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Технические характеристики на распределительные щиты для сетевого генератора LTS-LEM 20-40, LTS-NEC 50-1000 компании **ELCOS**

PANELS WITH MAINS AND GENERATOR - POWER SWITCHING

Type LTS

Connect the system supplied to the mains or generator. Built to be connected to generators with an on-board control unit for emergency generator set. Wall mounting.

INSTALLATION MANUAL



Type	kVA (PRP)	In (A)	Dimensions L x H x P (mm)	Switching
LTS-LEM15	15	22	255x377x184	With CONTACTORS
LTS-LEM30	30	43	255x377x184	



Type	kVA (PRP)	In (A)	Dimensions L x H x P (mm)	Switching
LTS-NEC40	40	58	400x600x250	With CONTACTORS
LTS-NEC65	65	94	400x600x250	
LTS-NEC80	80	116	400x600x250	

Type	kVA (PRP)	In (A)	Dimensions L x H x P (mm)	Switching
LTS-NEC65CM	65	94	400x600x250	With POWERED SWITCHING at 230 Vac
LTS-NEC80CM	80	116	400x600x250	
LTS-NEC110	110	159	600x800x300	
LTS-NEC150	150	217	600x800x300	
LTS-NEC250	250	360	800x1000x450	
LTS-NEC330	330	477	800x1000x450	
LTS-NEC410	410	595	800x1000x450	
LTS-NEC500	500	725	800x1000x450	
LTS-NEC650	650	940	800x1800x600	
LTS-NEC800	800	1160	800x1800x600	
LTS-NEC1000	1000	1450	1000x1800x800	

COMPONENTS LIST						
Switchboard	Item	Description	Type	Code	Manufacturer	Q.ty
LTS-LEM/15	KM-G, KM-R	CONTATCOR AF16400013 4P 30A AC1 100-250VAC/DC	AF16400013	70100825	ABB	2
	S1	ELECTROMECHANICAL INTERLOCK HORIZONTAL VEM4	VEM4	70100845	ABB	1
	X2	SINGLE LEVEL	CBC.16/GR	70421790	CABUR	4
LTS-LEM/30	KM-G, KM-R	CONTATCOR AF26400013 45A AC1 100-250VAC/DC	AF26400013	70100826	ABB	2
	S1	ELECTROMECHANICAL INTERLOCK HORIZONTAL VEM4	VEM4	70100845	ABB	1
	X2	SINGLE LEVEL	CBC.16/GR	70421790	CABUR	4
LTS-NEC/40	KM-G, KM-R	CONTATCOR AF40400013 4P 70A AC1 100-250VAC/DC	AF40400013	70100829	ABB	2
	S1	ELECTROMECHANICAL INTERLOCK HORIZONTAL VEM964	VEM964	70100846	ABB	1
	KMR-KMG	SIDE AUXILIARY CONTACT	CAL411	70100857	ABB	2
	X2	SINGLE LEVEL	CBC.16/GR	70421790	CABUR	4
LTS-NEC/65	KM-G, KM-R	CONTATCOR AF52400013 4P 100A AC1 100-250VAC/DC	AF52400013	70100831	ABB	2
	S1	ELECTROMECHANICAL INTERLOCK HORIZONTAL VEM964	VEM964	70100846	ABB	1
	KMR-KMG	SIDE AUXILIARY CONTACT	CAL411	70100857	ABB	2
	X2	SINGLE LEVEL	GPA.70/GR	70421789	CABUR	4
LTS-NEC/65CM	KM	POWERED SWITCH ATyS 4X100A AC23 230V	95034010	70100363	SOCOMECC	1
	X2	SINGLE LEVEL	GPA.70/GR	70421789	CABUR	4
LTS-NEC/80	KM-G, KM-R	CONTATCOR AF80400013 4P 125A AC1 100-250VAC/DC	AF80400013	70100833	ABB	2
	S1	ELECTROMECHANICAL INTERLOCK HORIZONTAL VEM964	VEM964	70100846	ABB	1
	KMR-KMG	SIDE AUXILIARY CONTACT	CAL411	70100857	ABB	2
	X2	SINGLE LEVEL	GPA.70/GR	70421789	CABUR	4
LTS-NEC/80CM	KM	POWERED SWITCH ATyS 4X125A AC23 230V	95034012	70100364	SOCOMECC	1
	X2	SINGLE LEVEL	GPA.70/GR	70421789	CABUR	4
LTS-NEC/110	KM	POWERED SWITCH ATySr 4X160A AC23 230V	95034016	70100365	SOCOMECC	1
LTS-NEC/150	KM	POWERED SWITCH ATySr 4X250A AC23 230V	95234025	70100367	SOCOMECC	1
LTS-NEC/250	KM	POWERED SWITCH ATySr 4X400A AC23 230V	95234040	70100369	SOCOMECC	1
LTS-NEC/330	KM	POWERED SWITCH ATySr 4X500A AC23 220V	95234050	70100370	SOCOMECC	1
LTS-NEC/410	KM	POWERED SWITCH ATySr 4X630A AC23 230V	95234063	70100371	SOCOMECC	1
LTS-NEC/500	KM	POWERED SWITCH ATySr 4X800A AC23 230V	95234079	70100372	SOCOMECC	1
LTS-NEC/650	KM	POWERED SWITCH ATySr 4X1000A AC23 230V	95234100	70100373	SOCOMECC	1
LTS-NEC/800	KM	POWERED SWITCH ATySr 4X1250A AC23 230V	95234120	70100374	SOCOMECC	1
LTS-NEC/1000	KM	POWERED SWITCH ATySr 4X1600A AC23 230V	95234160	70100375	SOCOMECC	1

