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Архангельск (8182)63-90-72
Астрахань (8512)99-46-04
Барнаул (3852)73-04-60
Белгород (4722)40-23-64
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Брянск (4832)59-03-52
Владивосток (423)249-28-31
Владикавказ (8672)28-90-48
Владимир (4922)49-43-18
Волгоград (844)278-03-48
Вологда (8172)26-41-59
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Екатеринбург (343)384-55-89

Иваново (4932)77-34-06
Ижевск (3412)26-03-58
Иркутск (395)279-98-46
Казань (843)206-01-48
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Кемерово (3842)65-04-62
Киров (8332)68-02-04
Коломна (4966)23-41-49
Кострома (4942)77-07-48
Краснодар (861)203-40-90
Красноярск (391)204-63-61
Курск (4712)77-13-04
Курган (3522)50-90-47
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Новосибирск (383)227-86-73
Омск (3812)21-46-40
Орел (4862)44-53-42
Оренбург (3532)37-68-04
Пенза (8412)22-31-16
Петрозаводск (8142)55-98-37
Псков (8112)59-10-37

Пермь (342)205-81-47
Ростов-на-Дону (863)308-18-15
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Самара (846)206-03-16
Саранск (8342)22-96-24
Санкт-Петербург (812)309-46-40
Саратов (845)249-38-78
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Симферополь (3652)67-13-56
Смоленск (4812)29-41-54
Сочи (862)225-72-31
Ставрополь (8652)20-65-13
Сургут (3462)77-98-35
Сыктывкар (8212)25-95-17
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Тверь (4822)63-31-35
Тольятти (8482)63-91-07
Томск (3822)98-41-53
Тула (4872)33-79-87
Тюмень (3452)66-21-18
Ульяновск (8422)24-23-59
Улан-Удэ (3012)59-97-51
Уфа (347)229-48-12
Хабаровск (4212)92-98-04
Чебоксары (8352)28-53-07
Челябинск (351)202-03-61
Череповец (8202)49-02-64
Чита (3022)38-34-83
Якутск (4112)23-90-97
Ярославль (4852)69-52-93

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**Технические характеристики на
панели управления для мотопомп,
пожарных насосов EN 12845 SNFE-1203,
SNFE-1206, SNFE-1213, SNFE-1216,
SNFE-1113, SNFE-1116
компании ELCOS**

CONTROL PANEL FOR ENGINE-DRIVEN FIRE-FIGHTING

Type:

SNFE-1203 12V

SNFE-1206 12V

SNFE-1206 24V

Compliant with Standard UNI EN 12845.

INSTALLATION MANUAL



Type	For lead acid batteries:			Standard panel dimensions Lx Hx W(mm)
	Rated mains	Charging current	Starter relay	
SNFE-1203 12V	12 V	3,5 A	100 Ah	500 x 400 x 200
SNFE-1206 12V	12 V	6 A	170 Ah	
SNFE-1206 24V	24 V	6 A	170 Ah	

Single-phase power supply 230Vac 50/60Hz

Equipped with:

- Automatic C-SMART12845 type control unit.
- Automatic battery chargers.
- Terminals for interconnection with engine.
- Emergency start buttons.
- Manual-Off-Automatic selector
- Low-voltage control inputs

COMPONENTS LIST				
Item	Description	Code Manufacturer	Code Elcos	Manufacturer
AP1	BOX 400x500x200 NF-NFE UNIFIED	542	70750664	GROSSULE
AP1	PLATE 370X445 THICKNESS .2 NF-NFE UNIFIED	542-PLATE	70750665	GROSSULE
AP1	PROTECTION 48X96 IP54 03.432.0000	PUSHBUTTON PROTECTION	70493127	ITALTRONIC
C1	DUCT 25X60 T1 W/COVER	CPE7	70390124	CANAL PLAST
C2	DUCT 25X60 T1 W/COVER	CPE7	70390124	CANAL PLAST
C4	DUCT 25X60 T1 W/COVER	CPE7	70390124	CANAL PLAST
FU1	TERMINAL BLOCK WITH MINI BLADE FUSE HOLDER	MPFA.4/GR	70421804	CABUR
FU2	TERMINAL BLOCK WITH MINI BLADE FUSE HOLDER	MPFA.4/GR	70421804	CABUR
FU3	MINI BLADE FUSE 7.5A	0600120	70400245	MTA
FU3	TERMINAL BLOCK WITH MINI BLADE FUSE HOLDER	MPFA.4/GR	70421804	CABUR
FU4	MINI BLADE FUSE 7.5A	0600120	70400245	MTA
FU4	TERMINAL BLOCK WITH MINI BLADE FUSE HOLDER	MPFA.4/GR	70421804	CABUR
FU5	MINI BLADE FUSE 7.5A	0600120	70400245	MTA
FU5	TERMINAL BLOCK WITH MINI BLADE FUSE HOLDER	MPFA.4/GR	70421804	CABUR
FU6	FUSE 10,3X38 10A gG	5400110	70400306	WIMEX
FU6	FUSE HOLDER 2P 10.3X38 DIN BAR	5450103S	70450835	WIMEX
FU8	FUSE HOLDER 1P 10.3X38 DIN BAR	5450101S	70450833	WIMEX
FU9	FUSE HOLDER 1P 10.3X38 DIN BAR	5450101S	70450833	WIMEX
G1	OMEGA PROFILE 3F H. 7,5	PR/3/AS/ZB	70421806	CABUR
G2	OMEGA PROFILE 3F H. 7,5	PR/3/AS/ZB	70421806	CABUR
G3	OMEGA PROFILE 3AF H.15	PR/3/PA/ZB	70421807	CABUR
Q1	OPERATION - BLACK PADLOCKABLE KNOB D 67	011/0001	70300205	GIOVENZANA
Q1	DISCONNECT SWITCH 32A 2-POLE	SE3210F2B	70300204	GIOVENZANA
S1	KEY-OPERATED 3-POS. SELECTOR EXTRACTABLE ON 1-0-2	1SFA611283R1001	70100870	ABB
S1	3-CONTACT FASTENING SUPPORT	1SFA611605R1100	70100887	ABB
S1	NO CONTACT	1SFA611610R1001	70100886	ABB
S1	NC CONTACT	1SFA611610R1010	70100885	ABB
SA	BLACK START PUSHBUTTON PU-NA/1340	1026151	70551101	COBO
SB	BLACK START PUSHBUTTON PU-NA/1340	1026151	70551101	COBO
SC1	P/C-SMART12845 CONTROL UNIT	40242313	40242313	ELCOS
V1	CONNECTION 50A 400V KBPC5004FP	70651118	70651118	ELCOS
X1	EARTHING STUDS	TEC.6/O	70421783	CABUR
X2	MORSETTO PASSANTE	CBC.4/GR	70421784	CABUR
X2	EARTHING STUDS	TEC.6/O	70421783	CABUR
X3	FEED-THROUGH TERMINAL BLOCK	CBC.2/GR	70421782	CABUR
X3	FEED-THROUGH TERMINAL BLOCK	CBC.6/GR	70421785	CABUR
X4	FEED-THROUGH TERMINAL BLOCK	CBC.2/GR	70421782	CABUR
X4	FEED-THROUGH TERMINAL BLOCK	CBC.6/GR	70421785	CABUR
X5	DOUBLE-LEVEL TERMINAL BLOCK	HMD.2N/CI/GR	70421800	CABUR

