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
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
Рязань (4912)46-61-64
Самара (846)206-03-16
Саранск (8342)22-96-24
Санкт-Петербург (812)309-46-40
Саратов (845)249-38-78
Севастополь (8692)22-31-93
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
Тамбов (4752)50-40-97
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

Россия +7(495)268-04-70 **Казахстан** +7(7172)727-132 **Киргизия** +996(312)96-26-47

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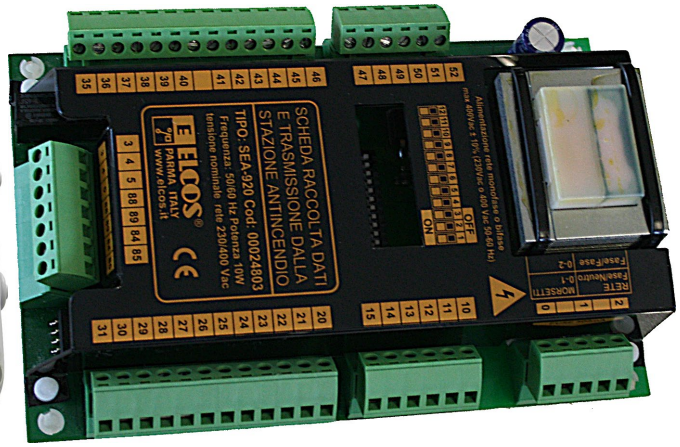
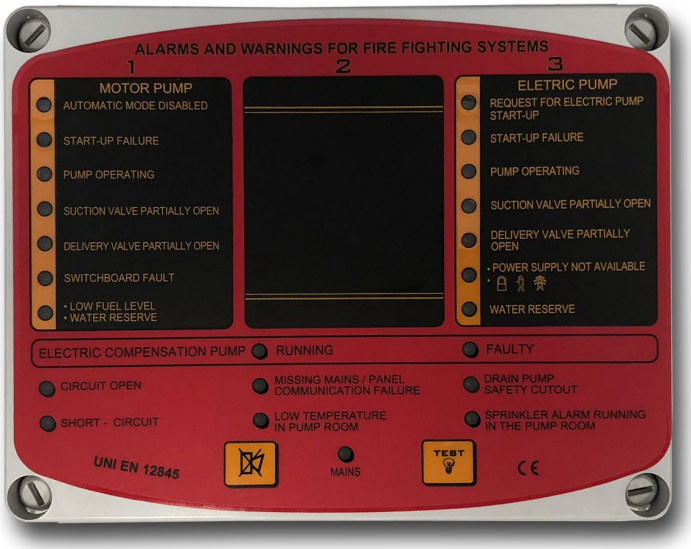
Технические характеристики на панели сигнализации и оповещения, пульты сбора данных NFE-919/10, NFE-920/10, NFE-921/10, SEA-920/10, NFE-920/10, NFE-921/10, SEA-920/10 компании ELCOS

NFE-920/10
SEA-920/10
NFE-921/10

Complete alarm and signal monitoring system for fire-fighting systems in compliance with UNI EN 12845.

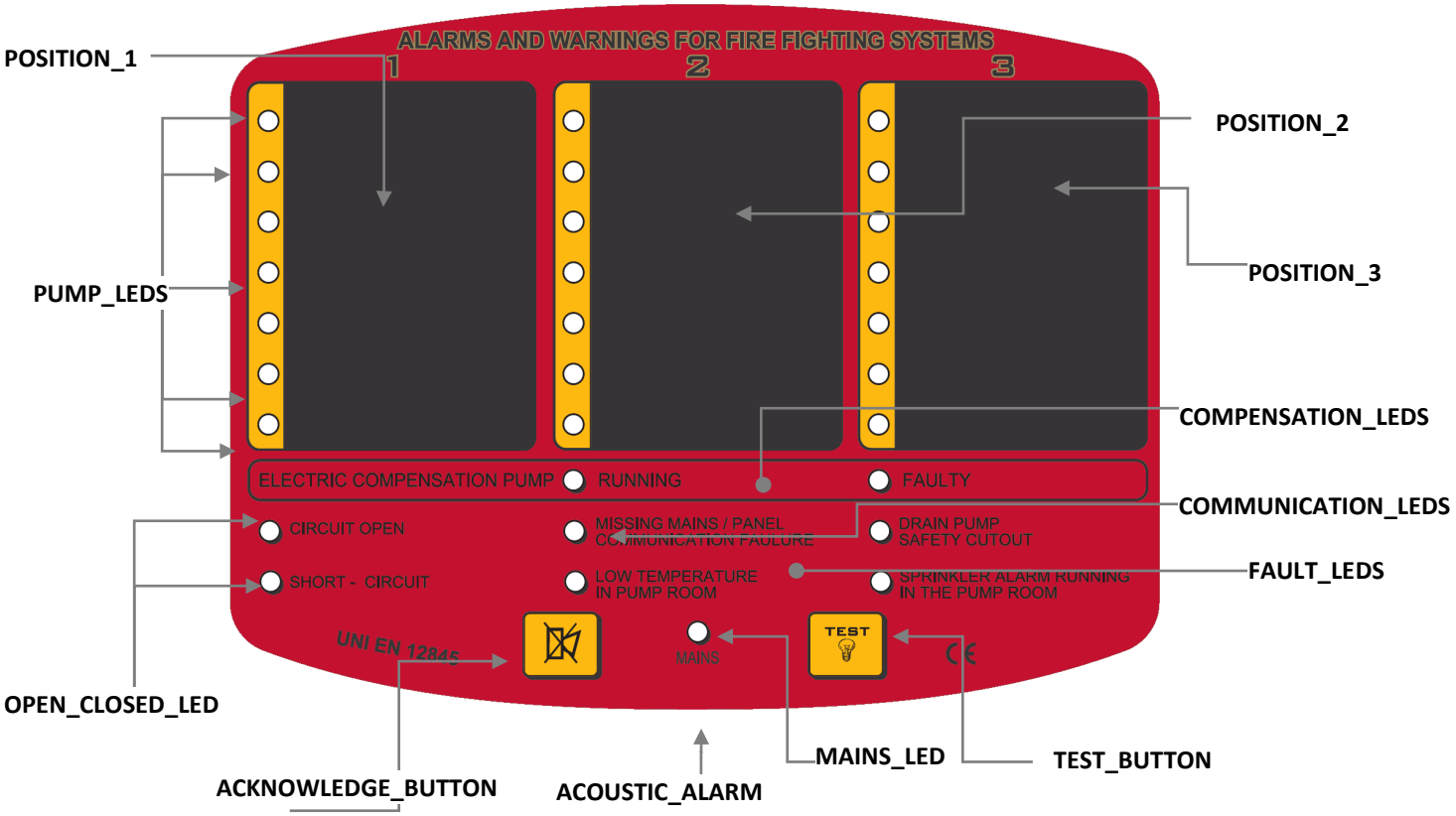




Date	Revision	Description	Page
31/10/2018	1.00	First release	
12/11/2018	1.10	Integrations	
14/01/2019	1.11	Description terminal 90: modified	4
12/10/2020	1.2	NFE-930 option removed	
10/03/2021	1.3	Prodotto/10	

CONTENTS

INSTRUCTIONS IN BRIEF



X_POSITION: apply the sticker for the corresponding pump, illustrating the meaning of the LEDs.
PUMP_LEDS: X pump signal LEDs. When the LEDs all flash together, this signals that the X pump is not communicating with the data collection device.
OPEN_CLOSED_LEDS: these LEDs signal the type of fault on the contact.
ACKNOWLEDGE_BUTTON: silences the acoustic alarm.
ACOUSTIC_ALARM: it is activated by an alarm.
MAINS_LED: this LED signals that the mains voltage is present.
TEST_BUTTON: runs the LED test.
FAULT_LEDS: these LEDs signal a fault on the system components.
COMPENSATION_LEDS: these LEDs signal the status of the compensation electric pump.
COMMUNICATION_LEDS: these LEDs signal that there is no communication with the collection panel.

