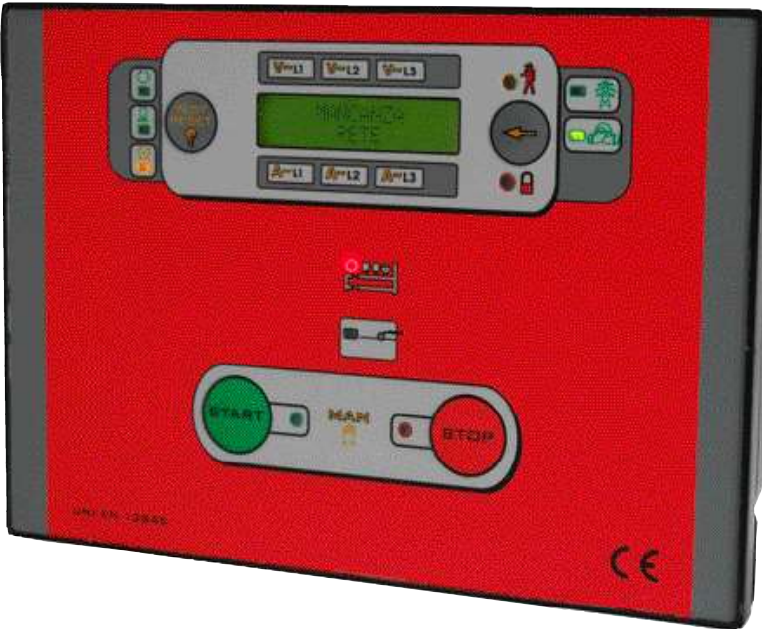


**FIRE-FIGHTING ELECTRIC PUMP CONTROL UNIT  
IN CONFORMITY TO UNI EN 12845 STANDARD  
TYPE CEA-12845-485**

**INSTRUCTION AND USER MANUAL**



COMPLETE OF:

- 3 MAINS VOLTMETERS
- 3 AMMETERS MAX 1000A  
(POSSIBILITY FOR THE CONNECTION OF A SINGLE AMMETER)
- MAINS FREQUENCY METER (50/60 HZ)
- WATTMETER (ACTIVE POWER)
- VAR METER (REACTIVE POWER)
- VOLTAMMETER (APPARENT POWER)
- COSPHIMETER (POWER FACTOR)
- TOTAL HOUR METER (TOTAL HOURS OF PUMP OPERATION)
- PARTIAL HOUR METER

SIMULTANEOUS READING

- STAR/DELTA START COMMAND
- IMPEDANCE START COMMAND
- BUTTON FOR TEST OF THE WARNING LIGHTS
- STARTING STOP BUTTONS
- HISTORICAL REPORT

PARMA



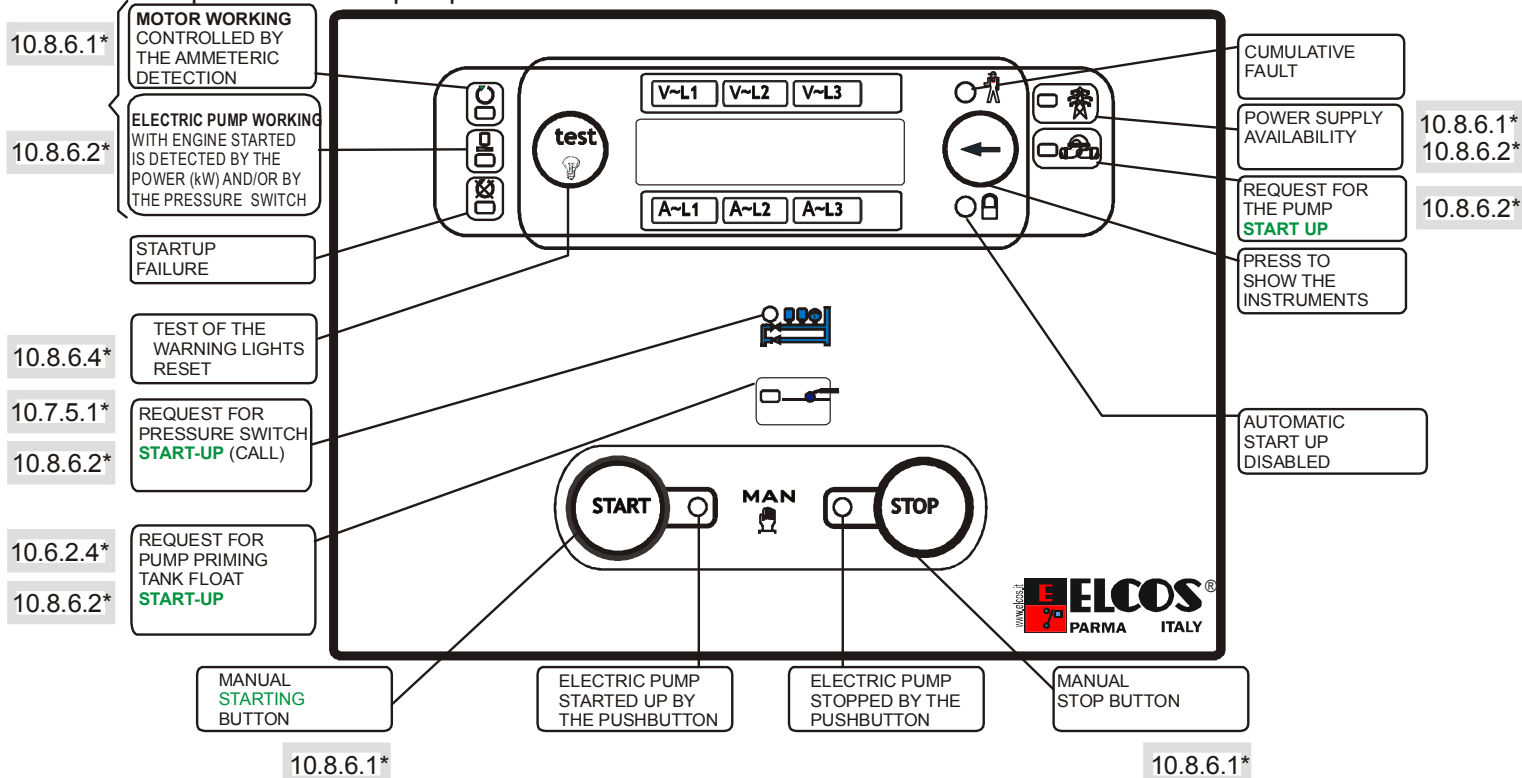
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## BRIEF INSTRUCTIONS