SNFE-1203 12 V				
CBS A	BATTERY CHARGER P/CBS-031 12V	40010440	40010440	ELCOS
CBS B	BATTERY CHARGER P/CBS-031 12V	40010440	40010440	ELCOS
FU1	MINI BLADE FUSE 7.5A	0600120	70400245	MTA
FU2	MINI BLADE FUSE 7.5A	0600120	70400245	MTA
FU8	FUSE 10,3X38 2A gG	5400102	70400302	WIMEX
FU9	FUSE 10,3X38 2A gG	5400102	70400302	WIMEX

SNFE-1206 12 V				
CBS A	BATTERY CHARGER P/CBS-061 12V	40010444	40010444	ELCOS
CBS B	BATTERY CHARGER P/CBS-061 12V	40010444	40010444	ELCOS
FU1	MINI BLADE FUSE 10A	0600130	70400246	MTA
FU2	MINI BLADE FUSE 10A	0600130	70400246	MTA
FU8	FUSE 10,3X38 4A gG	5400104	70400304	WIMEX
FU9	FUSE 10,3X38 4A gG	5400104	70400304	WIMEX

SNFE-1206 24 V				
CBS A	BATTERY CHARGER P/CBS-061 24V	40010445	40010445	ELCOS
CBS B	BATTERY CHARGER P/CBS-061 24V	40010445	40010445	ELCOS
FU1	MINI BLADE FUSE 10	0600130	70400246	MTA
FU2	MINI BLADE FUSE 10A	0600130	70400246	MTA
FU8	FUSE 10,3X38 4A gG	5400104	70400304	WIMEX
FU9	FUSE 10,3X38 4A gG	5400104	70400304	WIMEX

TECHNICAL SPECIFICATIONS		
Mains inputs		
Mains system		Single phase
Rated mains voltage		230 Vac $\pm$ 10 %
Mains frequency		(50 $\div$ 60) Hz
Maximum power input (without heater)	SNFE-1203 12 V	120 W
	SNFE-1206 12 V	220 W
	SNFE-1206 24 V	440 W
Rated insulation voltage	Terminal board at mains voltage	450 Vac
	Low voltage aux services terminal block	32 Vac
Insulation class		CLASS 1
Overvoltage category		CATEGORY 3
Max. impedance in the fault ring in the point of panel installation		2,5 Ω
Plant system to wich it is connected		TN-TT-IT
Battery input		
Rated charging voltage per battery	SNFE-1203 12 V	13,7 Vdc $\pm$ 4%
	SNFE-1206 12 V	13,7 Vdc $\pm$ 4%
	SNFE-1206 24 V	27,4 Vdc $\pm$ 4%
Operating range	SNFE-1203 12 V	(8 $\div$ 35) Vdc
	SNFE-1206 12 V	(8 $\div$ 35) Vdc
	SNFE-1206 24 V	(16 $\div$ 35) Vdc
Maximum use per battery with engine stopped, with no mains	SNFE-1203 12 V	205 mA
	SNFE-1206 12 V	208 mA
	SNFE-1206 24 V	146 mA
Maximum charging current per battery, with mains	SNFE-1203 12 V	3,5 A $\pm$ 4%
	SNFE-1206 12 V	6 A $\pm$ 4%
	SNFE-1206 24 V	6 A $\pm$ 4%
Heater output		
Rated voltage		230 Vac
Maximum power		2 kVA
Digital outputs		
Clamps X3-4 $\div$ 5	Output type	BATT+A, BATT+B
	Maximum load	3 A
Clamps X3-7 $\div$ 8	Output type	BATT+
	Maximum load	3 A
Clamps OUT.4 $\div$ 8	Output type	C-NC-NO clean contact
	Maximum load	3 A
	Maximum applicable voltage	48 Vdc, 250 Vac
Clamps OUT.1	Output type	C-NC-NO clean contact
	Maximum load	3 A
	Maximum applicable voltage	48 Vdc, 65 Vac
Environmental conditions		
Operating temperature		(-5 $\div$ 40) °C
Storage temperature		(-10 $\div$ 50) °C
Maximum relative humidity		$\leq$ 50% @ 40 °C
Max altitude		2000m s.l.m.
Panel dimensions		
H x L x W		(500 x 400 x 200) mm
Protection class		
Degree of protection		IP55
Installation conditions		Wall for internal use
Panel weight		
SNFE-1203 12 V		16,5 Kg
SNFE-1206 12 V		16,5 kg
SNFE-1206 24 V		16,5 Kg

MAINS CONNECTIONS

The panel connection must be made with the MAINS DISENGAGED and the BATTERY DISCONNECTED, according to wiring diagram provided in this manual.

