

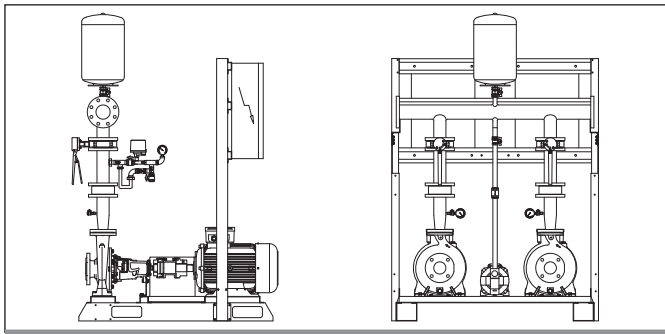
EJ, DJ, EDJ

UNI-EN 12845 fire-fighting systems



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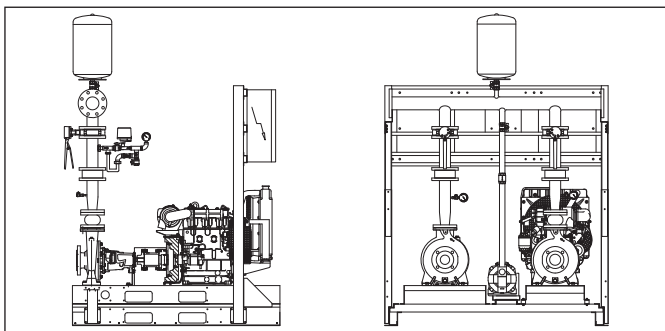


EJ 11

UNI-EN 12845 units with 1 N series electric main pump

EJ 21

UNI-EN 12845 units with 2 N series electric main pumps



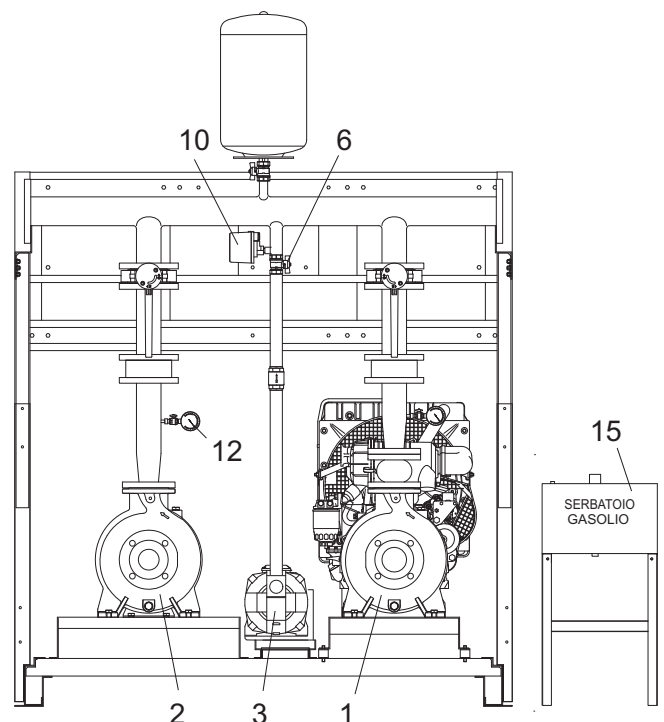
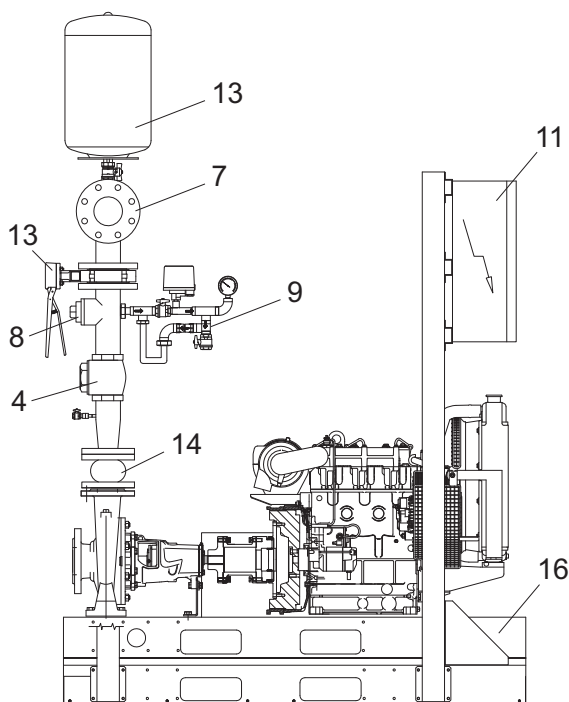
DJ 11