It is used to equip switchboards for fire-fighting electric pump start-up in compliance with Standard **UNI EN 12845**. It has a monitoring function and controls the contactors for the automatic and manual startup of the electric pump.



\*PARAGRAPH NUMBER (OF REGULATION EN12845) TO CONSULT


### INSTRUMENTS

- **THREE MAINS VOLTMETERS** For three-phase voltages up to 570 V
- **THREE AMMETERS** Compatible with the ammeteric transformers type 30/5, 40/5, 50/5, 60/5, 80/5, 100/5, 200/5, 150/5, 250/5, 300/5, 400/5, 500/5, 600/5, 800/5, 1000/5.
- **FREQUENCY METER** From 0 Hz to 85 Hz for alternating voltages with amplitude greater than 20V~.
- **WATTMETER**
- **VARMETER**
- **VOLTAMMETER** Displays apparent power up to 750 KVA.
- **COSPHIMETER**
- **TOTAL HOUR METER** With four figures and a maximum reading (hours and minutes) 9999
- **PARTIAL HOUR METER** Displays with four figures and a maximum reading (hours and minutes) 9999.


### HISTORY AND REVISIONS

Date	REVISION level	Description	Page
December 2007		See manual without revision	
January 2008	1.15	Weekly test	enclosure C (Reserved to the manufacturer)
		We have removed the connections with terminals <span style="border: 1px solid black; padding: 0 2px;">15</span> <span style="border: 1px solid black; padding: 0 2px;">16</span> <span style="border: 1px solid black; padding: 0 2px;">17</span>	
		Cumulative fault is flashing	
		The automatic starting switched-off condition enables the cumulative fault led	8
	1.16	Zeroing historical report (visible with remote management)	enclosure F enclosure G enclosure A (Reserved to the manufacturer)
		Stopping at the reopening of the float of the priming tank	
		Inclusion - exclusion of the stopping from priming float	
		Stopping operation UNI10779 with switch AUTOMATIC START UP ENGAGED	
April 2008	1.17	Internal use	
July 2008	1.18	Compatibility with Modem AMD-103	
April 2009	1.19	Relay general alarm and added the programming of the T.A. 150/5	2 - 6 - 7 - 8
August 2009	1.20	INTERNAL USE. AUTOMATIC START-UP MESSAGE DISABLED in phones no. 2 and 3.	
May 2010	2.00	Portuguese added Single- and three-phase mains voltage	7
September 2012	2.03	Weekly automatic test – stop during the test. During the test an option is given to disable switch-on of the REQUEST FOR PUMP START-UP light and switching of the GENERAL ALARM relay. Procedure run to show and reset the events history.	enclosure C enclosure E 10


## FUNCTIONS SWITCHING OFF

**MOTOR IN OPERATION**  It is detected when the pump current is higher than the threshold set for the entire duration of the intervention delay.



Setting field  $0 \div 100\%$  (MAX 1200A)  $1 \div 10 \text{ SEC.}$   
 Factory setting 8,5 A.  $3 \text{ SEC.}$  } intervention delay

ON  Move DIP switch 2 to ON


**MOTOR IN OPERATION (A)**

Press to display 


Threshold Delay **8,5 A**  
**3 sec.** ←



• Increases   • Decreases

Press when the arrow is next to the parameter to be modified

ON  Move DIP switch 2 to OFF


**8,5 A**  
**3 sec.**

Press and wait for PROGRAMMED to be written. 

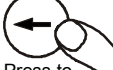
**START UP FAILURE (kW)**  When the contact  of the control unit is closed, the start up failure is detected when the value of power (Kw) of the electric pump, remains lower than the programmed threshold for the whole of the intervention delay time.

KM-Δ or KM-I



Setting field  $0,1 \div 100\%$  MAX 690kW  $1 \div 120 \text{ SEC.}$   
 Factory setting (Automatic Calibration, see page 7)  $70 \text{ SEC.}$  } intervention delay

ON  Move DIP switch 2 to ON


**STARTUP FAILURE (kW)**

Press to display 


Threshold Delay **0,1 (Kw)**  
**70 sec.** ←


• Increases   • Decreases

Press when the arrow is next to the parameter to be modified


ON  Move DIP switch 2 to OFF

**8 (Kw)**  
**70 sec.**


Press and wait for PROGRAMMED to be written. 

**STARTUP FAILURE CONTROLLED BY THE PUMP PRESSURE SWITCH**  With engine started, it is detected when the pump pressure switch does not close and the intervention delay has elapsed.