- The panel must be connected to the existing earthing ear unit, in compliance with current regulations.
- 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 $I_{cc} < 17\text{kA}$.

Since the system (TN-TT-IT) to which this fire-fighting pump control panel will be connected is unknown, as is unknown the earth resistance of the system itself, the panel does not come with protection devices against indirect contact.

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).

BEFORE SUPPLYING VOLTAGE:

- Make sure that the live parts are inaccessible.
- Check the earth connection.

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

- Inside installations where the current throughput or interruption power could be influenced by certain conditions (e.g equipment incorporated in machinery).

NOTICES

The panel carries out exclusively the automatic control and monitoring functions of a fire motor pump unit, keeps the batteries charged. Built for wall in a closed installation.

Warning: parts carrying dangerous voltage

Attention: carefully observe the following recommendations

- All technical interventions on the motorpump must be performed with the engine stationary and terminal 50 of the start motor disconnected.
- 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
- Always install the device at a lower position than any other devices that produce or dissipate heat.
- Some internal parts of the battery charger reach temperatures that could cause burns.
- The equipment must be earthed via the relevant terminal.
- Handle and connect the unit without mechanically stressing the electronic control unit.
- 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.
- Never disconnect the battery terminals while the engine is running.
- Strictly avoid using a battery charger for emergency start-up; this could damage the control unit.
- To safeguard people and equipment, always disconnect the electrical system terminals from the battery poles before connecting an external battery charger.

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;

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.

RUNNING AND MAINTENANCE



WARNING: PARTS CARRYING DANGEROUS VOLTAGE

The following maintenance operations should be performed each week:

- Automatic start with switching;
- Check that indicators function;
- Checking the battery status .

It is advisable to perform the following voltage-free operations:

- check that the conductors are tight, check the condition of the terminals;
- visual inspection of the connections and the markings;
- visual inspection of the equipment.

The opening of the panel for whatever reason, including manual mains-genset switching without turning off the power to the panel, implies the performance of work in the "vicinity zone" under the standard EN 50110-1, and therefore must only be performed by electrically "instructed" or "skilled" personnel and in compliance with the procedures under the standard itself.

NOTE CONCERNING CONNECTION OF COMMAND AND SAFETY DEVICES TO THE PANEL

With the direct connection of engine protection probes and remote control and command contacts to the control switch-board, particular anomalous situations (earth anomalies or interruption of electrical connections) could block the start-up or provoke its early activation. To reduce these risks, if he believes it to be necessary, the installer can take on the responsibility of applying that which is described in paragraphs 9.4.2.1 and 9.4.2.2 of standard CEI EN60204-1 (CEI 44-5) to the said connections.

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

DATI FOR ORDERING

Type	Code
SNFE-1203 12 V	00023010
SNFE-1206 12 V	00023011
SNFE-1206 24 V	00023012

SUPPLIED ACCESSORIES

Type
Kit fixing rods

CONTROL PANEL FOR ENGINE-DRIVEN FIRE-FIGHTING PUMPS

Type:

SNFE-1113/50 12V

SNFE-1113/80 12V

SNFE-1116/80 12V

SNFE-1116/80 24V

Compliant with Standard UNI EN 12845.

INSTALLATION MANUAL



Type	For lead acid batteries.			Starter relay	Standard panel dimensions L xH x W(mm)
	Rated mains	Charge current	Capacity		
SNFE-1113/50 12V	12 V	3,5 A	100 Ah	500 A	500 x 400 x 200
SNFE-1113/80 12V	12 V	3,5 A	100 Ah	800 A	
SNFE-1116/80 12V	12 V	6 A	170 Ah	800 A	
SNFE-1116/80 24V	24 V	6 A	170 Ah	800 A	

Single-phase power supply 230Vac 50/60Hz

Equipped with:

- Automatic C-SMART12845 type control unit.
- Automatic battery charger.
- Start relays inside the control panel.
- Multi-pole connector for interconnection with engine.
- Emergency start buttons.
- Manual-Off-Automatic selector.
- Low-voltage control inputs.