COMPONENTS LIST						
Item	Description		Type	Code	Manufacturer	Q.ty
FU1	FUSES 10,3X38 4A gG		5400104	70400304	WIMEX	1
FU1	FUSES HOLDERS 1P 10,3X38 DIN RAIL HOOK		5450101S	70450833	WIMEX	1
FU2	FUSES 10,3X38 4A gG		5400104	70400304	WIMEX	1
FU2	FUSES HOLDERS 1P 10,3X38 DIN RAIL HOOK		5450101S	70450833	WIMEX	1
FU3	FUSES 10,3X38 10A gG		5400110	70400306	WIMEX	3
FU3	FUSES HOLDERS 3P 10,3X38 DIN RAIL HOOK		5450104S	70450836	WIMEX	1
FU4	FUSES 10,3X38 1A gG		5400101	70400301	WIMEX	2
FU4	FUSES HOLDERS 2P 10,3X38 DIN RAIL HOOK		5450103S	70450835	WIMEX	1
FU5	FUSES 10,3X38 1A gG		5400101	70400301	WIMEX	2
FU5	FUSES HOLDERS 2P 10,3X38 DIN RAIL HOOK		5450103S	70450835	WIMEX	1
H1	GREEN LIGHT GAUGE AD22-22DS 220VAC/DC		AD2222DSG31	70601251	SASSIN	1
H2	GREEN LIGHT GAUGE AD22-22DS 220VAC/DC		AD2222DSG31	70601251	SASSIN	1
X1	END BRACKET CABUR		BT007	70421934	CABUR	2
X1	END SECTION		CBC.16/PT/GR	70421936	CABUR	4
X1	PASSING TERMINAL		CBC.4/GR	70421784	CABUR	4
X5	PASSING TERMINAL		CBC.4/GR	70421784	CABUR	4
K1	CONTACTOR CJX2-12008 25A 230 VAC 2NO + 2NC		CJX2-12008	70100100	HUAYU	1
E1	FAN 150X150X5.5		ART1	70730116	CEPI	1
E1	FILTER FOR FAN 150X150X5.5		ART4	70730117	CEPI	1

TECHNICAL SPECIFICATIONS								
Type	Power PRP (1)		Power COP (2)		Capacity at 40°C	Short time current	Short circuiting current at 415V	Standard panel dimensions
	kVA	A	kVA	A	A	A x 1sec	kA	L x H x P (mm)
LTS-LEM/15	15	22	13,5	19	30 (AC1)	300	-	255x377x184
LTS-LEM/30	30	43	27	38	45 (AC1)	450	-	255x377x184
LTS-NEC/40	40	58	36	52	70 (AC1)	1000	-	400x600x250
LTS-NEC/65	65	94	58	85	100 (AC1)	1000	-	400x600x250
LTS-NEC/65CM	65	94	58	85	100 (AC23)	-	2,5	400x600x250
LTS-NEC/80	80	116	72	104	125 (AC1)	1200	-	400x600x250
LTS-NEC/80CM	80	116	72	104	125 (AC23)	-	2,5	400x600x250
LTS-NEC/110	110	159	100	144	160 (AC23)	-	7	600x800x300
LTS-NEC/150	150	217	135	195	250 (AC23)	-	10	600x800x300
LTS-NEC/250	250	360	225	326	400 (AC23)	-	10	800x1000x450
LTS-NEC/330	330	477	295	430	500 (AC23)	-	10	800x1000x450
LTS-NEC/410	410	595	370	535	630 (AC23)	-	12,6	800x1000x450
LTS-NEC/500	500	725	450	652	800 (AC23)	-	16	800x1000x450
LTS-NEC/650	650	940	585	846	1000 (AC23)	-	20	800x1800x600
LTS-NEC/800	800	1160	720	1044	1250 (AC23)	-	25	800x1800x600
LTS-NEC/1000	1000	1450	900	1305	1600 (AC23)	-	32	1000x1800x800

Simplified definition of power in accordance with standard ISO8528

(1) PRP (Prime Power)

The PRP is the maximum power that the generator set can supply at variable load during a work cycle for an unlimited number of hours per year. The Permissible Average Power (**Ppp**) during a 24-hour cycle must not exceed 70% of the PRP value.