UNI-EN 12845 units with 1 N series main pump (diesel motor)

EDJ 21

UNI-EN 12845 units with 2 N series main pumps (electric and diesel motors)

Construction



- 1) Main pump (with diesel motor)
- 2) Main pump (with electric motor)
- 3) Jockey pump
- 4) Non-return valve
- 5) Lockable valve
- 6) Ball valve
- 7) Delivery manifold
- 8) Sprinkler connection for protection of pump room
- 9) Starting system for main pump composed by two pressure switches, one 0-16 bar glycerine filled pressure gauge, ball valve, by-pass circuit.
- 10) Start-Stop system for jockey pump composed by one pressure switch and one 0-16 bar glycerine filled pressure gauge.

- 11) Electric control panel (one for each pump)
- 12) Pressure switch for "pump running" signal, re cycling water connection and 0-16 bar glycerine filled pressure gauge.
- 13) 20-lt PN 16 membrane pressure tank
- 14) Compensating joint for vibration damping
- 15) Diesel tank on a separate pedestal (6 hour autonomy)
- 16) Painted steel skid

All the butterfly valves or ball valve are locked in the normal position by means of a lock and key.

On request: anti-vibration couplings in both the suction and delivery sections.

Construction

Units constructed in accordance with UNI-EN 12845 standards for automatic fire-fighting systems (with sprinkler) and according to UNI 10779 for fire-fighting systems with fire hydrants.

The units may be composed of 1 or 2 main pumps.

Units are fitted with a jockey pump, with which the system pressure level can be maintained without having to start the main pumps.

When two pumps are installed, each one shall be capable of providing the specified flows and pressures independently.

When three pumps are installed, each pump shall be capable of providing at least 50% of the specified flow at the specified pressure.

Application

For feeding water to automatic fire-fighting systems and units with hydrants.

Operation

The pumps start operating after a fall in the pressure level in the fire-extinguishing system.

The first pump to be triggered is the jockey pump.

If this pump cannot restore the pressure level, the main pump starts.

When there is more than one main pump, the pumps start in cascade sequence, with the starting pressure switches set at different pressure levels.

The pressure switches of the main pumps are used only for starting, as the pumps must be stopped manually for UNI-EN 12845 units or automatically with a timer for UNI 10779 sets.

The recirculation diaphragm allows for operation of the main pumps also when the delivery port is closed (with no consumption of water in the system), avoiding overheating of the water inside the pump body.

Pumps

Main pumps

The N series centrifugal pumps are coupled with the electric or diesel motor through a bearing coupling. This solution allows to operate on the hydraulic part without moving the motor.

Jockey pump

Jockey pump can be a self-priming jet pump, a centrifugal pump with two impellers.

The maximum pressure developed by the jockey pump is always greater than the pressure of the main pumps.

Motors

Two-pole induction type, 50 Hz, n = 2,900 rpm

Three-phase 230/400V ± 10% up to 3 kW

400/690V ± 10% 4 kW and higher.

Insulation class F

Protection IP 55.