COMPONENTS LIST				
Item	Description	Code Manufacturer	Code Elcos	Manufacturer
AP1	BOX 400x500x200 NF-NFE UNIFIED	542	70750664	GROSSULE
AP1	PLATE 370X445 THICKNESS 2 NF-NFE UNIFIED	542-PLATE	70750665	GROSSULE
AP1	PROTECTION 48X96 IP54 03.432.0000	PUSHBUTTON PROTECTION	70493127	ITALTRONIC
C1	PROTECTION 25X60 T1.	CPE7	70390124	CANAL PLAST
C2	PROTECTION 25X60 T1.	CPE7	70390124	CANAL PLAST
C4	PROTECTION 25X60 T1.	CPE7	70390124	CANAL PLAST
FU1	TERMINAL BLOCK WITH MINI BLADE FUSE HOLDER	MPFA.4/GR	70421804	CABUR
FU2	TERMINAL BLOCK WITH MINI BLADE FUSE HOLDER	MPFA.4/GR	70421804	CABUR
FU3	MINI BLADE FUSE 7,5A	0600120	70400245	MTA
FU3	TERMINAL BLOCK WITH MINI BLADE FUSE HOLDER	MPFA.4/GR	70421804	CABUR
FU4	MINI BLADE FUSE 7,5A	0600120	70400245	MTA
FU4	TERMINAL BLOCK WITH MINI BLADE FUSE HOLDER	MPFA.4/GR	70421804	CABUR
FU5	MINI BLADE FUSE 7,5A	0600120	70400245	MTA
FU5	TERMINAL BLOCK WITH MINI BLADE FUSE HOLDER	MPFA.4/GR	70421804	CABUR
FU6	FUSE 10,3X38 10A gG	5400110	70400306	WIMEX
FU6	FUSE HOLDER 2P 10,3X38 DIN BAR	5450103S	70450835	WIMEX
FU8	FUSE HOLDER 1P 10,3X38 DIN BAR	5450101S	70450833	WIMEX
FU9	FUSE HOLDER 1P 10,3X38 DIN BAR	5450101S	70450833	WIMEX
G1	OMEGA PROFILE 3F H. 7,5	PR/3/AS/ZB	70421806	CABUR
G2	OMEGA PROFILE 3F H. 7,5	PR/3/AS/ZB	70421806	CABUR
G3	OMEGA PROFILE 3AF H.15	PR/3/PA/ZB	70421807	CABUR
Q1	OPERATION - BLACK PADLOCKABLE KNOB D 67	011/0001	70300205	GIOVENZANA
Q1	DISCONNECT SWITCH 32A 2-POLE	SE3210F2B	70300204	GIOVENZANA
S1	KEY-OPERATED 3-POS. SELECTOR EXTRACTABLE ON 1-0-2	1SFA611283R1001	70100870	ABB
S1	3-CONTACT FASTENING SUPPORT	1SFA611605R1100	70100887	ABB
S1	NO CONTACT	1SFA611610R1001	70100886	ABB
S1	NC CONTACT	1SFA611610R1010	70100885	ABB
SA	BLACK START PUSHBUTTON PU-NA/1340	1026151	70551101	COBO
SB	BLACK START PUSHBUTTON PU-NA/1340	1026151	70551101	COBO
SC1	CONTROL UNIT P/C-SMART12845	40242313	40242313	ELCOS
V1	CONTROL UNIT P/C-SMART12845	70651118	70651118	ELCOS
X1	CONNECTION 50A 400V KBPC5004FP	TEC.6/O	70421783	CABUR
X2	FEED-THROUGH TERMINAL BLOCK	CBC.4/GR	70421784	CABUR
X2	EARTHING STUDS	TEC.6/O	70421783	CABUR
X3	FEED-THROUGH TERMINAL BLOCK	CBC.2/GR	70421782	CABUR
X3	FEED-THROUGH TERMINAL BLOCK	CBC.4/GR	70421784	CABUR
X3	FEED-THROUGH TERMINAL BLOCK	CBC.6/GR	70421785	CABUR
X4	FEED-THROUGH TERMINAL BLOCK	CBC.2/GR	70421782	CABUR
X5	DOUBLE-LEVEL TERMINAL BLOCK	HMD.2N/CI/GR	70421800	CABUR

SNFE-1113/50 12V				
CBS A	BATTERY CHARGER P/CBS-031 12V	40010440	40010440	ELCOS
CBS B	BATTERY CHARGER P/CBS-031 12V	40010440	40010440	ELCOS
FU1	MINI BLADE FUSE 7,5A	0600120	70400245	MTA
FU2	MINI BLADE FUSE 7,5A	0600120	70400245	MTA
FU8	FUSE 10,3X38 2A gG	5400102	70400302	WIMEX
FU9	FUSE 10,3X38 2A gG	5400102	70400302	WIMEX
K1	RELAY AV-10 12V 500A	AV-10	40340349	ELCOS
K2	RELAY AV-10 12V 500A	AV-10	40340349	ELCOS
K3	RELAY AV-04 12V 80A	40340343	40340343	BOSCH
K4	RELAY AV-04 12V 80A	40340343	40340343	BOSCH
K5	RELAY AV-04 12V 80A	40340343	40340343	BOSCH

SNFE-1113/80 12V				
CBS A	BATTERY CHARGER P/CBS-031 12V	40010440	40010440	ELCOS
CBS B	BATTERY CHARGER P/CBS-031 12V	40010440	40010440	ELCOS
FU1	MINI BLADE FUSE 7,5A	0600120	70400245	MTA
FU2	FUSE A MINI LAMA 7,5A	0600120	70400245	MTA
FU8	FUSE 10,3X38 2A gG	5400102	70400302	WIMEX
FU9	FUSE 10,3X38 2A gG	5400102	70400302	WIMEX
K1	RELAY AV-45 12V 800A	AV-45	40340355	ELCOS
K2	RELAY AV-45 12V 800A	AV-45	40340355	ELCOS
K3	RELAY AV-04 12V 80A	40340343	40340343	BOSCH
K4	RELAY AV-04 12V 80A	40340343	40340343	BOSCH
K5	RELAY AV-04 12V 80A	40340343	40340343	BOSCH

SNFE-1116/80 12V				
CBS A	BATTERY CHARGER P/CBS-061 12V	40010444	40010444	ELCOS
CBS B	BATTERY CHARGER P/CBS-061 12V	40010444	40010444	ELCOS
FU1	MINI BLADE FUSE 10A	0600130	70400246	MTA
FU2	MINI BLADE FUSE 10A	0600130	70400246	MTA
FU8	FUSE 10,3X38 4A gG	5400104	70400304	WIMEX
FU9	FUSE 10,3X38 4A gG	5400104	70400304	WIMEX
K1	RELAY AV-45 12V 800A	AV-45	40340355	ELCOS
K2	RELAY AV-45 12V 800A	AV-45	40340355	ELCOS
K3	RELAY AV-04 12V 80A	40340343	40340343	BOSCH
K4	RELAY AV-04 12V 80A	40340343	40340343	BOSCH
K5	RELAY AV-04 12V 80A	40340343	40340343	BOSCH

SNFE-1116/80 24V				
CBS A	BATTERY CHARGER P/CBS-061 24V	40010445	40010445	ELCOS
CBS B	BATTERY CHARGER P/CBS-061 24V	40010445	40010445	ELCOS
FU1	MINI BLADE FUSE 10A	0600130	70400246	MTA
FU2	MINI BLADE FUSE 10A	0600130	70400246	MTA
FU8	FUSE 10,3X38 4A gG	5400104	70400304	WIMEX
FU9	FUSE 10,3X38 4A gG	5400104	70400304	WIMEX
K1	RELAY AV-45 24V 800A	AV-45	40340356	ELCOS
K2	RELAY AV-45 24V 800A	AV-45	40340356	ELCOS
K3	RELAY AV-08 24V 60A	40340344	40340344	BOSCH
K4	RELAY AV-08 24V 60A	40340344	40340344	BOSCH
K5	RELAY AV-08 24V 60A	40340344	40340344	BOSCH