OPERATION

The system consists of a DATA COLLECTION device and an ALARM AND SIGNAL PANEL (NFE-921/10). The data collection device can be supplied as a BOARD to be assembled inside a control panel (SEA-920/10) or as a CONTROL PANEL (NFE-920/10).
The two devices communicate with each other through a cable (NFE-920/10-SEA-920/10, NFE-921/10).
The data collection device communicates with the FIRE-FIGHTING MOTOR PUMP/ ELECTRIC PUMP CONTROL PANELS via a serial RS485 connection and controls the other system devices through contacts.
The alarm and signal panel remotely monitor the alarms and signals of a PUMP COMPARTMENT in a PERMANENTLY ATTENDED LOCATION.

COMPATIBILITY

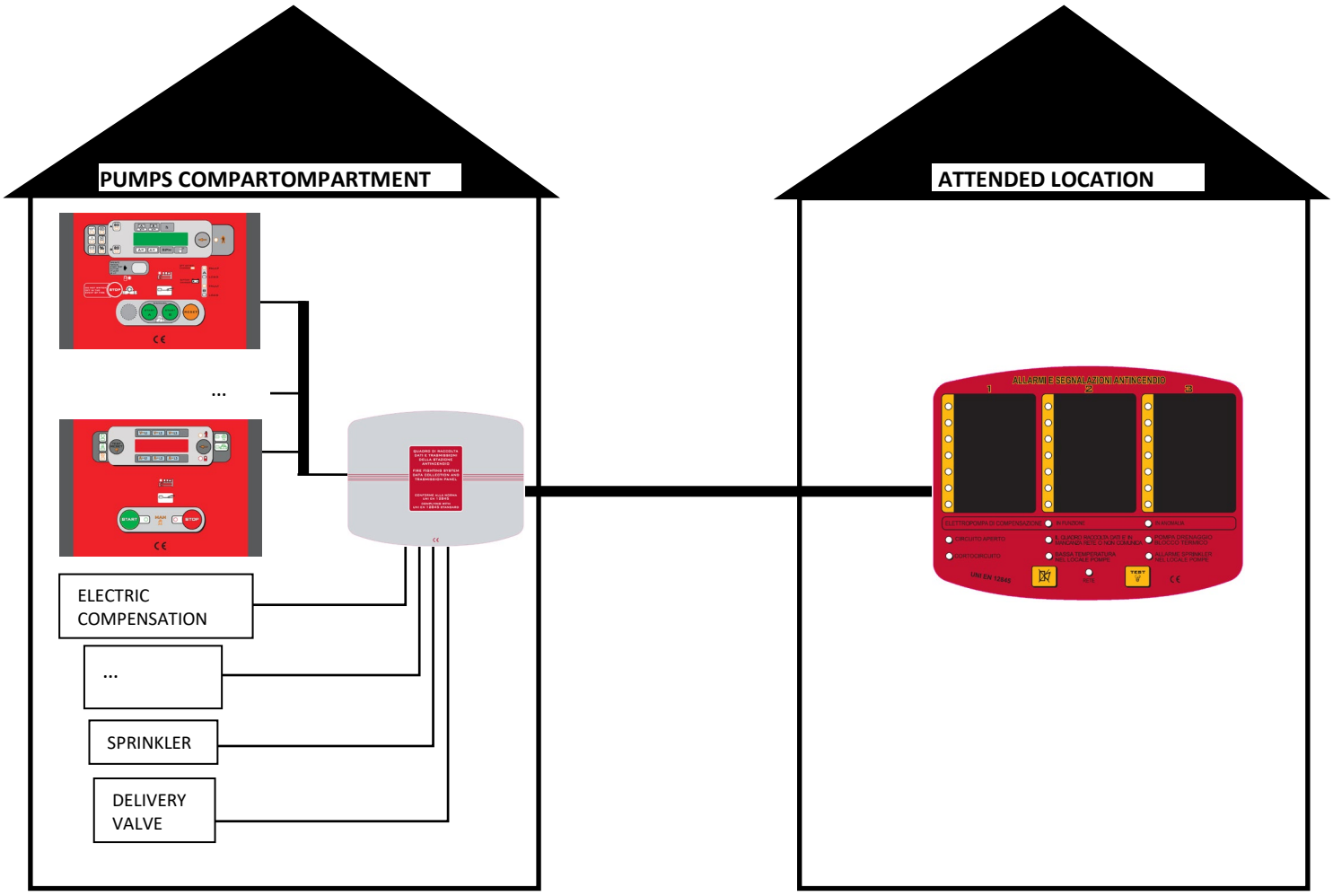
The system is compatible with the following types of control units:

Electric pumps	CEA-12845-485, CEA-025-485, CEA-SMART12845, CEA-SMART023, CEA-SMART024
Motor pumps	C-12845-485,C-12845/1200, C-SMART12845, C-SMART12845/1200

The previous model did not manage SMART control units.