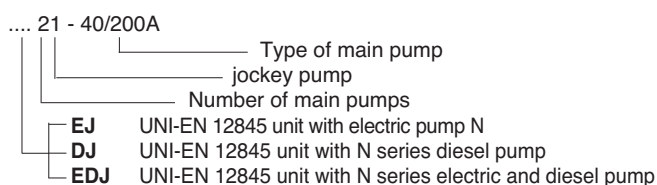
Construction in accordance with: IEC 60034

Other voltage and frequency ratings available on request

Diesel motors (for standardised N-series pumps)

These are direct-injection pumps fitted with electric control box, fuel tank, starter batteries and silencer.

Designation of units



Hydraulic components

Each main pump is fitted with:

- Butterfly valve in the suction section (on request only for installation with positive suction head).
- Pressure gauge in the delivery section.
- Recirculation diaphragm.
- Non return valve of the accessible swing-type or dual disc non-return valve, depending on the models.
- Butterfly valve in the delivery section.
- Manual test circuit with pressure switches, pressure gauge, non-return valve and ball valve.

The jockey pump is fitted with:

- Ball valve in the suction section.
- Non-return valve and ball valve in the delivery section.
- Circuit with pressure switch, pressure gauge, non-return valve and ball valve.

Other components:

- Delivery manifold.
- Coupling for connection of a priming tank (to be used only for the pumps installed with positive suction head).
- The suction manifold is never supplied as such execution is forbidden by the standards.
- 20-lt cylindrical tank on the delivery manifold.
- Arrangement for sprinkler connection to the pump compartment
- Pressure switch for pump working signal

On request:

- Manifold for flow meter.
- Adjusted-flange, diaphragm type, flow meter.
- Eccentric conical reducers on suction side.
- Interception valves on suction side (for installations under positive suction head).

Electric boxes

Electric main-pump box (electric motor)

Each main pump has its own electric control board housed in a metal cabinet with IP55 protection. The box contains the devices required for operation and control of the pump.

Motor starting is direct for power ratings up to 18.5 kW.

For motors with a rating equal to or higher than 22 kW pump starting is of the Y/Δ type with fuses, contactors and timer.

- Timer for pumps stop after 20 minutes (UNI 10779)

The following devices are located on the internal door panel:

- Line-sectioning handle - Voltmeter and ammeter on display
- "Manual-0-Automatic" selector with extractible key only in "automatic" position - Start/Stop pushbuttons - Pilot lights to indicate: no-volt, pump running, pump stops, low-pressure.

Electric main-pump box (diesel motor)

This cabinet contains the electronic control devices for the control of the diesel motor and the battery chargers for feeding the starter accumulators.

The following devices are located on the front of the box:

- Line-sectioning handle.
- Front panel of the electronic unit.
- Manual-0-Automatic selector with extractible key only an "automatic" position.