TECHNICAL SPECIFICATIONS			
Mains inputs			
Mains system		Single phase	
Rated mains voltage		230 Vac ± 10 %	
Mains frequency		(50 ÷ 60) Hz	
Maximum power input (without heater)	SNFE-1113/50 12 V, SNFE-1113/80 12 V	120 W	
	SNFE-1116/80 12 V	220 W	
	SNFE-1116/80 24 V	440 W	
Rated insulation voltage	Terminal board at mains voltage	450 Vac	
	Low voltage aux services terminal block	32 Vac	
Insulation class		CLASS 1	
Overvoltage category		CATEGORY 3	
Max. impedance in the fault ring in the point of panel installation		2,5 Ω	
Plant system to wich it is connected		TN-TT-IT	
Battery input			
Rated charging voltage per battery	SNFE-1113/50 12 V, SNFE-1113/80 12 V	13,7 Vdc ±4%	
	SNFE-1116/80 12 V	13,7 Vdc ±4%	
	SNFE-1116/80 24 V	27,4 Vdc ±4%	
Operating range	SNFE-1113/50 12 V, SNFE-1113/80 12 V	(8 ÷ 35) Vdc	
	SNFE-1116/80 12 V	(8 ÷ 35) Vdc	
	SNFE-1116/80 24 V	(16 ÷ 35) Vdc	
Maximum use per battery with engine stopped, with no mains	SNFE-1113/50 12 V, SNFE-1113/80 12 V	205 mA	
	SNFE-1116/80 12 V	208 mA	
	SNFE-1116/80 24 V	146 mA	
Maximum charging current per battery, with mains	SNFE-1113/50 12 V, SNFE-1113/80 12 V	3,5 A ±4%	
	SNFE-1116/80 12 V	6 A ±4%	
	SNFE-1116/80 24 V	6 A ±4%	
Heater output			
Rated voltage		230 Vac	
Maximum power		2 kVA	
Digital outputs			
Clamps X5-30	Output type	BATT+A, BATT+B	
	Maximum load	SNFE-1113/50, SNFE-1116/50	500 A
		SNFE-1113/80, SNFE-1116/80	800 A
Clamps X3-7 ÷ 8	Output type	BATT+	
	Maximum load	3 A	
Clamps OUT.4 ÷ 8	Output type	C-NC-NO clean contact	
	Maximum load	3 A	
	Maximum applicable voltage	48 Vdc, 250 Vac	
Clamps OUT.1	Output type	C-NC-NO clean contact	
	Maximum load	3 A	
	Maximum applicable voltage	48 Vdc, 65 Vac	
Environmental conditions			
Operating temperature		(-5 ÷ 40) °C	
Storage temperature		(-10 ÷ 50) °C	
Maximum relative humidity		≤ 50% @ 40 °C	
Max altitude		2000m s.l.m.	
Panel dimensions			
H x L x W		(500 x 400 x 200) mm	
Protection class			
Degree of protection		IP55	
Installation conditions		Wall for internal use	
Panel weight			
SNFE-1113/50 12 V, SNFE-1113/80 12 V		17,5 Kg	
SNFE-1116/80 12 V		17,5 kg	
SNFE-1116/80 24 V		17,5 Kg	

MAINS CONNECTIONS

The panel connection must be made with the MAINS DISENGAGED and the BATTERY DISCONNECTED, according to wiring diagram provided in this manual.

The panel must be connected to the existing earthing ear unit, in compliance with current regulations

- 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 $I_{cc} < 17\text{kA}$.

Since the system (TN-TT-IT) to which this fire-fighting pump control panel will be connected is unknown, as is unknown the earth resistance of the system itself, the panel does not come with protection devices against indirect contact. 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).

BEFORE SUPPLYING VOLTAGE:

- Make sure that the live parts are inaccessible.
- Check the earth connection.

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

- Inside installations where the current throughput or interruption power could be influenced by certain conditions (e.g equipment incorporated in machinery).

NOTICES

The panel carries out exclusively the automatic control and monitoring functions of a fire motor pump unit, keeps the batteries charged.
Built for wall in a closed installation.

Warning: parts carrying dangerous voltage

Attention: carefully observe the following recommendations

- All technical interventions on the motorpump must be performed with the engine stationary and terminal 50 of the start motor disconnected.
- 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
- Always install the device at a lower position than any other devices that produce or dissipate heat.
- Some internal parts of the battery charger reach temperatures that could cause burns.
- The equipment must be earthed via the relevant terminal.
- Handle and connect the unit without mechanically stressing the electronic control unit.
- 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.
- Never disconnect the battery terminals while the engine is running.
- Strictly avoid using a battery charger for emergency start-up; this could damage the control unit.
- To safeguard people and equipment, always disconnect the electrical system terminals from the battery poles before connecting an external battery charger.

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;

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

RUNNING AND MAINTENANCE



WARNING: PARTS CARRYING DANGEROUS VOLTAGE

The following maintenance operations should be performed each week:

- Automatic start with switching;
- Check that indicators function;
- Checking the battery status .

It is advisable to perform the following voltage-free operations:

- check that the conductors are tight, check the condition of the terminals;
- visual inspection of the connections and the markings;
- visual inspection of the equipment.

The opening of the panel for whatever reason, including manual mains-genset switching without turning off the power to the panel, implies the performance of work in the "vicinity zone" under the standard EN 50110-1, and therefore must only be performed by electrically "instructed" or "skilled" personnel and in compliance with the procedures under the standard itself.