**INTERVENTION DELAY** Setting field  $0 \div 120 \text{ SEC.}$  } intervention delay  
 Factory setting  $70 \text{ SEC.}$

ON  Move DIP switch 2 to ON


**STARTUP FAILURE BY PRESS. SWITCH**

Press to display 


Delay **70 sec.** ←

• Increases   • Decreases


Press to change the delay

ON  Move DIP switch 2 to OFF


**70 sec.**

Press and wait for PROGRAMMED to be written. 

### ANOMALIES BASIC TABLE

ALARMS INDICATED ON DISPLAY	INTERVENTION DELAY (SECONDS)	THRESHOLDS		INTERVENTION DELAY SECONDS		STORES THE FUNCTION	INTERVENTION OCCURS WHEN:
		SETTING FIELD	FACTORY SETTING	ADJUSTMENT RANGE	FACTORY SETTING		
MAINS UNDER-FREQUENCY	10 AFTER THE THRESHOLD IS EXCEEDED	$20 \div 60\text{Hz}$	47,5 Hz	$0 \div 10$	5	NO	Mains frequency remains lower than the programmed threshold for the whole of the intervention delay time
MAINS OVERFREQUENCY	ALWAYS ACTIVE	$51 \div 85\text{Hz}$	60 (50Hz) 72 (60Hz)	$0 \div 5$	2	NO	Mains frequency remains above the programmed threshold for the whole of the intervention delay time
MAINS UNDERVOLTAGE	"	$100 \div 400\text{V}$	356V Three-ph. 205V Single-ph.	$1 \div 180$	5	NO	At least one phase has a value lower than the programmed threshold and the intervention delay time has elapsed
MAINS VOLTAGE PRESENT	"	$100 \div 500\text{V}$	360V Three-ph. 208V Single-ph.	$1 \div 180$	5	NO	The three phases stay permanently above the programmed threshold for the whole of the intervention delay time
MAINS OVERVOLTAGE	"	$200 \div 570\text{V}$	444V Three-ph. 257V Single-ph.	$1 \div 10$	3	NO	At least one phase remains above the programmed threshold for the whole of the intervention delay time
STARTUP FAILURE DETECTED BY POWER (kW)	BY CLOSING THE CONTACT 	$0,1 \div 100\%$ MAX 690kW	See AUTOMATIC CALIBRATION	$1 \div 120$	70	YES	The kilowatts remain lower than the programmed threshold for the whole of the intervention delay time
STARTUP FAILURE CONTROLLED BY THE PUMP PRESSURE SWITCH	ALWAYS ACTIVE			$1 \div 120$	70	YES	The pump pressure switch does not close and the intervention delay has elapsed
PUMP OVERCURRENT	"	$0 \div 100\%$ (MAX 1000A)	50 A (T.A. 50/5)	$1 \div 30$	15	YES	Current of the pump remains above than the programmed threshold for the whole of the intervention delay time

### INDICATIONS OF ALARM

The alarms do not cause the pump to stop, they are indicated by the relative signal, by the cumulative led , by the message displayed and they switch over the contact (availability of electric power) to activate remote monitoring.

# PROGRAMMINGS

It is possible to modify the thresholds and the intervention delay.

