TECHNICAL FEATURES of A6 PANELS for ELECTRIC REMOTE CONTROLLED MONITORS

General description

The remote controlled monitors are available with foam/water flow rates from 50 up to 30.000 lt/min. and consequently these are the possible flow rates of the systems with Caccialanza electric remote controlled monitors.
The monitors are manufactured in 6 different types: A1, A2, A3, A4, A6 and A8.
The monitors type A3, A4, A6 and A8 are foreseen for the connection to the A6 type Panels, with a flow rate from 1.000 up to 30.000 lt/min
The monitor protection degree is IP 65.
The monitors A3, A4, A6 and A8 types are available also in Ex-proof execution for mounting in hazardous areas where explosions may be caused either by gas or powder.
The whole monitor system can be realized with the same max. protection degree as the monitor one.

A monitor system consists of the required number of monitors, their standing poles (if the monitors are required in elevated position) and the command and control panels.

The panel types are the following ones:
- Power panels -
- Power panels with local control devices -
- Remote control panels -
- Self standing remote control panels -
- Portable remote control panels with cable -
- Portable radio remote control panels.

Caccialanza remote controlled monitor systems are always designed to minimize the number of electric cables required for connection, thus reaching the double purpose to maximize operating safety and to minimize total costs for realization and maintenance of the system (with total costs we mean not only costs of the fire fighting components of the system, but also costs of the required cables, costs of the civil and mechanical works for their protection in case of fire and costs of installation of all the components).

Therefore, for all the actuators of all the monitor types a single cable (resistant to flames for 180 minutes and to acids) is enough to perform both power and control functions.

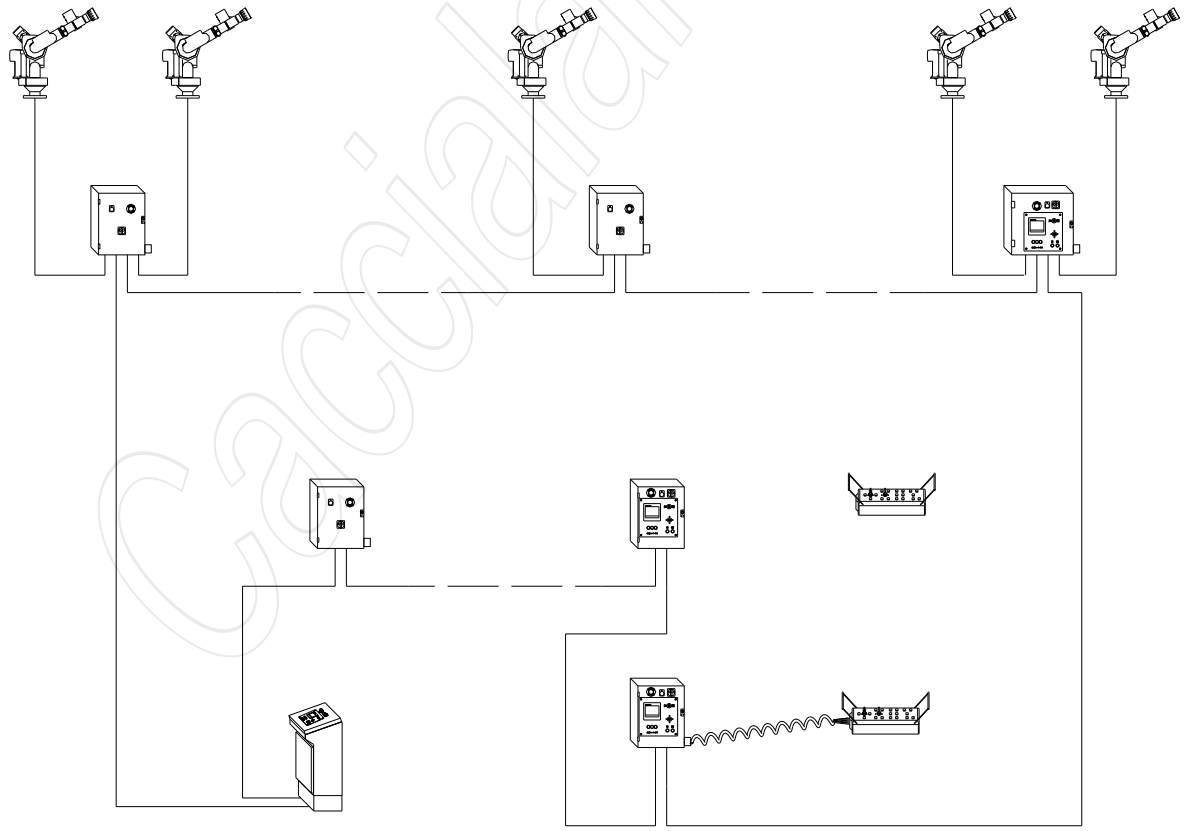
All the remote controlled monitor system components are manufactured according to the European directives and are EC marked.
For Ex-proof systems European directives ATEX are applied and all the electric components are certified by a notified body, in addition to the manufacturer's declaration of conformity.