NOTE CONCERNING CONNECTION OF COMMAND AND SAFETY DEVICES TO THE PANEL

With the direct connection of engine protection probes and remote control and command contacts to the control switch-board, particular anomalous situations (earth anomalies or interruption of electrical connections) could block the start-up or provoke its early activation. To reduce these risks, if he believes it to be necessary, the installer can take on the responsibility of applying that which is described in paragraphs 9.4.2.1 and 9.4.2.2 of standard CEI EN60204-1 (CEI 44-5) to the said connections.

Ogni applicazione diversa da quanto indicato nel presente manuale deve essere da noi autorizzata.

DATI FOR ORDERING

Type	Code
SNFE-1113/50 12V	00023085
SNFE-1113/80 12V	00023086
SNFE-1116/80 12V	00023087
SNFE-1116/80 24V	00023088

SUPPLIED ACCESSORIES

Type
Kit fixing rods

CONTROL PANEL FOR ENGINE-DRIVEN FIRE-FIGHTING PUMPS

Type:

SNFE-1213/50 12V

SNFE-1213/80 12V

SNFE-1216/80 12V

SNFE-1216/80 24V

Compliant with Standard UNI EN 12845.

INSTALLATION MANUAL



Type	For lead acid batteries.			Starter relay	Standard panel dimensions Lx Hx W(mm)
	Rated mains	Charge current	Capacity		
SNFE-1213/50 12V	12 V	3,5 A	100 Ah	500 A	500 x 400 x 200
SNFE-1213/80 12V	12 V	3,5 A	100 Ah	800 A	
SNFE-1216/80 12V	12 V	6 A	170 Ah	800 A	
SNFE-1216/80 24V	24 V	6 A	170 Ah	800 A	

Single-phase power supply 230Vac 50/60Hz

Equipped with:

- Automatic C-SMART12845 type control unit.
- Automatic battery chargers.
- Start relays inside the control panel.
- Multi-pole connector for interconnection with engine.
- Connector for connection to heater.
- Emergency start buttons.
- Manual-Off-Automatic selector.
- Low-voltage control inputs.

COMPONENTS LIST				
Item	Description	Code Manufacturer	Code Elcos	Manufacturer
AP1	BOX 400x500x200 NF-NFE UNIFIED	542	70750664	GROSSULE
AP1	PLATE 370X445 THICKNESS 2 NF-NFE UNIFIED	542-PLATE	70750665	GROSSULE
AP1	PROTECTION 48X96 IP54 03.432.0000	PUSHBUTTON PROTECTION	70493127	ITALTRONIC
C1	PROTECTION 48X96 IP54 03.432.0000.	CPE7	70390124	CANAL PLAST
C2	PROTECTION 48X96 IP54 03.432.0000	CPE7	70390124	CANAL PLAST
C4	PROTECTION 48X96 IP54 03.432.0000	CPE7	70390124	CANAL PLAST
CON1	16 P CONNECTOR SOCKET MODULE	JCNEF16	70803508	ILME
CON1	BUILT-IN COVER PLUS LEVERS 16P+T CONNECTOR	JCVI16	70803509	ILME
CON2	COVER WITH LEVER FOR CKF03	CK 03 I	70803498	ILME
CON2	16 P CONNECTOR SOCKET MODULE	CKF 03	70803496	ILME
FU1	TERMINAL BLOCK WITH MINI BLADE FUSE HOLDER	MPFA.4/GR	70421804	CABUR
FU2	TERMINAL BLOCK WITH MINI BLADE FUSE HOLDER	MPFA.4/GR	70421804	CABUR
FU3	MINI BLADE FUSE 7.5A	0600120	70400245	MTA
FU3	TERMINAL BLOCK WITH MINI BLADE FUSE HOLDER	MPFA.4/GR	70421804	CABUR
FU4	MINI BLADE FUSE 7.5A	0600120	70400245	MTA
FU4	TERMINAL BLOCK WITH MINI BLADE FUSE HOLDER	MPFA.4/GR	70421804	CABUR
FU5	MINI BLADE FUSE 7.5A	0600120	70400245	MTA
FU5	TERMINAL BLOCK WITH MINI BLADE FUSE HOLDER	MPFA.4/GR	70421804	CABUR
FU6	FUSE 10,3X38 10A gG	5400110	70400306	WIMEX
FU6	FUSE HOLDER 2P 10.3X38 DIN BAR	5450103S	70450835	WIMEX
FU8	FUSE HOLDER 1P 10.3X38 DIN BAR	5450101S	70450833	WIMEX
FU9	FUSE HOLDER 1P 10.3X38 DIN BAR	5450101S	70450833	WIMEX
G1	OMEGA PROFILE 3F H. 7,5	PR/3/AS/ZB	70421806	CABUR
G2	OMEGA PROFILE 3F H. 7,5	PR/3/AS/ZB	70421806	CABUR
G3	OMEGA PROFILE 3AF H.15	PR/3/PA/ZB	70421807	CABUR
Q1	OPERATION - BLACK PADLOCKABLE KNOB D 67	011/0001	70300205	GIOVENZANA
Q1	DISCONNECT SWITCH 32A 2-POLE	SE3210F2B	70300204	GIOVENZANA
S1	KEY-OPERATED 3-POS. SELECTOR EXTRACTABLE ON 1-0-2	1SFA611283R1001	70100870	ABB
S1	3-CONTACT FASTENING SUPPORT	1SFA611605R1100	70100887	ABB
S1	NO CONTACT	1SFA611610R1001	70100886	ABB
S1	NC CONTACT	1SFA611610R1010	70100885	ABB
SA	BLACK START PUSHBUTTON PU-NA/1340	1026151	70551101	COBO
SB	BLACK START PUSHBUTTON PU-NA/1340	1026151	70551101	COBO
SC1	CONTROL UNIT P/C-SMART12845	40242313	40242313	ELCOS
V1	CONNECTION 50A 400V KBPC5004FP	70651118	70651118	ELCOS
X1	EARTHING STUDS	TEC.6/O	70421783	CABUR
X4	FEED-THROUGH TERMINAL BLOCK	CBC.2/GR	70421782	CABUR
X5	DOUBLE-LEVEL TERMINAL BLOCK	HMD.2N/CI/GR	70421800	CABUR