<b>MAINS UNDERFREQUENCY.</b> Setting field 20 ÷ 60Hz Factory setting 47,5 (50Hz) 57 (60Hz)			0 ÷ 10 sec. 5 sec.
ON  Move DIP switch 2 to ON <div style="border: 1px solid black; padding: 2px; display: inline-block; margin-top: 5px;">LINE MAIN UNDERFREQUENCY</div> Press to display	Threshold 47,5 Hz ← Intervention delay 5 sec. • Increases   • Decreases Press when the arrow is next to the parameter to be modified	ON  Move DIP switch 2 to OFF <div style="border: 1px solid black; padding: 2px; display: inline-block; margin-top: 5px;">47,5 Hz</div> <div style="border: 1px solid black; padding: 2px; display: inline-block; margin-top: 5px;">5 sec.</div> Press and wait for PROGRAMMED to be written	
<b>MAINS OVERFREQUENCY.</b> Setting field 51 ÷ 85Hz Factory setting 60 (50Hz) 72 (60Hz)			0 ÷ 5 sec. 2 sec.
ON  Move DIP switch 2 to ON <div style="border: 1px solid black; padding: 2px; display: inline-block; margin-top: 5px;">LINE MAIN OVERFREQUENCY</div> Press to display	Threshold 60 Hz Intervention delay 2 sec. ← • Increases   • Decreases Press when the arrow is next to the parameter to be modified	ON  Move DIP switch 2 to OFF <div style="border: 1px solid black; padding: 2px; display: inline-block; margin-top: 5px;">60 Hz</div> <div style="border: 1px solid black; padding: 2px; display: inline-block; margin-top: 5px;">2 sec.</div> Press and wait for PROGRAMMED to be written	
<b>MAINS VOLTAGE.</b> Factory setting THREE-PHASE.			
ON  Move DIP switch 2 to ON <div style="border: 1px solid black; padding: 2px; display: inline-block; margin-top: 5px;">LINE MAIN VOLTAGE</div> Press to display	<div style="border: 1px solid black; padding: 2px; display: inline-block; margin-bottom: 5px;">SINGLE-PHASE</div> <div style="border: 1px solid black; padding: 2px; display: inline-block; margin-bottom: 5px;">THREE-PHASE</div> • Increases   • Decreases Press when the arrow is next to the parameter to be modified	ON  Move DIP switch 2 to OFF <div style="border: 1px solid black; padding: 2px; display: inline-block; margin-top: 5px;">THREE-PHASE</div> Press and wait for PROGRAMMED to be written	
<b>MAINS UNDERVOLTAGE.</b> Setting field 100 ÷ 400V Factory setting 356V			1 ÷ 180 sec. 5 sec.
ON  Move DIP switch 2 to ON <div style="border: 1px solid black; padding: 2px; display: inline-block; margin-top: 5px;">LINE MAIN UNDERVOLTAGE</div> Press to display	Threshold 356 V ← Intervention delay 5 sec. • Increases   • Decreases Press when the arrow is next to the parameter to be modified	ON  Move DIP switch 2 to OFF <div style="border: 1px solid black; padding: 2px; display: inline-block; margin-top: 5px;">356 V</div> <div style="border: 1px solid black; padding: 2px; display: inline-block; margin-top: 5px;">5 sec.</div> Press and wait for PROGRAMMED to be written	
<b>MAINS VOLTAGE PRESENT.</b> Setting field 100 ÷ 500V Factory setting 360 V			1 ÷ 180 sec. 5 sec.
ON  Move DIP switch 2 to ON <div style="border: 1px solid black; padding: 2px; display: inline-block; margin-top: 5px;">LINE VOLT. MAIN PRESENT</div> Press to display	Threshold 360 V Intervention delay 5 sec. ← • Increases   • Decreases Press when the arrow is next to the parameter to be modified	ON  Move DIP switch 2 to OFF <div style="border: 1px solid black; padding: 2px; display: inline-block; margin-top: 5px;">360 V</div> <div style="border: 1px solid black; padding: 2px; display: inline-block; margin-top: 5px;">5 sec.</div> Press and wait for PROGRAMMED to be written	
<b>MAINS OVERVOLTAGE.</b> Setting field 200 ÷ 570V Factory setting 444 V			1 ÷ 10 sec. 3 sec.
ON  Move DIP switch 2 to ON <div style="border: 1px solid black; padding: 2px; display: inline-block; margin-top: 5px;">LINE MAIN OVERVOLTAGE</div> Press to display	Threshold 444 V Intervention delay 3 sec. ← • Increases   • Decreases Press when the arrow is next to the parameter to be modified	ON  Move DIP switch 2 to OFF <div style="border: 1px solid black; padding: 2px; display: inline-block; margin-top: 5px;">444 V</div> <div style="border: 1px solid black; padding: 2px; display: inline-block; margin-top: 5px;">3 sec.</div> Press and wait for PROGRAMMED to be written	
<b>PUMP OVERCURRENT.</b> Setting field 0 ÷ 100% Factory setting 50 A			1 ÷ 30 sec. 15 sec.
ON  Move DIP switch 2 to ON <div style="border: 1px solid black; padding: 2px; display: inline-block; margin-top: 5px;">PUMP OVERCURRENT</div> Press to display	Threshold 50 AMP. Intervention delay 15 Sec. ← • Increases   • Decreases Press when the arrow is next to the parameter to be modified	ON  Move DIP switch 2 to OFF <div style="border: 1px solid black; padding: 2px; display: inline-block; margin-top: 5px;">50 AMP.</div> <div style="border: 1px solid black; padding: 2px; display: inline-block; margin-top: 5px;">15 sec.</div> Press and wait for PROGRAMMED to be written	

# AVAILABLE FAULT

THE NEW DESCRIPTION OF THE NAME OF THE FAULT IS NOT TRANSLATED.

ON Move DIP switch 4 to ON

WRITE

The fault name description is finished

Press to read the functions and the delay to be programmed

**\* CUMULATIVE ALARM**

HOW TO WRITE

STOP

**0 1 2 3 4 5 6 7 8 9    A B C D E F G H I J K L M N O P Q R S T U V W X Y Z**

Press to choose a letter or number, release the key for at least 1 second; the letter or number will remain written on the display.

TEST    Press to leave a space    Press to delete    START

FUNCTIONS TO BE PROGRAMMED DESCRIBED ON THE DISPLAY	DESCRIPTION
NOT STORED *	STORED
ACTIVE WITH THE OPEN CONTACT *	ACTIVE WITH THE CLOSED CONTACT
ACTIVATION ALWAYS ACTIVE *	ACTIVATION ACTIVE RUNNING
CONTACT (42 -43) CLOSING NO	CONTACT (42-43) * CLOSING YES
INTERVENTION DELAY (ADJUSTABLE) * FACTORY SETTING 10 seconds for the WATER RESERVE	0 ÷ 60 SEC.

START    Press to modify the functions and the delay to be programmed    STOP

ON To confirm the programming move DIP switch 4 to OFF

Press and wait for PROGRAMMED to be written on the display

FUNCTION AUTOMATIC STOP	JUMPER	JUMPER NOT CUT	JUMPER CUT
<p>ALLOWED BY THE STANDARD <b>UNI 10779 July 2007</b></p> <p>When necessary, for any activities that are not constantly manned, automatic stopping is permitted, providing the pumping system is used exclusively by the hydrant system.</p>		<p>(Factory setting)</p> <p>AUTOMATIC STOP NOT ACTIVATED</p>	<p>(During the led test <b>UNI 10779</b> appears on the display)</p> <p>AUTOMATIC STOP ACTIVATED</p>
<p><b>OPERATION</b> (With automatic start up engaged)</p> <p>The electric pump stops 20 mins. after the contacts of the call pressure switches have been permanently closed. (The display continuously shows how much time is left before the electric pump stops). The electric pump is not stopped when the switch is positioned on AUTOMATIC START UP EXCLUDED. When the switch is positioned back to AUTOMATIC START UP ENGAGED, the electric pump continues to run.</p>			

**STOP WAITING TIME (UNI 10779).**

SETTING FIELD    1 ÷ 30 minutes

FACTORY SETTING 20 minutes.