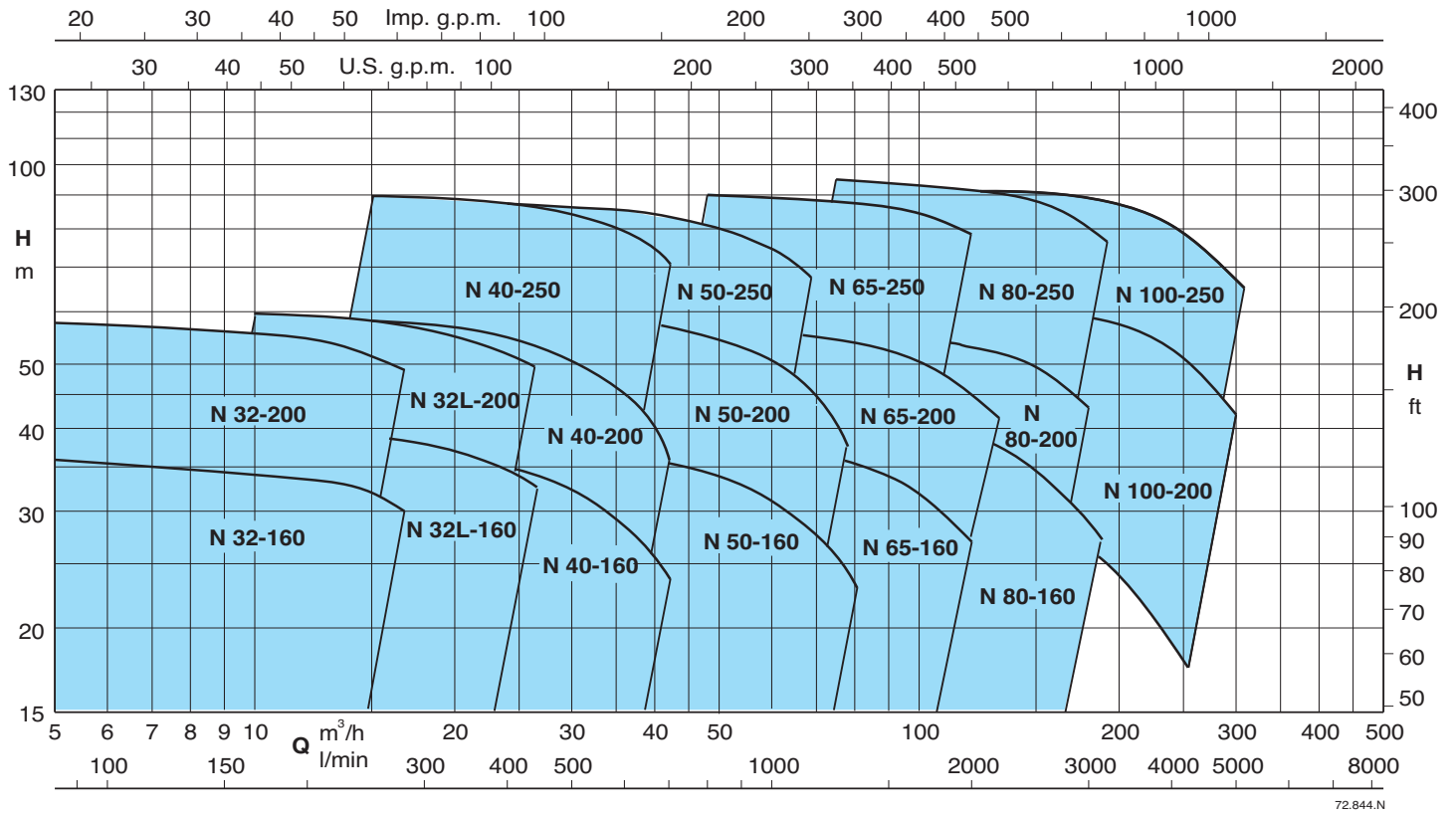
Electric jockey-pump box

When installed, the jockey pump is fitted with its own electric panel, with thermoplastic housing with IP 55 protection.

Control box (on request).