SNFE-1213/50 12V				
CBS A	BATTERY CHARGER P/CBS-031 12V	40010440	40010440	ELCOS
CBS B	BATTERY CHARGER P/CBS-031 12V	40010440	40010440	ELCOS
FU1	MINI BLADE FUSE 7.5A	0600120	70400245	MTA
FU2	MINI BLADE FUSE 7.5A	0600120	70400245	MTA
FU8	FUSE 10,3X38 2A gG	5400102	70400302	WIMEX
FU9	FUSE 10,3X38 2A gG	5400102	70400302	WIMEX
K1	RELAY AV-10 12V 500A	AV-10	40340349	ELCOS
K2	RELAY AV-10 12V 500A	AV-10	40340349	ELCOS
K3	RELAY AV-04 12V 80A	40340343	40340343	BOSCH
K4	RELAY AV-04 12V 80A	40340343	40340343	BOSCH
K5	RELAY AV-04 12V 80A	40340343	40340343	BOSCH

SNFE-1213/80 12V				
CBS A	BATTERY CHARGER P/CBS-031 12V	40010440	40010440	ELCOS
CBS B	BATTERY CHARGER P/CBS-031 12V	40010440	40010440	ELCOS
FU1	MINI BLADE FUSE 7.5A	0600120	70400245	MTA
FU2	MINI BLADE FUSE 7.5A	0600120	70400245	MTA
FU8	FUSE 10,3X38 2A gG	5400102	70400302	WIMEX
FU9	FUSE 10,3X38 2A gG	5400102	70400302	WIMEX
K1	RELAY AV-45 12V 800A	AV-45	40340355	ELCOS
K2	RELAY AV-45 12V 800A	AV-45	40340355	ELCOS
K3	RELAY AV-04 12V 80A	40340343	40340343	BOSCH
K4	RELAY AV-04 12V 80A	40340343	40340343	BOSCH
K5	RELAY AV-04 12V 80A	40340343	40340343	BOSCH

SNFE-1216/80 12V				
CBS A	BATTERY CHARGER P/CBS-061 12V	40010444	40010444	ELCOS
CBS B	BATTERY CHARGER P/CBS-061 12V	40010444	40010444	ELCOS
FU1	MINI BLADE FUSE 10A	0600130	70400246	MTA
FU2	MINI BLADE FUSE 10A	0600130	70400246	MTA
FU8	FUSE 10,3X38 4A gG	5400104	70400304	WIMEX
FU9	FUSE 10,3X38 4A gG	5400104	70400304	WIMEX
K1	RELAY AV-45 12V 800A	AV-45	40340355	ELCOS
K2	RELAY AV-45 12V 800A	AV-45	40340355	ELCOS
K3	RELAY AV-04 12V 80A	40340343	40340343	BOSCH
K4	RELAY AV-04 12V 80A	40340343	40340343	BOSCH
K5	RELAY AV-04 12V 80A	40340343	40340343	BOSCH

SNFE-1216/80 24V				
CBS A	BATTERY CHARGER P/CBS-061 24V	40010445	40010445	ELCOS
CBS B	BATTERY CHARGER P/CBS-061 24V	40010445	40010445	ELCOS
FU1	MINI BLADE FUSE 10A	0600130	70400246	MTA
FU2	MINI BLADE FUSE 10A	0600130	70400246	MTA
FU8	FUSE 10,3X38 4A gG	5400104	70400304	WIMEX
FU9	FUSE 10,3X38 4A gG	5400104	70400304	WIMEX
K1	RELAY AV-45 24V 800A	AV-45	40340356	ELCOS
K2	RELAY AV-45 24V 800A	AV-45	40340356	ELCOS
K3	RELAY AV-08 24V 60A	40340344	40340344	BOSCH
K4	RELAY AV-08 24V 60A	40340344	40340344	BOSCH
K5	RELAY AV-08 24V 60A	40340344	40340344	BOSCH

TECHNICAL SPECIFICATIONS			
Mains inputs			
Mains system			Single phase
Rated mains voltage			230 Vac ± 10 %
Mains frequency			(50 ÷ 60) Hz
Maximum power input (without heater)	SNFE-1213/50 12 V, SNFE-1213/80 12 V		120 W
	SNFE-1216/80 12 V		220 W
	SNFE-1216/80 24 V		440 W
Rated insulation voltage	Terminal board at mains voltage		450 Vac
	Low voltage aux services terminal block		32 Vac
Insulation class			CLASS 1
Overvoltage category			CATEGORY 3
Max. impedance in the fault ring in the point of panel installation			2,5 Ω
Plant system to wich it is connected			TN-TT-IT
Battery input			
Rated charging voltage per battery	SNFE-1213/50 12 V, SNFE-1213/80 12 V		13,7 Vdc ±4%
	SNFE-1216/80 12 V		13,7 Vdc ±4%
	SNFE-1216/80 24 V		27,4 Vdc ±4%
Operating range	SNFE-1213/50 12 V, SNFE-1213/80 12 V		(8 ÷ 35) Vdc
	SNFE-1216/80 12 V		(8 ÷ 35) Vdc
	SNFE-1216/80 24 V		(16 ÷ 35) Vdc
Maximum use per battery with engine stopped, with no mains	SNFE-1213/50 12 V, SNFE-1213/80 12 V		205 mA
	SNFE-1216/80 12 V		208 mA
	SNFE-1216/80 24 V		146 mA
Maximum charging current per battery, with mains	SNFE-1213/50 12 V, SNFE-1213/80 12 V		3,5 A ±4%
	SNFE-1216/80 12 V		6 A ±4%
	SNFE-1216/80 24 V		6 A ±4%
Heater output			
Rated voltage			230 Vac
Maximum power			2 kVA
Digital outputs			
Clamps X6-3	Output type		BATT+A, BATT+B
	Maximum peak load	SNFE-1213/50, SNFE-1216/50	500 A
		SNFE-1213/80, SNFE-1216/80	800 A
	Maximum continuous load	SNFE-1213/50, SNFE-1216/50	200 A
SNFE-1213/80, SNFE-1216/80		200 A	
Clamps CON1-6	Output type		BATT+
	Maximum load		3 A
Clamps CON1-8	Output type		BATT+
	Maximum load		3 A
Clamps OUT.4 ÷ 8	Output type		C-NC-NO clean contact
	Maximum load		3 A
	Maximum applicable voltage		48 Vdc, 250 Vac
Clamps OUT.1	Output type		C-NC-NO clean contact
	Maximum load		3 A
	Maximum applicable voltage		48 Vdc, 65 Vac
Environmental conditions			
Operating temperature			(-5 ÷ 40) °C
Storage temperature			(-10 ÷ 50) °C
Maximum relative humidity			≤ 50% @ 40 °C
Max altitude			2000 m s.l.m.
Panel dimensions			
H x L x W			(500 x 400 x 200) mm
Protection class			
Degree of protection			IP55
Installation conditions			Wall for internal use
Panel weight			
SNFE-1213/50 12 V			18,5 Kg
SNFE-1213/80 12 V			18,5 Kg
SNFE-1216/80 12 V			18,5 kg
SNFE-1216/80 24 V			18,5 Kg