ON Move DIP switch 2 to ON

**STOP WAITING TIME**

Press to display

Time 20 min ←

• Increases START STOP • Decreases

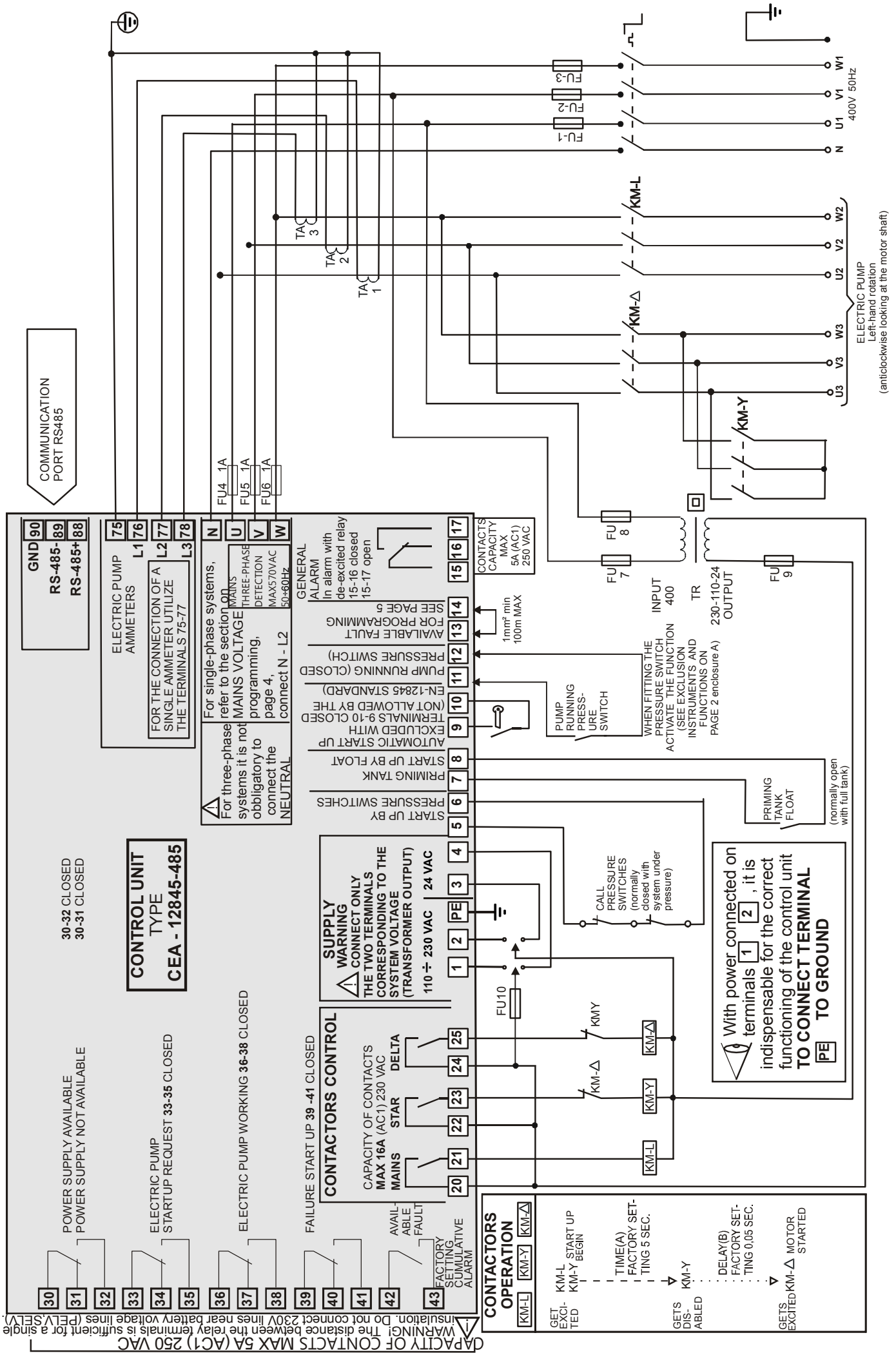
Press to change the time.

ON Move DIP switch 2 to OFF

20 minutes

Press and wait for PROGRAMMED to be written.

6 **DIAGRAM OF CONNECTION STAR/DELTA START UP WITH THE FIRE-FIGHTING ELECTRIC PUMP CONTROL UNIT TYPE CEA-12845-485**





# NECESSARY PROGRAMMING OPERATIONS



## Selection of amperometric transformer and entry of current value

It is possible to select ammeteric transformers type 30/5, 40/5, 50/5, 60/5, 80/5, 100/5, 150/5, 200/5, 250/5, 300/5, 400/5, 500/5, 600/5, 800/5, 1000/5  
 Maximum reading of 1000 A or 110% of the base scale current of the chosen transformer.