(2) COP (Continuous Power)

The COP is the maximum power that the generator set can supply, for an unlimited number of hours per year, at constant load.

TECHNICAL SPECIFICATIONS			
Mains and genset inputs			
Rated mains/genset voltage		400Vac ±10%	
Rated insulation voltage	Terminal board at mains voltage		450Vac
	Terminal board at genset voltage		450Vac
Insulation class			CLASS 1
Overvoltage category			CATEGORY 3
Mains / Genset frequency			50 ÷ 60Hz
Mains detector, battery charger, engine heater outputs			
Insulation voltage			230/400Vac
Maximum power			2kW
Control switching			
Contactors coils current absorbed	Terminal X1-1, X1-2, X1-3, X1-4		3A @ 230Vac
Commutators current absorbed	Terminal X1-1, X1-2, X1-3		250mA @ 24Vdc
Ambient conditions			
Operating temperature			-20 ÷ 40°C
Storage temperature			-20 ÷ 60°C
Relative maximum humidity			≤ 80% without condensate a 40°C
Max altitude			1000m s.l.m.
Degree of protection			
Degree of protection	LTS-LEM	Accessible sides	IP40
	LTS-NEC	Wall sides	IP20
		IP54	
Installation conditions			FOR INTERNAL USE
Electrical characteristics			
Operation			IN INSULATION
Plant system to which it is connected			TN-IT-TT
Weight			
LTS-LEM/15 – 30			7Kg
LTS-NEC/40 - 65 – 65CM			19kg
LTS-NEC/80 – 80CM			20Kg
LTS-NEC/110			49Kg
LTS-NEC/150 – 250			50Kg
LTS-NEC/330 – 410			90Kg
LTS-NEC/500 – 650			110kg
LTS-NEC/800			205kg
LTS-NEC/1000			284kg

REMARKS LTS-NEC/ 65CM-80CM-110-150-250-330-410-500-650-800-1000 ON THE OPERATION



Warning the following remarks of LTS-NEC/ 65CM-80CM-110-150-250-330-410-500-650-800-1000 switchboards:

- Mains phase(s) failure: **In the event of failure of one or more mains phases, there is the starting of the generator set and subsequent mains – genset switching. Until the switching has occurred, the load continues to be powered from the mains with one or two phases.**
- Mains – genset switching: when the mains power fails, there is the automatic starting of the generator set and subsequent mains – genset switching. During the starting of the generator set and until the mains – genset switching has occurred, the load remains connected to the mains. When the mains power returns, there is genset – mains switching and subsequent stopping of the generator set.
- In the absence of the mains supply, in the event of the generator set stopping closed on the load, restarting takes place with the load connected.
- The emergency button: The emergency button on the panel acts exclusively on the stopping of the engine of the generator set and not on the opening of the mains – genset commutator.
- Manual emergency operation: Should the powered switch control fail to perform the automatic switching, there is the option to perform the switching manually by using the emergency operation lever (included with the panel). Read the section OPERATION AND MAINTENANCE carefully.

NOTICES

Warning: Adhere closely to the following advice

- Pay attention to connection the main and generator conductors.
- Check that the absorption and consumption of the connected equipment are compatible with the described technical characteristics.
- Install in such a way that there is always adequate heat disposal.
- The equipment must be earthed via the relevant terminal.
- Make sure that copper conductor cuttings or other waste material do not fall inside the panel.
- If necessary, the fuses must only be replaced with the same type as the original.

NOTICE: The genset unit will restart automatically, when there is a mains failure or in test mode.

WARNING! Before performing any technical interventions on the genset unit, for the safety of the operators, terminal “50” of the start motor (start command) must be disconnected, the connections to the unit must be disconnected, and the control unit mounted on the generator set in “OFF” stop mode.

ELECTROMAGNETIC COMPATIBILITY

This panel functions correctly only if inserted in plants which conform with the CE marking standards; it meets the exemption requirements of the standard EN61326-1 but it cannot be excluded that malfunctions could occur in extreme cases due to particular situations. The installer has the task of checking that the disturbance levels are within the requirements of the standards.

UNLESS WE MAKE A WRITTEN DECLARATION STATING THE CONTRARY, THIS PANEL IS NOT SUITABLE FOR USE AS A CRITICAL COMPONENT IN EQUIPMENT OR PLANTS RESPONSIBLE FOR KEEPING PERSONS OR OTHER LIVING BEINGS ALIVE.

Any use which differs from that which is indicated in this instruction and user manual must be authorized by us.