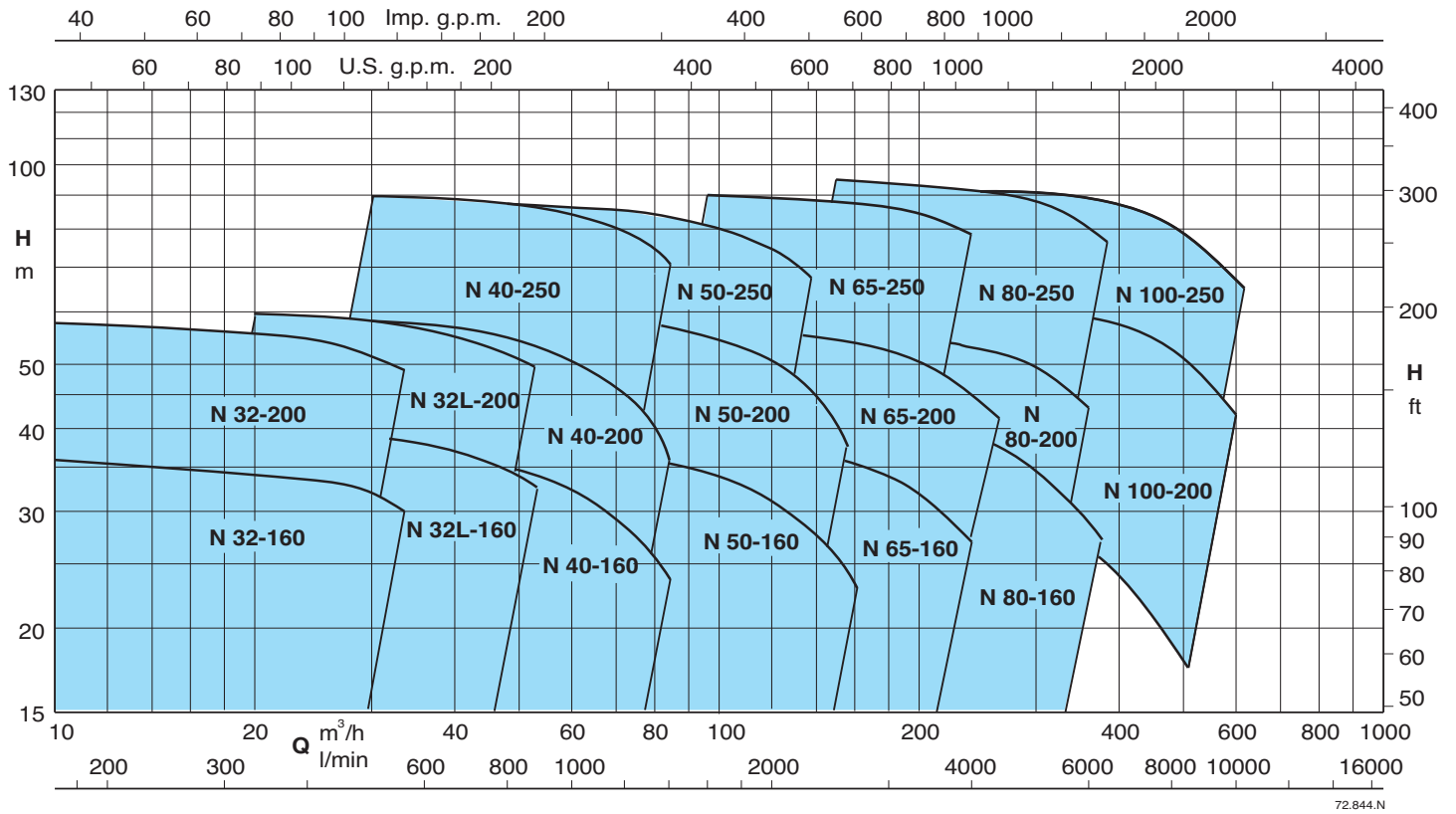
To be installed in a place to be looked after, to signal any possible failure of the unit state. It must be connected to V.220 and it gives an acoustic and visual signal for 24 hours.

With 1 electric main pump in operation



72.844.N

With 2 electric main pumps in operation

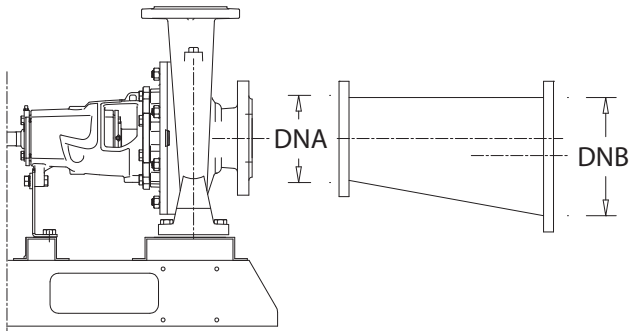


72.844.N

When two pumps are installed, each one shall be capable of providing the specified flows and pressures independently.
 When three pumps are installed, each pump shall be capable of providing at least 50% of the specified flow at the specified pressure.