**ON** Move DIP-B switch 1 to **ON**

AMP. TRANSFORMER 50/5

Press to choose the value of the amperometric transformer

**START**      **STOP**

• Increases      • Decreases

**ON** Move DIP switch 1 to **OFF**

**EXAMPLE** AMP. TRANSFORMER 100/5

Press and wait until the writing appears:

**PROGRAMMED**

Having programmed the Ammeteric Transformer the PUMP OVERCURRENT threshold is automatically adjusted to 100% of the nominal Ammeteric Transformer value  
 To manually modify the threshold refer to page 4.

PUMP OVERCURRENT

100A

## ENTERING THE CURRENT VALUE

Read the **current (A)** value on the motor plate and enter the values in the control panel using the following procedure.

## AUTOMATIC CALIBRATION

Following the described procedure, the thresholds of the following will be automatically programmed: MOTOR RUNNING and START UP FAILURE

### PUMP WORKING (Controlled by the ammeteric detection)

Intervention occurs when the pump current remains above the set threshold for the whole of the intervention delay time ( 5 sec).

**AUTOMATIC CALIBRATION LESS 50%**  
 WITH PUMP STARTED WITH FEED CLOSED

#### EXAMPLE

PUMP STARTED WITH FEED CLOSED	PUMP IN OPERATION
17 A	8,5 A

### START UP FAILURE (Controlled by the value of power kW)

Intervention occurs when the value of power (Kw) remains lower than the programmed threshold for the whole of the intervention delay time ( 5 sec.)

**AUTOMATIC CALIBRATION LESS 20%**  
 WITH PUMP STARTED WITH FEED CLOSED

#### EXAMPLE

PUMP STARTED WITH FEED CLOSED	START UP FAILURE
10 Kw	8 Kw

TO CHANGE THE THRESHOLDS MANUALLY REFER TO PAGE 3.

## PROGRAMMING

Start the primed pump with feed closed

AUTOMATIC CALIBRATION

Press the three buttons to display AUTOMATIC CALIBRATION, hold down and wait for PROGRAMMED to appear on the display.

## DIP-SWITCH

NECESSARY PROGRAMMING OPERATIONS AMMETERIC TRANSFORMER	CHOICE LANGUAGES	INSTRUMENTS AND FUNCTIONS EXCLUSION	AVAILABLE PROTECTION	NOT USED	NOT USED BY EN12845 STANDARD	MAINS FREQUENCY	START UP SYSTEMS
ON						60 Hz	IMPEDANCE
OFF						50 Hz	STAR TRIANGLE

**LANGUAGE SELECTION. The factory set language is ITALIAN; the languages that can be selected are: ENGLISH - SPANISH - GERMAN - FRENCH - PORTUGUESE**

**ON** Move DIP-switch 2 to ON

**SELEZIONE LINGUA ITALIANO**

Press to display

**ON** Move DIP-switch 2 to OFF


**SELEZIONE LINGUA ENGLISH**

Press and wait for PROGRAMMED to be written.

**START**      **STOP**

Press to select the desired language



## OPERATION PREPARATION FOR AUTOMATIC

Active with the switch (externally connected) AUTOMATIC STARTUP ENGAGED (from this position it is possible to remove the key). Setting the switch to excluded, the automatic start is blocked. This exclusion is signalled by the flashing warning light and by the following message displayed on the screen: AUTOM. STARTING EXCLUDED. 

## AUTOMATIC

When the equipment detects the closure of the "starting call" contact (pressure switch), the electric pump set begins to start up. The control unit checks (without commanding the stopping of the electric pump unit) for possible motor faults, during its operation.

### AUTOMATIC

This takes place when the CALL pressure switch contacts are opened, which is shown by a fixed light  coming on. After the pressure switches have closed, the indicator starts to flash. Automatic starting also happens when the pump priming float contact is closed, which is shown by a fixed light  coming on. When the contact opens, the indicator starts to flash.


Flashing lights stay on for the whole time the motor is running

### MANUAL


With START button.

## AUTOMATIC - MANUAL STARTING

## MOTOR IN OPERATION

 • It is detected when the motor current is higher than the threshold set for the entire duration of the intervention delay.

## ELECTRIC PUMP IN OPERATION

 • With motor started it is detected by the value of power (kW) and by closing of the pump pressurized-pressure switch.

## STOP

THE ENGINE CAN ONLY BE TURNED OFF MANUALLY.

**It is not possible to stop it when the call from the pressure switches is present and automatic start up engaged.**


### • With call from the pressure switches present

Pressing the STOP pushbutton, the following message is displayed on the screen: DON'T SWITCH OFF IN EVENT OF FIRE STOPEXCLUDED.

### • With call from the pressure switches absent.

Pressing the STOP pushbutton, the following message is displayed on the screen: DON'T SWITCH OFF IN EVENT OF FIRE.

## ALARMS

The alarms are indicated on the display by the relative led and by a cumulative flashing led  and the switching of relay GENERAL ALARM .

They are divided into two groups:

### MOTOR SUPPLY ALARMS

- voltage value failure or lowering even on just one phase
- incorrect phase sequence


### MOTOR ALARM

- overcurrent

### PLANT ALARM

- working pump pressure switch fault

## RESTORING

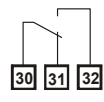


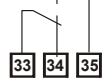

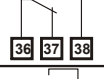

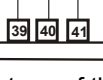

This is done by pressing the RESET  pushbutton: In this way, the protections are activated and the startup cycle controlled by the priming tank float is released.

## START UP FAILURE


**is detected with at least one of the following functions after a request for automatic starting of the motor**  
** it is not controlled through amperometric detection**

- when the value of power (kW) of the motor of the pump remains lower than the programmed threshold for the whole of the intervention delay time .