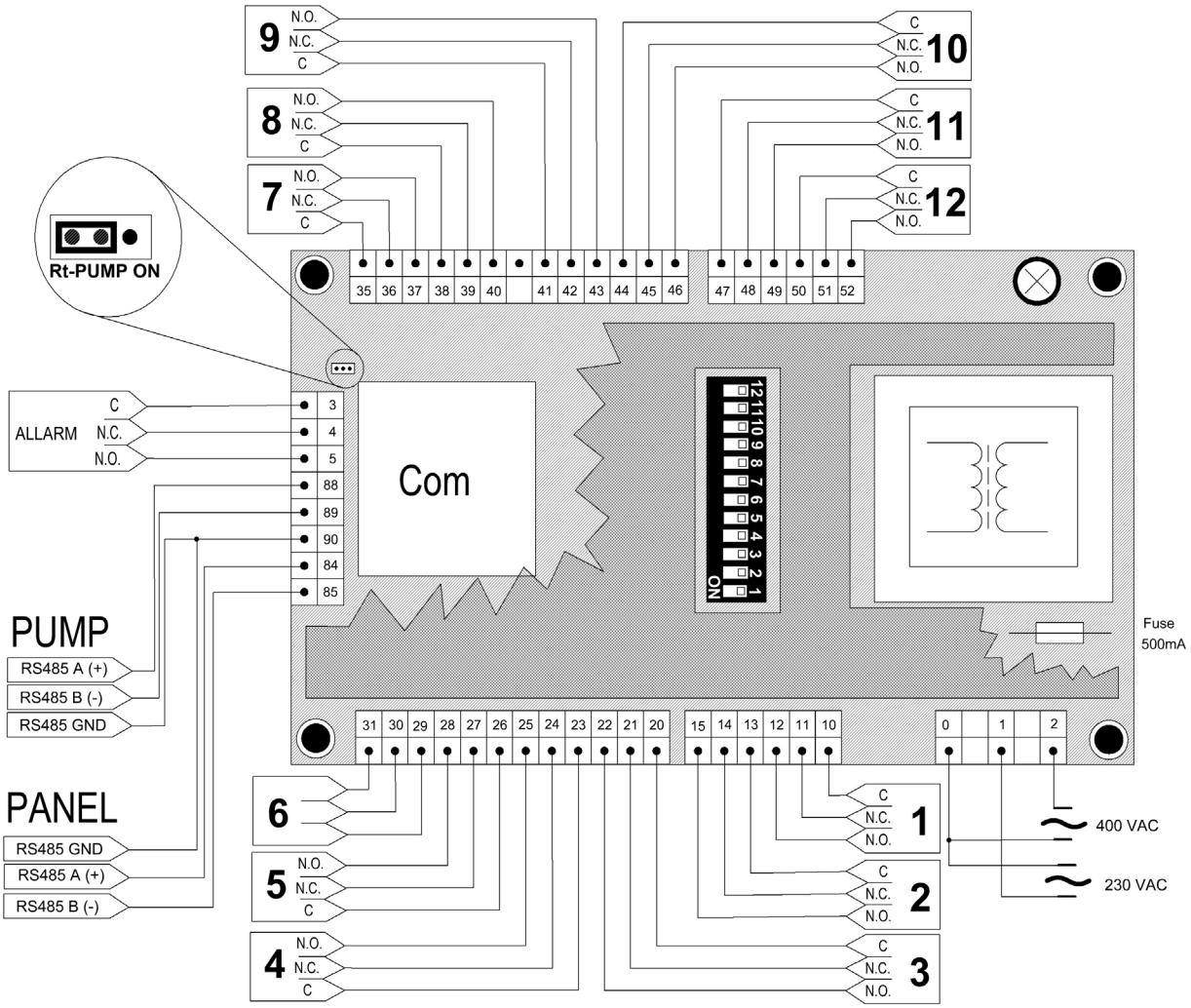
SYSTEM

The system involves a structure with a PUMP COMPARTMENT, with pumps and control panels, and an ATTENDED LOCATION, where the monitoring devices are installed. Communication between the two environments can take place via cable (920/921):



DATA COLLECTION DEVICE

Below is a diagram of the internal board with relative connections:



Terminal 90 located in different position in some revisions.

POWER SUPPLY

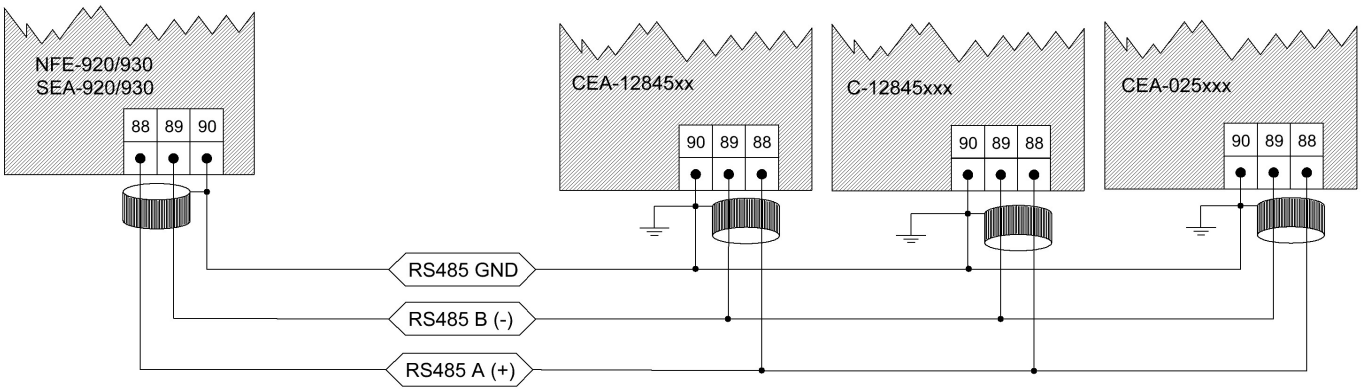
With a 230 VAC power supply, connect terminals 0-1; with a 400 VAC power supply, connect terminals 0-2. A 500 mA protection fuse is inserted on the circuit board.

ALARM

Terminals 3, 4, 5 have an alarm output (relay), which is active at the same time as the acoustic signal.

PUMP DATA LINE

For data connection between the various control units, use a LINEAR STRUCTURE that is no more than 500 m in length and made of twisted, two-conductor data transmission cable: 22-24 AWG (0.20-0.34 mm^2) PLTC/CM, impedance Z0 = 120 W. If a shielded cable is used, earth the sheath on the pump side. Connect the signals (in the PUMP figure above) in the same positions on the various control units. See the figure below.



The inclusion of the pump line termination resistor is indicated in the figure: Rt-PUMP (factory fitted).

PUMPING SYSTEM COMPONENTS

The various components of the pumping system can be connected to the data collection control unit using dry contact connections. The connection can be made in two ways:

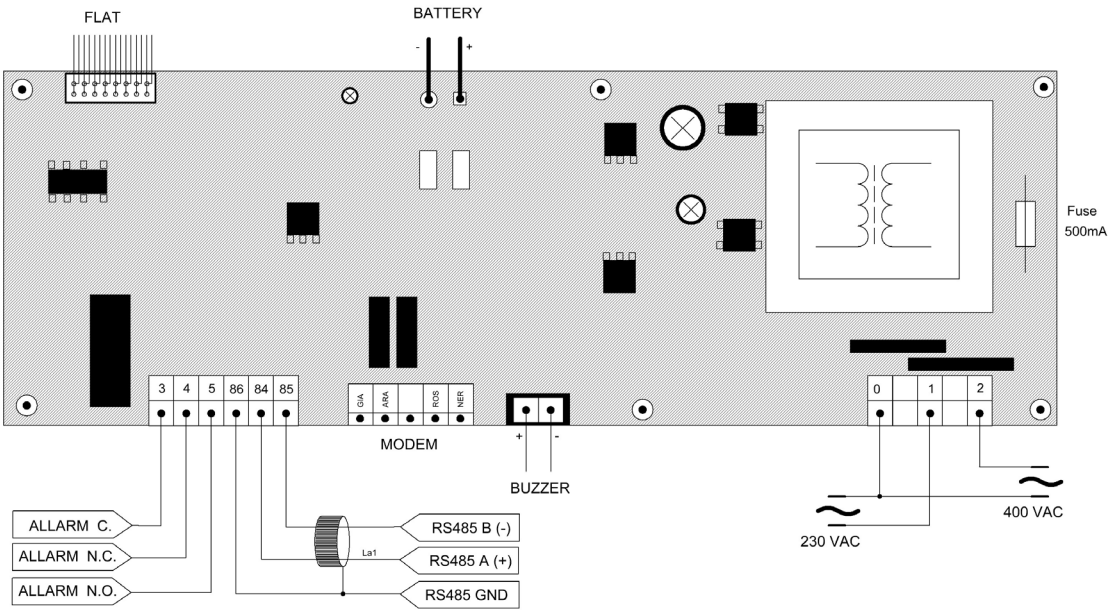
- 3 WIRES: NC/NO C. complete control
  NO C. (NC insulated): the relative LED SWITCHES ON.
  NC C. (NO insulated): the relative LED SWITCHES OFF.
  NO-NC C.: the relative LED FLASHES and the SHORT-CIRCUIT LED flashes
  Insulated NC/NO C.: the relative LED FLASHES and the OPEN CIRCUIT LED flashes
- 2 WIRES: NO C. control during closure
  NO C.: the related LED switches ON.