Accessories

ECCENTRICS REDUCTIONS



Flanged reductions eccentric to be installed in the suction of main pumps, are complete of 1/4" out point, ball interception valve and vacuum gauge (or gauge on request). To choose it take the diameter inlet of the main pumps DNA (limit of standard) and then consult the following tables in order to define the enlargement of the eccentric cone DNB (depending on the type of installation: suction lift or positive head).

Clarification: the previous tables suggest only indications concerning the maximum permissible speed in suction of main pumps, that choice may not be enough because the standard EN 12845 requires also that the suction piping, including all valves and fittings, shall be designed in such a way as to ensure that the available NPSH at the pump inlet exceeds the required NPSH by at least 1 mt at the maximum pump flow as shown in table 14 of the EN 12845 norm.

TYPE	DNA	DNB
RE50-65	DN50	DN65
RE50-80	DN50	DN80
RE50-100	DN50	DN100
RE50-125	DN50	DN125
RE65-80	DN65	DN80
RE65-100	DN65	DN100
RE65-125	DN65	DN125
RE65-150	DN65	DN150
RE65-200	DN65	DN200
RE80-100	DN80	DN100
RE80-125	DN80	DN125
RE80-150	DN80	DN150
RE80-200	DN80	DN200
RE80-250	DN80	DN250
RE100-150	DN100	DN150
RE100-200	DN100	DN200
RE100-250	DN100	DN250
RE125-200	DN125	DN200
RE125-250	DN125	DN250
RE125-300	DN125	DN300
RE150-250	DN150	DN250
RE150-300	DN150	DN300
RE150-350	DN150	DN350
RE150-400	DN150	DN400
RE200-300	DN200	DN300
RE200-350	DN200	DN350
RE200-400	DN200	DN400

Quick selection table for eccentric reductions

To maintain inside the suction pipe of the main pump flow velocities indicated in the standard EN 12845, depending on the maximum flow rate required by the plant, you have to enlarge the suction port of the main pump to the minimum diameter indicated in the following table:

		POSITIVE HEAD INSTALLATION					Water Speed ($V \leq 1,8$ m/s)				
Q (l/m)		0+358	359+542	543+848	849+1324	1325+1907	1908+3390	3391+5297	5298+7626	7627+10381	10382+13558
Ø min		DN65	DN80	DN100	DN125	DN150	DN200	DN250	DN300	DN350	DN400

		SUCTION LIFT INSTALLATION				Water Speed ($V \leq 1,5$ m/s)				
Q (l/m)		0+452	453+706	707+1103	1104+1589	1590+2824	2825+4413	4414+6355	6356+8650	8651+11299
Ø min		DN80	DN100	DN125	DN150	DN200	DN250	DN300	DN350	DN400

ELASTIC VIBRATION COMPENSATORS



TYPE	DN
CE-50	DN50 PN16
CE-65	DN65 PN16
CE-80	DN80 PN16
CE-100	DN100 PN16
CE-125	DN125 PN16
CE-150	DN150 PN16
CE-200	DN200 PN16
CE-250	DN250 PN16
CE-300	DN300 PN16
CE-350	DN350 PN16
CE-400	DN400 PN16

In presence of diesel motorpump is recommended to install on suction an elastic anti-vibration compensator to dampen the vibrations (in the delivery of the pump is already present). By inserting a compensator between two manifolds you can connect each two fire fighting modules.