MAINS CONNECTIONS

The panel connection must be made with the MAINS DISENGAGED and the BATTERY DISCONNECTED, according to wiring diagram provided in this manual.

The panel must be connected to the existing earthing ear unit, in compliance with current regulations

- 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 $I_{cc} < 17\text{kA}$.

Since the system (TN-TT-IT) to which this fire-fighting pump control panel will be connected is unknown, as is unknown the earth resistance of the system itself, the panel does not come with protection devices against indirect contact. 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).

BEFORE SUPPLYING VOLTAGE:

- Make sure that the live parts are inaccessible.
- Check the earth connection.

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

- Inside installations where the current throughput or interruption power could be influenced by certain conditions (e.g equipment incorporated in machinery).

NOTICES

The panel carries out exclusively the automatic control and monitoring functions of a fire motor pump unit, keeps the batteries charged.
Built for wall in a closed installation.

Warning: parts carrying dangerous voltage

Attention: carefully observe the following recommendations

- All technical interventions on the motorpump must be performed with the engine stationary and terminal 50 of the start motor disconnected.
- 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
- Always install the device at a lower position than any other devices that produce or dissipate heat.
- Some internal parts of the battery charger reach temperatures that could cause burns.
- The equipment must be earthed via the relevant terminal.
- Handle and connect the unit without mechanically stressing the electronic control unit.
- 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.
- Never disconnect the battery terminals while the engine is running.
- Strictly avoid using a battery charger for emergency start-up; this could damage the control unit.
- To safeguard people and equipment, always disconnect the electrical system terminals from the battery poles before connecting an external battery charger.

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;

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.

RUNNING AND MAINTENANCE



WARNING: PARTS CARRYING DANGEROUS VOLTAGE

The following maintenance operations should be performed each week:

- Automatic start with switching;
- Check that indicators function;
- Checking the battery status .

It is advisable to perform the following voltage-free operations:

- check that the conductors are tight, check the condition of the terminals;
- visual inspection of the connections and the markings;
- visual inspection of the equipment.

The opening of the panel for whatever reason, including manual mains-genset switching without turning off the power to the panel, implies the performance of work in the "vicinity zone" under the standard EN 50110-1, and therefore must only be performed by electrically "instructed" or "skilled" personnel and in compliance with the procedures under the standard itself.

NOTE CONCERNING CONNECTION OF COMMAND AND SAFETY DEVICES TO THE PANEL

With the direct connection of engine protection probes and remote control and command contacts to the control switch-board, particular anomalous situations (earth anomalies or interruption of electrical connections) could block the start-up or provoke its early activation. To reduce these risks, if he believes it to be necessary, the installer can take on the responsibility of applying that which is described in paragraphs 9.4.2.1 and 9.4.2.2 of standard CEI EN60204-1 (CEI 44-5) to the said connections.

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

DATI FOR ORDERING

Type	Code
SNFE-1213/50 12 V	00023015
SNFE-1213/80 12 V	00023017
SNFE-1216/80 12 V	00023019
SNFE-1216/80 24 V	00023020

SUPPLIED ACCESSORIES

Type
Kit fixing rods

CONFORMITY



Алматы (7273)495-231
Ангарск (3955)60-70-56
Архангельск (8182)63-90-72
Астрахань (8512)99-46-04
Барнаул (3852)73-04-60
Белгород (4722)40-23-64
Благовещенск (4162)22-76-07
Брянск (4832)59-03-52
Владивосток (423)249-28-31
Владикавказ (8672)28-90-48
Владимир (4922)49-43-18
Волгоград (844)278-03-48
Вологда (8172)26-41-59
Воронеж (473)204-51-73
Екатеринбург (343)384-55-89

Иваново (4932)77-34-06
Ижевск (3412)26-03-58
Иркутск (395)279-98-46
Казань (843)206-01-48
Калининград (4012)72-03-81
Калуга (4842)92-23-67
Кемерово (3842)65-04-62
Киров (8332)68-02-04
Коломна (4966)23-41-49
Кострома (4942)77-07-48
Краснодар (861)203-40-90
Красноярск (391)204-63-61
Курск (4712)77-13-04
Курган (3522)50-90-47
Липецк (4742)52-20-81

Магнитогорск (3519)55-03-13
Москва (495)268-04-70
Мурманск (8152)59-64-93
Набережные Челны (8552)20-53-41
Нижний Новгород (831)429-08-12
Новокузнецк (3843)20-46-81
Ноябрьск (3496)41-32-12
Новосибирск (383)227-86-73
Омск (3812)21-46-40
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