Every input is associated with a DIP-SWITCH: lever ON = 2 WIRE control; LEVER off = 3 WIRE control.
The monitored signals are:

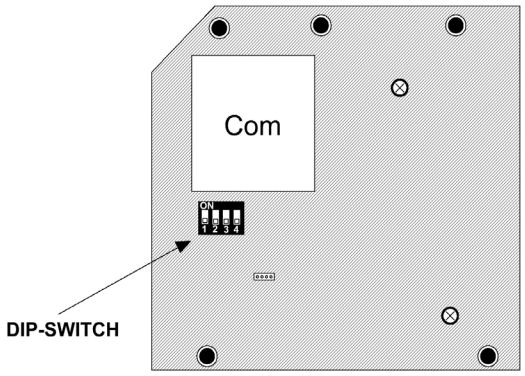
FUNCTION	C	NC	NO	DIP-SWITCH
ELECTRIC COMPENSATION PUMP RUNNING	10	11	12	1
ELECTRIC COMPENSATION PUMP FAULT	13	14	15	2
DRAINAGE PUMPS THERMAL TRIP	20	21	22	3
SPRINKLER ALARM IN PUMP COMPARTMENT	23	24	25	4
LOW TEMPERATURE IN PUMP COMPARTMENT	26	27	28	5
Not used	29	30	31	6
Pump 1: DELIVERY VALVE PARTIALLY OPEN	35	36	37	7
Pump 1: INTAKE VALVE PARTIALLY OPEN	38	39	40	8
Pump 2: DELIVERY VALVE PARTIALLY OPEN	41	42	43	9
Pump 2: INTAKE VALVE PARTIALLY OPEN	44	45	46	10
Pump 3: DELIVERY VALVE PARTIALLY OPEN	47	48	49	11
Pump 3: INTAKE VALVE PARTIALLY OPEN	50	51	52	12

SIGNALLING DEVICES

The signalling device contains two boards, one on the bottom:



and one on the back of the cover:



POWER SUPPLY

With a 230 VAC power supply, connect terminals 0-1; with a 400 VAC power supply, connect terminals 0-2. A 500 mA protection fuse is inserted on the circuit board.

BATTERY

There are a battery and a battery charger inside the panel to ensure monitoring even in case of a power outage. After completing the installation connections, connect the red wire (+) to the internal battery terminal.
When the panel is powered by the battery and the voltage falls below 7V, a forced shut down is triggered to avoid damaging the battery.

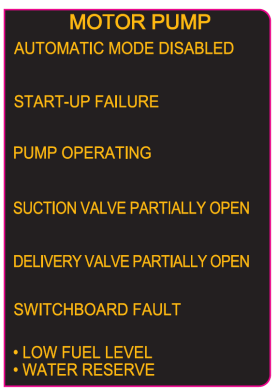
ALARM

Terminals 3, 4, 5 have an alarm output (relay), which is active at the same time as the acoustic signal.

SYSTEM COMPOSITION

Completion of the main panel requires choosing the desired composition and applying the pertinent labels in the appropriate spaces to indicate a motor pump or electric pump. To arrange the system by installing a pump in the X position (1, 2 or 3), settings must be made using the dip-switches on the board located at the back of the front panel.

1. Set dip-switch 4 to OFF.
2. Apply the adhesive in the X position
3. Set the X CIRCUIT BOARD ADDRESS in the control unit
4. Move the X dip-switch lever to ON: when the lever is set to ON, the pump is present

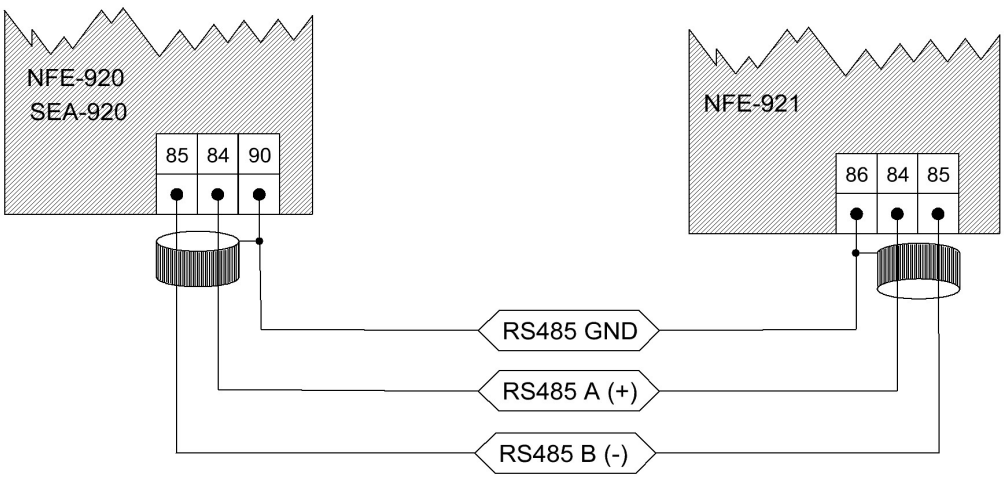


In the previous version of the device, the implant conformation system was different.

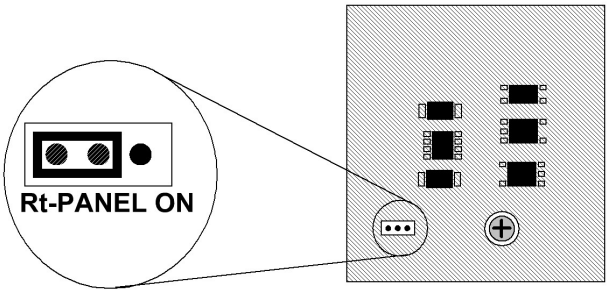
SYSTEM DATA LINE

NFE-92x

To connect the RS485 data line between the two devices, proceed as follows:



Twisted two-conductor data transmission cable with a 500 m maximum length: 22-24 AWG (0.20-0.34 mm^2) PLTC/CM, impedance Z0 = 120 W.
These models feature the RS-485 communication interface (**Com** in the figures above) where the line termination resistor can be inserted if necessary. No setting is required.