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Accessories

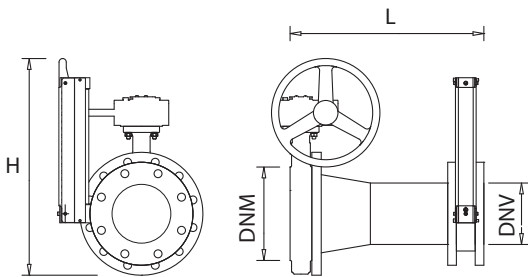
INTERCEPTION BUTTERFLY VALVES “LUG” TYPE



TIPO	DN
LUG-50	DN50
LUG-65	DN65
LUG-80	DN80
LUG-100	DN100
LUG-125	DN125
LUG-150	DN150
LUG-200	DN200
LUG-250	DN250
LUG-300	DN300
LUG-350	DN350
LUG-400	DN400

Interception butterfly valve LUG type, with threaded ears, complete with operating lever up to DN100 and hand-wheel for larger diameters

KIT FLOWMETER



TYPE	Flowmeter	Full scale (m³/h)	Connections		L (mm)	H (mm)
			DNM	DNV		
KM-65-40	T40	55	DN65	DN40	412	452
KM-65-50	T50	90	DN65	DN50	465	452
KM-80-65	T65	140	DN80	DN65	540	460
KM-100-80	T80	200	DN100	DN80	635	470
KM-125-100	T100	280	DN125	DN100	770	485
KM-150-125	T125	480	DN150	DN125	910	550
KM-200-150	T150	600	DN200	DN150	1045	600
KM-250-200	T200	1000	DN250	DN200	1335	670
KM-300-250	T250	1600	DN300	DN250	1630	730

Kit of connection between the fire fighting delivery manifold and the flow meter, composed by: interception valve, steel galvanized socket with adequate length and flowmeter. In the case of flanged composition is also supplied with the counter-flange to be inserted after the flowmeter, with two black rubber gaskets and bolts for fixing the flowmeter. Please note that is necessary the insertion after the flowmeter of another interception valve for adjusting the water flow.

SELF-POWERED REMOTE ACOUSTIC/LUMINOUS ALARMS

These equipments permit monitoring and remote signaling of fire alarms related to the fire fighting booster set, in according to the EN12845 standard.

RA 12845



- Tipo RA 12845 (no. 4 alarm input “Level A” and no. 12 alarm inputs “level B”)
- Features: Electronic control panel for alarm signalling
 - Input voltage 1 ~ 50/60Hz 230V±10%
 - Transformer 230 V/24 V for auxiliary circuit
 - Nr.4 very low voltage input from free NC contact for alarm fire “level A” (at the opening of the NC contact the red flashing light and the buzzer activate)
 - Nr.12 very low voltage input from free NC contact for alarm breakdown “level B” (when opening the NC contact the yellow flashing light and the buzzer activate)
 - Nr.1 very low voltage input from free NO contact for alarm breakdown “Level B” (when closing the NO contact the yellow flashing light and the buzzer activate)
 - Green light for power on
 - Red light for “alarm”
 - Red light for “beacon excluded”
 - Pushbutton “test” for temporary activation of the beacon
 - Pushbutton “reset” for manual restoration of the alarm
 - Pushbutton “beacon activation” for the activation of the acoustic alarm
 - Pushbutton “beacon exclusion” for the exclusion of the acoustic alarm
 - Internal selector for selecting the alarm restoration mode (automatic-manual)
 - Internal selector for activation of the timer for automatic switch-off of the beacon
 - Trimmer for automatic switch-off time delay selection (from 25” to 120”)
 - Alarm beacon 90dB 12Vcc
 - Sealed internal battery for back-up 12Vcc 1,2Ah
 - Auxiliary protection fuse
 - Battery protection fuse
 - General alarm output with exchangeable contact (max 5A 250V AC1)
 - Red flashing light 12Vcc; Yellow flashing light 12Vcc
 - Box in thermoplastic material
 - Output with cable holder
 - Protection IP55; Ambient temperature: -5/+40 °C