1		Mains 3 Phase supply (0 – 30sec)
	T/RGC		Generator mains 3 Phase supply (0 – 30sec)
Contacts	(15) / (18)		Contacts switch for mains contactor (CN)
	(9) (10) (11)		Generator automatic activation switch
	(1)/ (3)		Contact switch for generator mains (CG)
	(RM) (SM) (TM) (NM)		Mains 3 Phase voltage inputs
	(RG) (SG) (TG) (NG)		Generator 3 Phase voltage inputs
Mains Threshold Adjustment	Min THD (-5%) - (-20%)		
	Max THD (+5%) - (+20%)		
Generator Threshold Adjustment	Min THD (-5%) - (-20%)		
	Max THD (+5%) - (+20%)		

Wiring Diagram



Technical Data

Generator Voltage:	160 – 250VAC (Ph-N) 50 - 60Hz
Mains Voltage:	160 – 250VAC (Ph-N) 50 - 60Hz
Generator contactor Delay	1 – 30sec. Adjustable
Mains return Delay:	1 – 30sec. Adjustable
Mains contactor Delay:	1 – 30sec. Adjustable
Mains RELAY output (15) – (18):	6A @ 250V -AC (COS φ = 1) 6A / 30VDC
Generator Relay output (1) – (3):	6A @ 250V -AC (COS φ = 1) 6A / 30VDC
Remote Start relay output (9) - (11) – (10):	6A @ 250V -AC (COS φ = 1) 6A / 30VDC
Operating Temp:	-15°C (-15°F)….+ 55°C (158°F)
Storage temp:	-25°C (-22°F)….+ 70°C (176°F)
Transport temperature:	-25°C….+70°C
Installation:	DIN Rail mounted
Case material:	Self-extinguishing plastic housing UL V0 acc IEC 529
Mounting position:	on DIN-rail TS 35 according to EN 50022
Mounting position:	vertically
IP Protection:	IP20
Conformity directives:	LVD : 2014/35/EU EMC : 2014/30/EU
Terminal :	acc IEC 60947-7-1, IEC 60998-1
Terminal Capacity:	1x4mm2 without multicore cable end 1x0.5 to 2.5mm2 with/without multicore cable end
Standarts:	EN 61010-1:2010 IEC61010-1:2010 (safety requirements) EN 61326 (EMC requirements)
Wight:	385 gram

Mains generator transfer switch (ATS)

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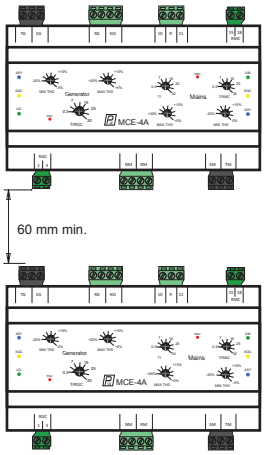
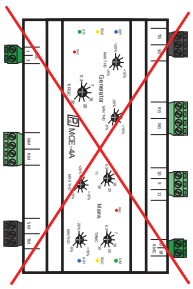
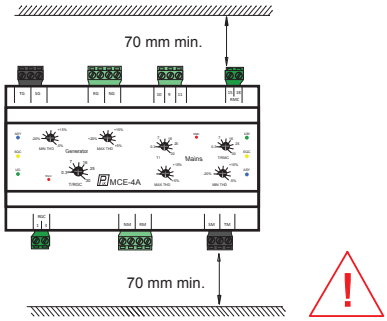
Mains generator transfer switch (ATS)

Istallation Guide MCE-4

Mounting







Wiring 75ºC Wire					
L1 - T1	[mm²] 0.05 ÷ 4	[mm²] 0.05 ÷ 4	N.A.		M3 0.5Nm
N, 1, 2, 3 W, X, (+) (-)	[mm²] 0.05 - 4	[mm²] 0.05 - 4	N.A.	N.A.	M3 0.5Nm Max

important: When using electric or pneumatic tools for screw terminals observe max. torque limits

Precautions For Installation and Safe Use

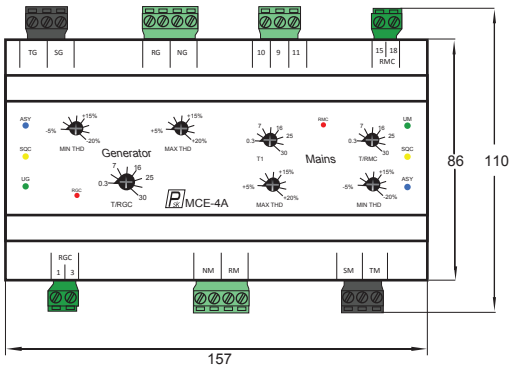
Failure to follow those instructions will result in death or serious injury.

- Disconnect all power before working on equipment.
- Do not try to clean the device with solvent or the like. Only clean the device with a dried cloth.
- Verify correct terminal connections when wiring.
- To connect the unit, use appropriate insulated 230VAC cord.
- Electrical equipment should be serviced only by your competent seller.
- Mounted on DIN - rail TS 35 according to EN 50022.
- Product intended for installation in electrical cabinets or IC boxes.

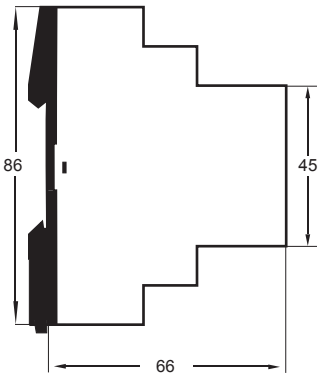
No responsibility is assured by the manufacturer or any of its subsidiaries for any consequences arising out of the use of this material.

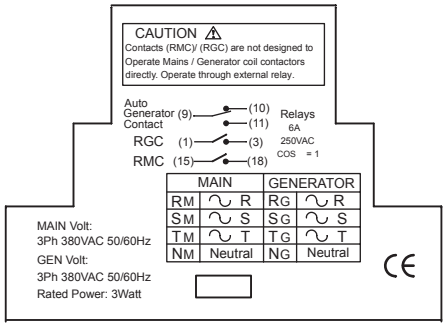
Dimensions [mm(in)]

TOP



SIDE





Protaction Recomended:

C1 3 Pole C curve Circuit Breaker 4A
C2 3 Pole C curve Circuit Breaker 4A

WARNING

The systems type MCE 4/ MCE 4A are not approved for use in resuscitation facilities, or individual analysis facilities or medical facilities that support human life or stabilizers, such as: emergency rooms, ambulatory rooms, resuscitation rooms, etc. The buyer agrees to notify PSK Controllers Ltd presentation on the use of the products listed in one of the facilities mentioned above. To make it clear, only PSK Controllers Ltd, have the right to decide and determine which product is suitable for use under the requirements uses. If the equipment is used in a manner not specified by the manufacture, the protection provide by the equipment may be impaired.

*It is recommended to install a bypass switch for an emergency event.