MODEM (on request)

The modem sends a text message to one or more telephone numbers (maximum 3) if a fault is detected by the FIRE-FIGHTING SIGNAL AND ALARM PANEL. The message texts, and the telephone numbers, can be modified by the users using the dedicated software provided.
The alarms are grouped into LEVEL A and LEVEL B:

ALARM A	ALARM B
PUMPS RUNNING	AUTOMATIC MODE OFF
SPRINKLER ALARM IN PUMP ROOM	STARTING FAILURE
	INTAKE VALVE PARTIALLY OPEN
	DELIVERY VALVE PARTIALLY OPEN
	CONTROL PANEL FAULT
	MINIMUM FUEL LEVEL
	WATER STORAGE TANK
	ELECTRIC PUMP START REQUEST
	ELECTRICITY POWER SUPPLY NOT AVAILABLE
	DRAINAGE PUMP THERMAL TRIP
	LOW TEMPERATURE IN PUMP ROOM
	CIRCUIT OPEN/SHORT-CIRCUIT
	CONTROL PANEL NOT COMMUNICATING
	PUMPS NOT COMMUNICATING
	ELECTRIC COMPENSATION PUMP FAULT

TECHNICAL FEATURES

Mains power supply	230 – 400 Vac ± 10% 50 – 60 Hz
Absorption	0.1 A ac
Contact capacity (Terminals 3-4-5)	Max 5 A, 25 Vac, 60 Vdc
Rated insulation voltage	400 V
Battery	12 V, 1.2 Ah lead-acid, sealed, Faston contacts
Acoustic alarm signal level	75 dB at 30 cm 12 VDC
Battery life	5 hours
Operating temperature	-10 to 50 °C
Storage temperature	-20 to 60°C
Relative humidity	50% at 40 °C
Altitude	MAX 2000 m a.s.l.
Control panel installation conditions (NFE-9xx)	Wall mounted for outdoor use
Control board installation conditions (SEA-9xx)	Inside a control panel only
Protection rating of data collection control panel and alarm panel (NFE-920)	IP54
Protection rating of data collection board (SEA-920)	IP00
Weight of data collection control panel	1.5 kg
Weight of alarm panel	2 kg
Weight of data collection board (SEA-920)	0.760 Kg
DATA COLLECTION PANEL OF ALARMS PANEL (LxHxD)	254x200x100 mm
Data collection board (SEA) (LxHxD)	170x118x57 mm

WARNINGS

The device serves to display the alarms sent by the control panels of motor pump and electric fire pump units.

Warning: Parts powered with dangerous voltages
The control panel can only be accessed by specifically assigned, duly trained personnel. Maintenance and function programming must be performed only when the system is disconnected from the mains. As an additional protection measure, we recommend grounding the system phases. Notwithstanding the above, only specifically assigned, duly trained personnel can perform the following operations with the system powered:
- visual inspection of the panel connections and markings;
- taking voltage and/or current measurements

These tasks must always be performed using equipment that ensures appropriate electrical protection.

Warning:
Carefully observe the following recommendations
- Always make connections following the wiring diagram.
- Check that consumption of the connected devices is in line with the described technical characteristics.
- Install so that adequate heat dissipation is always achieved.
- Always install it in a position lower than other units that produce or dissipate heat.
- Handle and connect without exposing the electronic circuit board to mechanical strain.
- Do not let cuttings of copper conductors or other metal residues drop onto the circuit board.
- If necessary, replace the fuses only with the same type as the original fuse.
- The installer must ensure protection against direct/indirect contact according to current legislation concerning electrical systems using up to 1000 V in AC and 1500 V in DC (for Italy CEI 64-8).

THIS MONITORING SYSTEM IS NOT DESIGNED TO OPERATE UNDER THE FOLLOWING CONDITIONS:
- Ambient temperatures exceeding the limits specified in the technical data sheet
- Variations in temperature and air pressure that are so abrupt as to produce exceptional condensation
- Strong pollution from dust, fumes, vapours, salts and corrosive or radioactive particles
- Strong heat radiation due to direct sunlight, ovens or the like
- Possible attack of mould or small pests
- Risk of fire or explosion
- Transmission of strong shocks or vibrations to the control panel

ELECTROMAGNETIC COMPATIBILITY
This monitoring system works correctly only if it is installed in systems that comply with regulations governing CE marking. In fact, it complies with the immunity requirements given in standard EN 61326-1. However, this does not rule out the possibility that malfunctions could occur in extreme cases, which may arise in particular situations. The installer is responsible for checking that the degree of perturbation does not exceed that required by the standards.

OPERATION AND MAINTENANCE
The following weekly maintenance operations are recommended:
- Signal operation checks
- Battery status checks
- Conductor tightness and terminal status checks.

IN THE ABSENCE OF OUR WRITTEN DECLARATION ATTESTING TO THE CONTRARY, THIS MONITORING SYSTEM IS NOT SUITABLE FOR USE AS A CRITICAL COMPONENT IN EQUIPMENT OR SYSTEMS VITAL TO THE LIFE OF PEOPLE AND OTHER LIVING THINGS.

INFORMATION FOR ORDERING

NFE-920/10 _____ Code 00022106

SEA-920/10 _____ Code 00024805

NFE-921/10 _____ Code 00022107

STANDARD ACCESSORIES

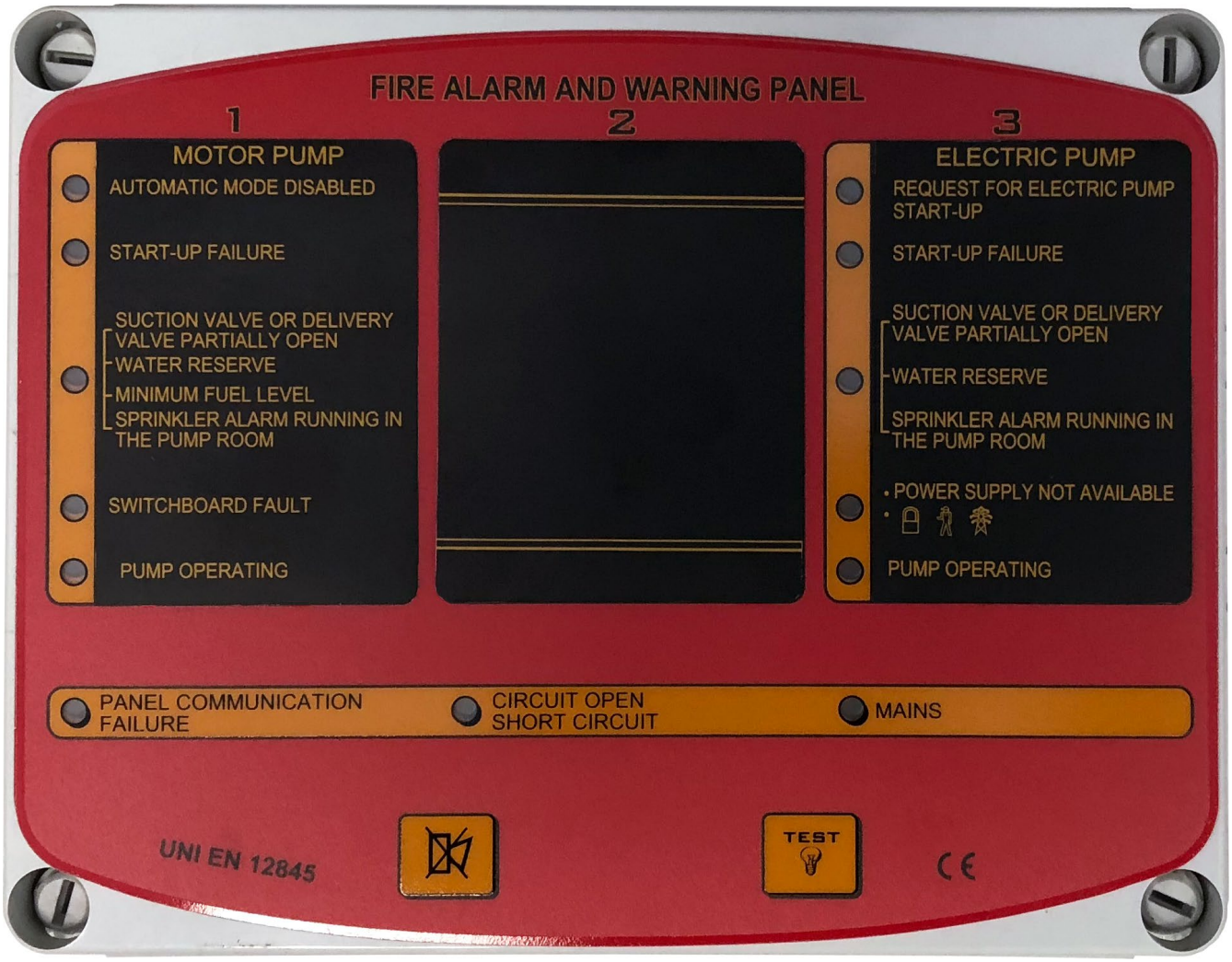
KIT MU + securing brackets for NFE-919/21/31. _____ Code 40804521