## REMOTE AUXILIARY FUNCTIONS

		INTERVENTION	
		SWITCHES THE RELAY:	IS INDICATED BY THE SIGNAL
<b>- ELECTRIC POWER NOT AVAILABLE</b>	It is detected when at least one of the following faults occurs: • voltage value failure or lowering even on just one phase • phase sequence not correct (for three-phase systems only) • blown switchboard fuses • automatic start up excluded • alarms		 
<b>- ELECTRIC PUMP START UP REQUEST</b>	It is detected in two ways: • at the opening of the call pressure switches • at the closing of the pump priming tank float contact		
<b>• ELECTRIC PUMP IN OPERATION</b>	see description		
<b>• START UP FAILURE</b>	see description		

## PARTIAL HOUR METER

Press  to select (PARTIAL HOUR METER) the operating hours and minutes of the last run of the electric pump. The hours indicated are zero-set the next time the motor pump is started up.



# PROGRAMMABLE TIMES

	DESCRIPTION	SECONDS	
		SETTING FIELD	FACTORY SETTING
	DELAYED START AFTER OPENING OF THE CONTACTS OF THE CALL PRESSURE SWITCHES	0÷120	1
	DELAYED START AFTER CLOSING OF THE CONTACT OF THE PRIMING TANK FLOAT	0÷120	1
STAR/DELTA START UP	TIME (A) STAR CLOSING	1÷60	5
	TRANSITION DELAY (B) (PAUSE) IN SWITCHOVER FROM STAR TO DELTA	0÷1	0,05
IMPEDANCE START UP	TIME (C) FROM STAR CONTACTOR OPENING TO LINE CONTACTOR CLOSING	1÷60	5
	TRANSITION DELAY (D) (PAUSE) BETWEEN STAR CONTACTOR OPENING, LINE CONTACTOR CLOSING AND IMPEDANCE CONTACTOR OPENING	0÷1	0,05

## DELAYED START AFTER OPENING OF THE CONTACTS OF THE CALL PRESSURE SWITCHES

**ON** ↑ Move DIP switch 2 to ON

**START DELAY FROM PRESS. SW.**

Press to display

Threshold

2 sec. ←

Delay

• Increases • Decreases

Press to change the time

**ON** ↓ Move DIP switch 2 to OFF

2 sec.

Press and wait for PROGRAMMED to be written.

## DELAYED START AFTER CLOSING OF THE CONTACT OF THE PRIMING TANK FLOAT

**ON** ↑ Move DIP switch 2 to ON

**START DELAY FROM FLOAT**

Press to display

Threshold

2 sec. ←

Delay

• Increases • Decreases

Press to change the time

**ON** ↓ Move DIP switch 2 to OFF

2 sec.

Press and wait for PROGRAMMED to be written.

## TIME (C) FROM STAR CONTACTOR OPENING, TO DELTA CONTACTOR CLOSING.

### STAR/DELTA START UP

**ON** ↑ Move DIP switch 2 to ON

**TIME STAR DELTA**

Press to display

Threshold

5 sec. ←

Time

• Increases • Decreases

Press to change the time

**ON** ↓ Move DIP switch 2 to OFF

5 sec.

Press and wait for PROGRAMMED to be written.

## TRANSITION DELAY (B) (PAUSE) IN SWITCHOVER FROM STAR TO DELTA

### STAR/DELTA START UP

**ON** ↑ Move DIP switch 2 to ON

**PAUSE DELAY STAR DELTA**

Press to display

Delay

50 ms ←

Motor stopping

• Increases • Decreases

Press to change the delay

**ON** ↓ Move DIP switch 2 to OFF

50 ms.

Press and wait for PROGRAMMED to be written.

## TIME (C) FROM STAR CONTACTOR OPENING TO LINE CONTACTOR CLOSING

### IMPEDANCE START UP

**ON** ↑ Move DIP switch 2 to ON

**TIME IMPEDANCE START.**

Press to display

Time

5 sec. ←

• Increases • Decreases

Press to change the time

**ON** ↓ Move DIP switch 2 to OFF

5 sec.

Press and wait for PROGRAMMED to be written.

## TRANSITION DELAY (D) (PAUSE) BETWEEN STAR CONTACTOR OPENING, LINE CONTACTOR CLOSING AND IMPEDANCE CONTACTOR OPENING

### IMPEDANCE START UP

**ON** ↑ Move DIP switch 2 to ON

**PAUSE (DELAY) IMPEDANCE START.**

Press to display

Delay

50 ms ←

• Increases • Decreases

Press to change the delay

**ON** ↓ Move DIP switch 2 to OFF

50 ms.

Press and wait for PROGRAMMED to be written.

# VIEW THE EVENTS HISTORY

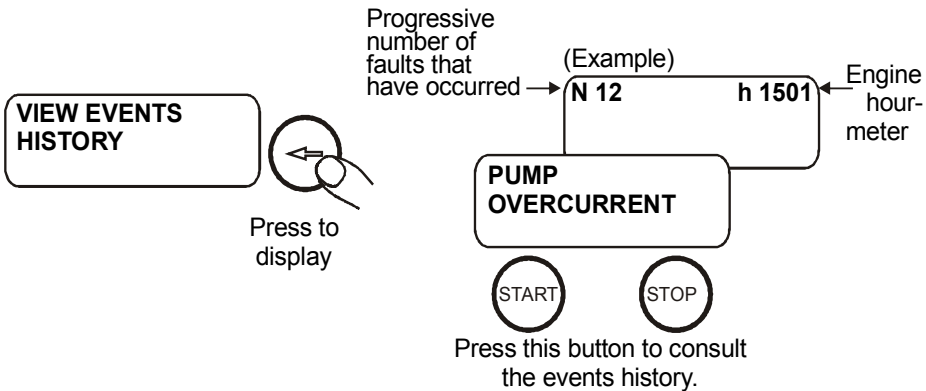
Data relating to the latest 100 events is collected.