MAINS CONNECTIONS

The panel connection must be made with the MAINS DISENGAGED and the BATTERY DISCONNECTED, in accordance with the wiring diagram.

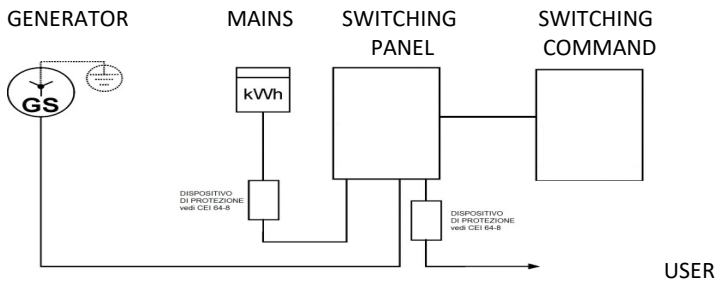
Multi-polar cables with EPR (flame resistant) insulation and scratch proof PVC sleeves must be used, nominal voltage 450/750V.

The panel must be connected to the existing earth unit, via a YELLOW/GREEN cable with cpn insulation and with a minimum section equal to the phase conductor.

The panel is suitable for being installed at a point with prospective short circuit current $I_{cp} < 10\text{kA}$.

Alternatively, it can be installed at a point with conditional short circuit current $I_{cc} < 17\text{kA}$.

The installer must ensure protection against direct/indirect contacts on the genset line in accordance with current regulations regarding electrical systems using up to 1000V in AC and 1500V in DC (for Italy CEI 64-8). The protections against direct/indirect contacts on the genset unit line, must adhere to the requirements described in the regulation CEI 64-8



BEFORE SUPPLYING VOLTAGE:

- make sure that the live parts are inaccessible.
- check the earth connection.
- Finally, check that the indicators, the block and alarm devices and the remote switch function correctly.

WARNING! THIS ELECTRICAL PANEL IS NOT SUITABLE FOR USE WHERE THE FOLLOWING CONDITIONS ARE PRESENT:

- temperatures, relative humidity values and altitudes which differ from those specified;
- in places where the temperature and pressure variations are so rapid that they produce exceptional condensation inside the panel;
- in places where there are high levels of pollution due to dust, fumes, corrosive or radioactive particles, vapours and salts;
- where there is exposure to high temperature due to solar radiation or furnaces;
- where attacks from mould or small animals are possible;
- in places where there is the risk of fires or explosions;
- subjection to strong vibrations or knocks;
- inside installations where the current throughput or interruption power could be influenced by certain conditions (e.g equipment incorporated in machinery).

RUNNING AND MAINTENANCE



WARNING: PARTS CARRYING DANGEROUS VOLTAGE

As set forth in standard CEI 11-27 – ed. 2014, opening the panel for whatever reason, including manual mains-genset switching, without turning off the power to the panel, entails working either in a "live zone" or "vicinity zone", depending on the case. For this reason, the work must be performed in compliance with the procedures described in the standard only by PES-certified electricians and, where work on energised parts is involved, by personnel qualified to do so. More specifically, performing the manual mains-genset switching operation without disconnecting the panel is considered working in a vicinity zone and, therefore, the procedures set out in sub-section 6.4 of standard CEI 11-27 must be complied with.

The following maintenance operations should be performed each week:

- automatic start with switching;
- check that indicators function;
- check that conductors are tight and condition of terminals;
- visual inspection of the equipment;
- visual inspection of the connections and the markings;
- measurement of voltage and/or current values.

These operations must, in any case, be performed using a tool which guarantees the appropriate electrical protection.

DATA FOR ORDERING	
Type	Code
LTS-LEM15	00021504
LTS-LEM30	00021505
LTS-NEC40	00021506
LTS-NEC65	00021508
LTS-NEC65CM	00021581
LTS-NEC80	00021509
LTS-NEC80CM	00021582
LTS-NEC110	00021511
LTS-NEC150	00021512
LTS-NEC250	00021513
LTS-NEC330	00021514
LTS-NEC410	00021515
LTS-NEC500	00021516
LTS-NEC650	00021518
LTS-NEC800	00021519
LTS-NEC1000	00021503

SUPPLIED ACCESSORIES	
Tipo	Codice
Kit fixing rods LTS-LEM	40750689
Kit fixing rods LTS-NEC	70750626
Lever for emergency manual operation in panel LTS-NEC/ 65CM-80CM-110-150-250-330-410-500-650-800-1000	

ACCESSORIES UPON REQUEST	
Manual MAINS-GENSET switching selector.	
Auxiliary contacts for status signal.	

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Россия +7(495)268-04-70

Казахстан +7(7172)727-132

Киргизия +996(312)96-26-47

www.elkos.nt-rt.ru | | eow@nt-rt.ru