KIT of jumpers for NFE-920 _____ Code 40750688

KIT of adhesive plates to be applied on alarm and signalling panel _____ Code 70839735

NFE-919/10

Alarms monitoring and simplified signalling device for fire-fighting systems compliant with UNI EN 12845.



CE

Date	Revision	Description	Page
31/10/2018	1.0	First release	
08/11/2018	1.1	Modem Insertion	
05/12/2018	1.2	LEDs descriptions	
11/06/2019	1.3	2 panels installed	
10/03/2021	1.4	Prodotto /10	

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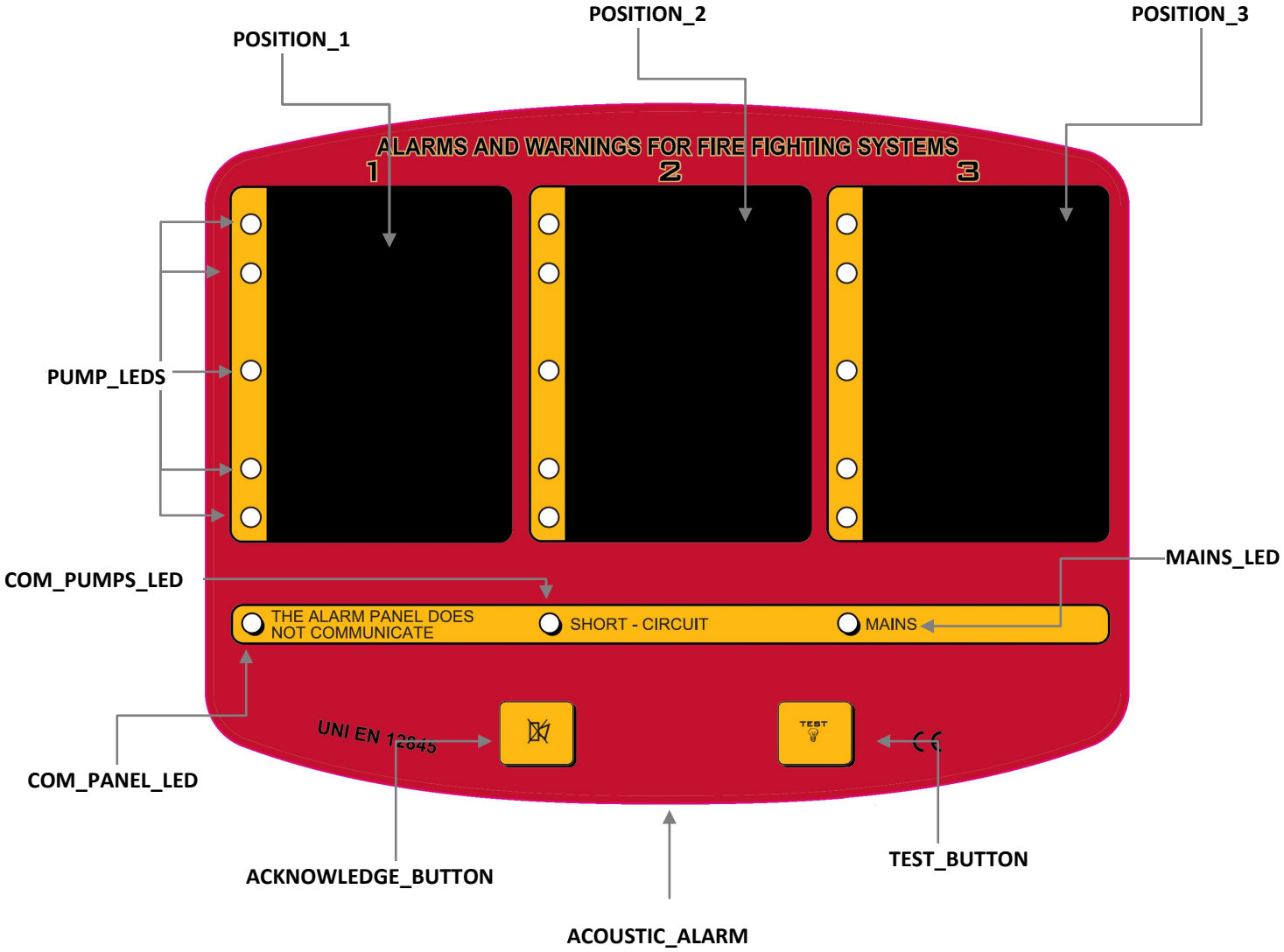
INSTRUCTIONS IN BRIEF



POSITION_X: Apply the sticker for the corresponding pump, indicating the meaning of the LEDs.
PUMP_LEDS: LED indicators for the X pump, all column blinking means no communication to the pump X.
COM_PUMPS_LED: If blinks means no communication whit all pumps (serial line is open or short-circuit).
COM_PANEL_LED: If blinks means no communication between NFE main panel and NFE secondary panel (if installed).
ACKNOWLEDGE_BUTTON: Silences the acoustic alarm.
TEST_BUTTON: Runs the LED test.
MAINS_LED: Indicates the state of the mains power supply.
ACOUSTIC_ALARM: It is activated by an alarm.

OPERATION

The NFE-919/10 communicates with the MOTOR PUMP CONTROL PANEL or the ELECTRIC FIRE-FIGHTING PUMP CONTROL PANEL via an RS485 serial connection. The panel serves to remotely monitor alarms and signals from a fire-fighting PUMPS COMPARTMENT in a PERMANENTLY ATTENDED LOCATION.