- LIST OF EVENTS:
- START UP BY PRESS. SWITCHES
  - START UP BY PRIMING
  - START UP BY BUTTON
  - START UP BY WEEKLY TEST
  - STOP MANUAL
  - STOP AUTOMATIC
  - SENDES ALARMS

TO BE CARRIED OUT WITH ENGINE OFF

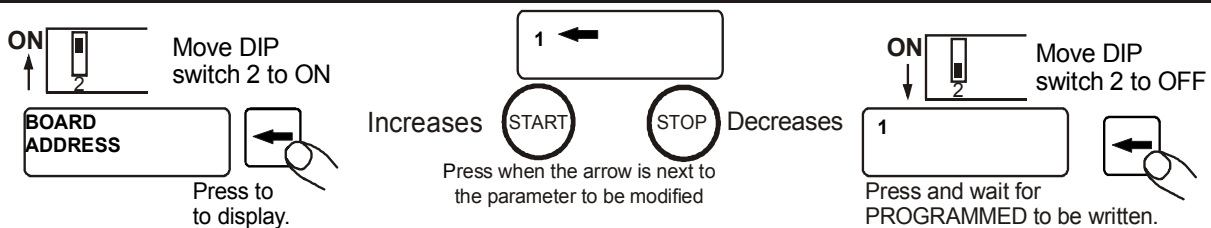


Move DIP switches 2-5 to ON



Move all the DIP switches back to OFF.

## BOARD ADDRESS. Factory programming 1.



Carries out the automatic control and monitoring functions of a fire-fighting electric pump unit. It has been designed to be installed only inside on an electrical panel as a single unit and so that it can be connected to other components (, fuses, contactor, etc.) which the installer will have available to complete the plant.

## NOTICES

### Warning:



### Components carrying dangerous voltage levels

Only assigned and suitably trained personnel are allowed access to the control unit.

No maintenance operations are permitted unless the plant is disconnected from the mains and the battery. As an additional safety measure, the plant phases should be short-circuited and earthed.

Notwithstanding the above, only assigned and trained personnel can perform the following operations with the plant on:

- make a visual inspection of the control unit, the connections and their markings.
- measure the voltage and/or current values.

These interventions, however, must be performed using equipment which ensures appropriate levels of electrical protection.



### Warning:

### adhere closely to the following advice

- When making connections always follow the instructions and the Wiring Diagrams on pages 6-7.
- Check that the user equipment power consumption is compatible with the technical features described.
- Install in such a way that there is always adequate heat disposal.
- Always install under other equipment which produces or spreads heat..
- Handle and connect without mechanically stressing the electronic card.
- Make sure that no copper conductor cuttings or other waste material fall inside the equipment.

THIS CONTROL UNIT IS NOT SUITABLE FOR OPERATING IN THE FOLLOWING CONDITIONS:

- Where the environmental temperature is outside the limits specified in the present technical manual.
- Where the air pressure and temperature variations are so rapid as to produce exceptional condensations.
- Where there are high levels of pollution caused by dust, smoke, vapour, salts and corrosive or radioactive particles.
- Where there are high levels or heat from radiation caused by the sun, ovens or the like.
- Where attacks from mould or small animals are possible.
- Where there is the risk of fire or explosions.
- Where the switch-board can receive strong vibrations or knocks.

#### CONDUCTION AND MAINTENANCE

The following maintenance operations should be performed every week:

- check that the indicators function;
- check that the conductors are tight, check the condition of the terminals.

#### ELECTROMAGNETIC COMPATIBILITY

This control unit 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 CONTROL UNIT 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 to the manufacturer.

**YOUR ELECTRICAL TECHNICIAN CAN ASK ANY QUESTIONS ABOUT  
THIS CONTROL UNIT BY TELEPHONING OUR TECHNICIAN**

## TECHNICAL DATA

-	Nominal mains voltage	400 VAC
-	Frequency	50÷ 60Hz
-	Supply voltage	24VAC or 110÷ 230VAC ±10%
-	Power supply tolerance	±10%
-	Absorbed power	4 W
-	Nominal insulation voltage:	
	• terminals at mains voltage	400VAC
	• terminals from 3 to 14	24 VAC
-	Capacity of contacts:	
	• contactors control	MAX 16A (AC1) 250 VAC
	• contacts for remote monitoring	MAX 5A (AC1) 250VAC
-	Insulation class	CLASS 1
-	Voltmeters	MAX 570V Precision ±2%
-	Ammeters	MAX 1200A Precision ±2%
-	Frequency meter	0÷-85 Hz, Precision ±2%
-	Wattmeter	MAX 830 KW
-	Serial communication parameters	9600 baud, 8 bit data, 1 bit stop; EVEN parity
-	Degree of protection:	
	• front	IP64
	• rear	IP20
-	Temperature range	-10 + 60 °C
-	Installation conditions	for internal use
-	Weight	869 gr
-	Dimensions (LxHxP) mm	243 x 170 x 62
-	Hole	227X155

## ORDERING DATA

TYPE CEA-12845-485

Code 00242290

## ACCESSORIES KIT

KIT MU-CEA-12845-485

Code 40804524