COMPATIBILITY

The NFE-919/10 is compatible with the following types of control units:

Electric pumps	CEA-12845-485, CEA-025-485, CEA-SMART12845, CEA-SMART023, CEA-SMART024
Motor pumps	C-12845-485,C-12845/1200, C-SMART12845, C-SMART12845/1200

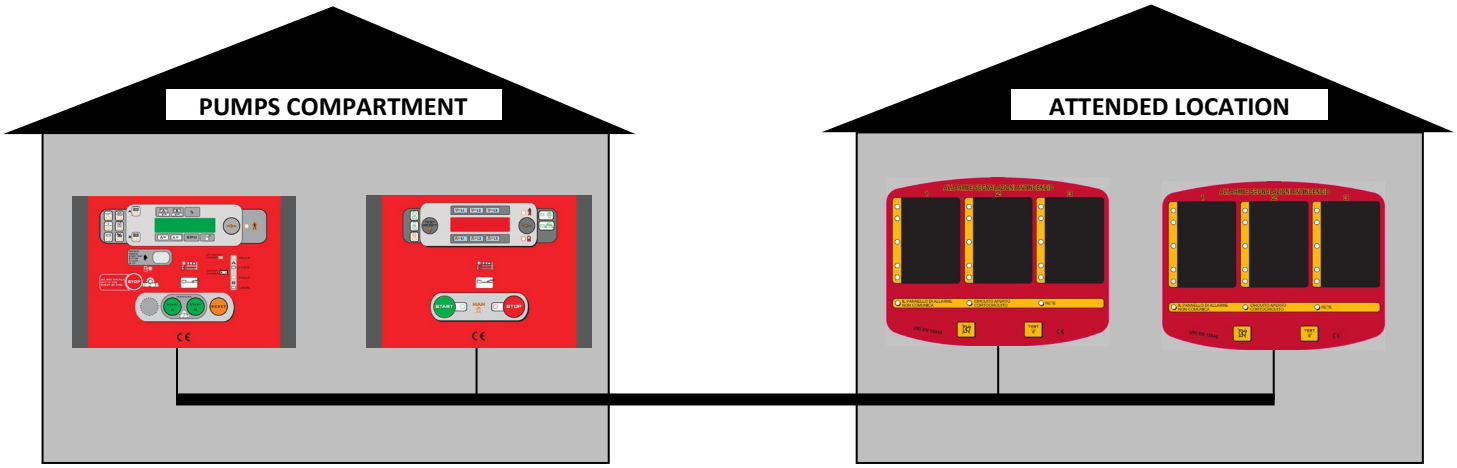
The previous model did not manage SMART control units.

BATTERY

Inside there is a battery and a battery charger so as to ensure monitoring, even in case of a power outage. After completing the installation connections, connect the red wire (+) to the internal battery terminal.
When the panel is powered by the battery and the voltage falls below 7V, a forced shut down is triggered to avoid damaging the battery.

SYSTEM

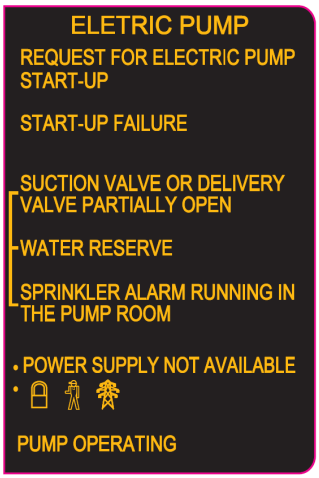
The typical system involves a structure with a PUMPS COMPARTMENT, with pumps and control panels, and a ATTENDED LOCATION, containing the monitoring devices:

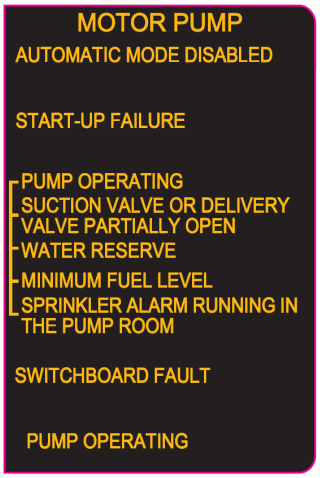


COMPOSITION

Completion of the main panel requires choosing the desired composition and applying the pertinent labels in the appropriate spaces to indicate a motor pump or electric pump. To arrange the system by installing a pump in the X position (1, 2 or 3), settings must be made using the dip-switches on the board located at the back of the front panel.

1. Set dip-switch 4 to OFF.
2. Apply the adhesive in the X position
3. Set the X CIRCUIT BOARD ADDRESS in the control unit
4. Move the X dip-switch lever to ON: when the lever is set to ON, the pump is present





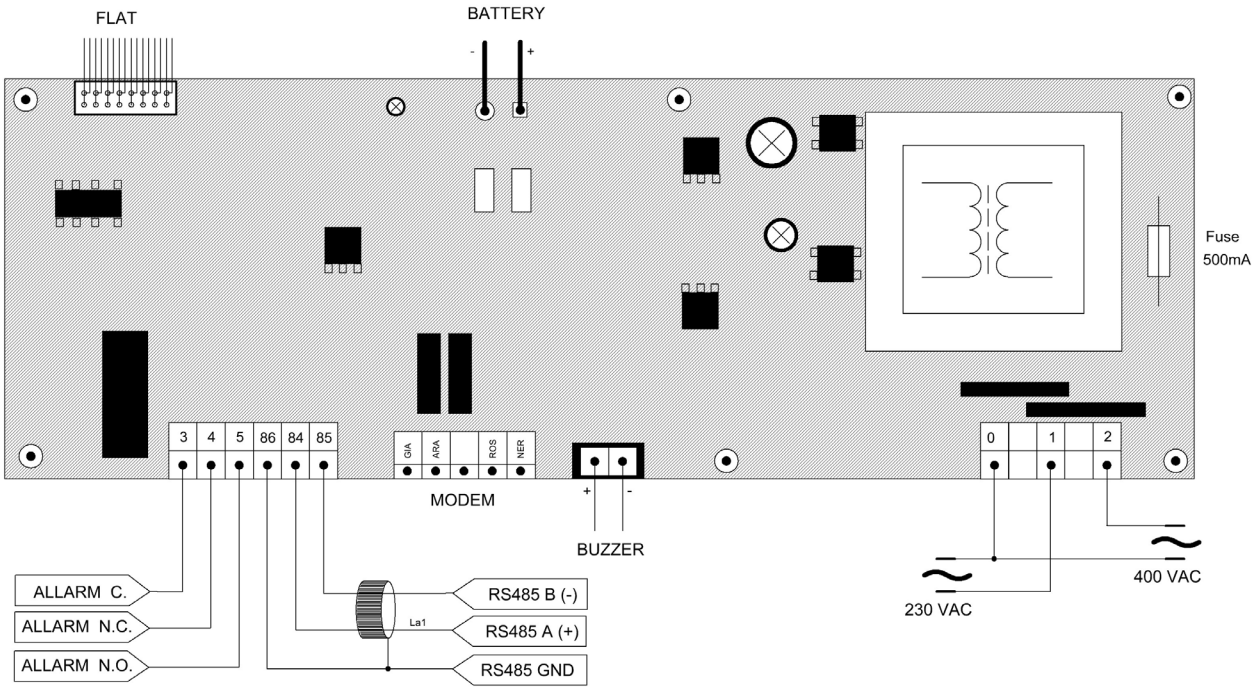
If there is a second signal panel, make the following settings:

1. Set dip-switch 4 to ON IN MAIN PANEL.
2. Set all dip-switches to OFF in the SECONDARY PANEL.

A system can consist of up to 3 pumps and 2 signal panels.

CONNECTION

Below is a diagram of the internal circuit board from which all connections are to be made



POWER SUPPLY

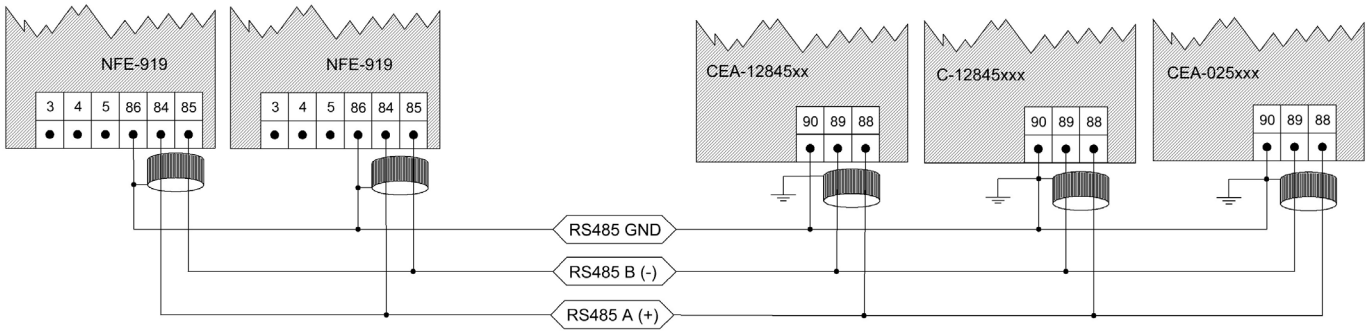
With a 230 VAC power supply, connect terminals 0-1; with a 400 VAC power supply, connect terminals 0-2. A 500 mA protection fuse is inserted on the circuit board.

ALARM

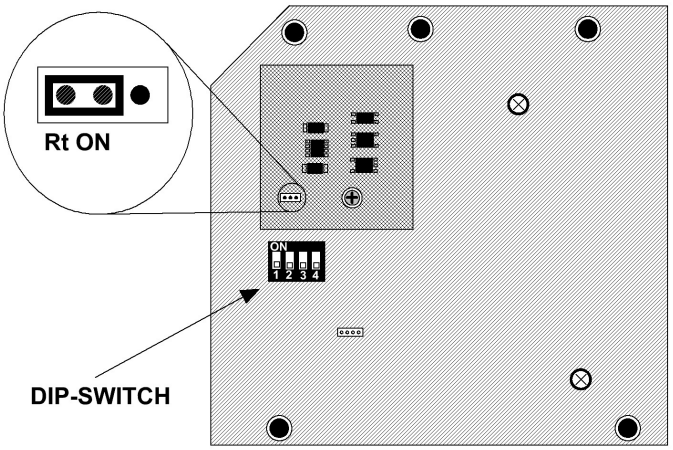
Terminals 3, 4, 5 have an alarm output (relay), which is active simultaneously with the acoustic signal.

DATA LINE

For data connection between the various control units, use a LINEAR STRUCTURE that is no more than 500m in length and made of twisted, two-conductor data transmission cable: 22-24 AWG (0.20-0.34mm^2) PLTC/CM, impedance Z0 = 120W. If a shielded cable is used, connect the shield to ground. Connect the signals to similar positions in the various control units. See the figure below.



The line termination resistor can be inserted on the back of the front panel, see below:



For more information on the RS485 protocol, see the document "INDICATIONS FOR RS-485 NETWORK INSTALLATION".

MODEM (on request)

The modem sends a text message to one or more telephone numbers (maximum 3) if a fault is detected by the FIRE-FIGHTING SIGNAL AND ALARM PANEL. The message texts, and the telephone numbers, can be modified by the users using the dedicated software provided.

The alarms are grouped into LEVEL A and LEVEL B:

WARNINGS

The device serves to display the alarms sent by the control panels of motor pump and electric fire pump units.

Warning: Parts powered with dangerous voltages

The control panel can only be accessed by specifically assigned, duly trained personnel. Maintenance and function programming must be performed only when the system is disconnected from the mains. As an additional protection measure, we recommend grounding the system phases. Notwithstanding the above, only specifically assigned, duly trained personnel can perform the following operations with the system powered:

- visual inspection of the panel connections and markings;
- taking voltage and/or current measurements

These tasks must always be performed using equipment that ensures appropriate electrical protection.

Warning:

Carefully observe the following recommendations

- Always make connections following the wiring diagram.
- Check that consumption of the connected devices is in line with the described technical characteristics.
- Install so that adequate heat dissipation is always achieved.
- Always install it in a position lower than other units that produce or dissipate heat.
- Handle and connect without exposing the electronic circuit board to mechanical strain.
- Do not let cuttings of copper conductors or other metal residues drop onto the circuit board.
- If necessary, replace the fuses only with the same type as the original fuse.
- The installer must ensure protection against direct/indirect contact according to current legislation concerning electrical systems using up to 1000 V in AC and 1500 V in DC (for Italy CEI 64-8).

THIS MONITORING SYSTEM IS NOT DESIGNED TO OPERATE UNDER THE FOLLOWING CONDITIONS:

- Ambient temperatures exceeding the limits specified in the technical data sheet
- Variations in temperature and air pressure that are so abrupt as to produce exceptional condensation
- Strong pollution from dust, fumes, vapours, salts and corrosive or radioactive particles
- Strong heat radiation due to direct sunlight, ovens or the like
- Possible attack of mould or small pests
- Risk of fire or explosion
- Transmission of strong shocks or vibrations to the control panel

ELECTROMAGNETIC COMPATIBILITY

This monitoring system works correctly only if it is installed in systems that comply with regulations governing CE marking. In fact, it complies with the immunity requirements given in the standard EN 61326-1. However, this does not rule out the possibility that malfunctions could occur in extreme cases, which may arise in particular situations. The installer is responsible for checking that the degree of perturbation does not exceed that required by the standards.

OPERATION AND MAINTENANCE

The following weekly maintenance operations are recommended:

- Signal operation checks
- Battery status checks
- Conductor tightness and terminal status checks.

IN THE ABSENCE OF OUR WRITTEN DECLARATION ATTESTING TO THE CONTRARY, THIS MONITORING SYSTEM IS NOT SUITABLE FOR USE AS A CRITICAL COMPONENT IN EQUIPMENT OR SYSTEMS VITAL TO THE LIFE OF PEOPLE AND OTHER LIVING THINGS.

TECHNICAL FEATURES

Mains power supply	230 – 400Vac ± 10% 50 – 60Hz
Absorption	0.1 A ac
Contact capacity (Terminals 3-4-5)	Max 5A, 25Vac, 60Vdc
Rated insulation voltage	400 V
Battery	12 V, 1.2Ah lead-acid, sealed, Faston contacts
Acoustic alarm signal level	75 dB at 30 cm 12VDC
Battery life	5 hours
Operating temperature	-10 to 50°C
Storage temperature	-20 to 60°C
Relative humidity	50% at 40°C
Altitude	MAX 2000 m a.s.l.
Installation conditions	Panel: wall mounted for outdoor use
Protection class	IP54
Weight of alarm panel	2 kg
Dimensions (LxHxW)	254 x 200 x 100 mm

INFORMATION FOR ORDERING

NFE-919/10 Panel._____ Code. 00022105

STANDARD ACCESSORIES

KIT MU + securing brackets NFE-919/21/31._____ Code. 40804521

KIT of adhesive plates to be applied on alarm and signalling panel _____ Code. 70839735

Алматы (7273)495-231
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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
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Смоленск (4812)29-41-54
Сочи (862)225-72-31
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