Power panels are usually placed near the monitor (or if cheaper near 2 monitors).
Each power panel is connected to the other command and control panels by means of a single serial cable, realized in a twin loop to optimize the system reliability.
Depending on environmental conditions and on the required performances, the connection can be performed both with traditional copper conductors and with optical fiber.

The standing poles are manufactured to house all the monitor conductors inside and are equipped with an automatic cooling system using the water/foam supply pipe of the monitor.
The cooling system involves also the eventual power panel mounted at the base of the monitor.
Also the water/foam supply pipe is protected inside the pole:

Panels

The typical layout of a system with Caccialanza electric remote controlled monitors is shown in the following scheme:



One or more monitors can be connected to each power panel, depending on the distance between the units.
In the system there can be command panels, both fixed and mobile, in the required quantity and position.
On the power panels there is usually a socket for connection and contemporaneous power supply of a portable command unit, usually used for control and maintenance activities.
There are also panels without commands, that can be placed anywhere, equipped with a special socket and used exclusively for connection of command portable units.
In line of principle, each remote control panel, fixed or portable, can command selectively any monitor of the system.
Depending on requirements and specifications, selection can be restricted to one monitor or to groups of monitors.

Connection of the power and command panels to one another is performed with a single line, preferably in a loop and in case in optical fiber.
In case of systems with many monitors it is possible to realize a hierarchic architecture with loops at more levels, enabling the remote control units of higher levels to command monitors belonging to more loops of lower level.

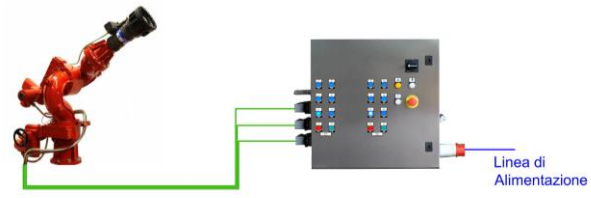
The connection between each monitor and the related power panel is performed by means of a single power and command cable for each actuator of the monitor (rotation, elevaton, nozzle, foam / water supply valve).
Up to a max. distance of 30 m. the connection can be direct; in case of longer distances a terminal cabinet has to be placed near the monitor and the remaining distance has to be covered with cables dimensioned for the required distance.

The power panel is available in two versions, for a single speed of movement of the monitor or for three speeds (normal, reduced, for precision aiming, and high, to reach fast the area to be protected).
In the standard one speed version it is possible to have, as additional performances, the feedback of the monitor position (which enables to get on the command panels a graphic and numerical indication of the monitor rotation/elevation angles besides the nozzle opening) and the operation with self-oscillating vertical/horizontal movement (with an angle to be set by the operator around a central position that can be preset or chosen during the fire extinguishing operation).
Both the performances are foreseen in the three speed version.

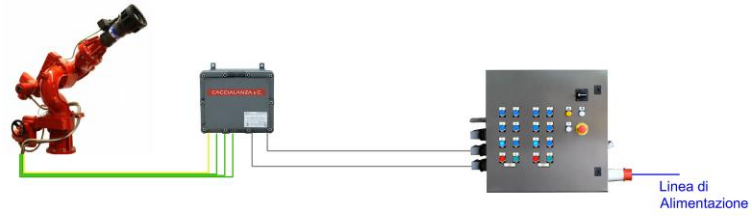
The power supply of the system in the standard panel execution is usually 400V/ 3 Ph / 50 Hz. Versions with 3 Ph alternate current and different voltages and frequences are also possible.
Also the 3 speed version is usually 400V/ 3 Ph/ 50Hz but, besides versions with 3 Ph alternate current and different voltages and frequences like in the standard version, in this execution versions with 1 Ph alternate current 240 or 400V with frequence 50 or 60Hz (other voltages on request) are possible.
The system is also available with direct current 110 V.

Hereinafter possible configurations are shown. In the system there can be as many fixed command panels or sockets for connection of portable panels as needed.

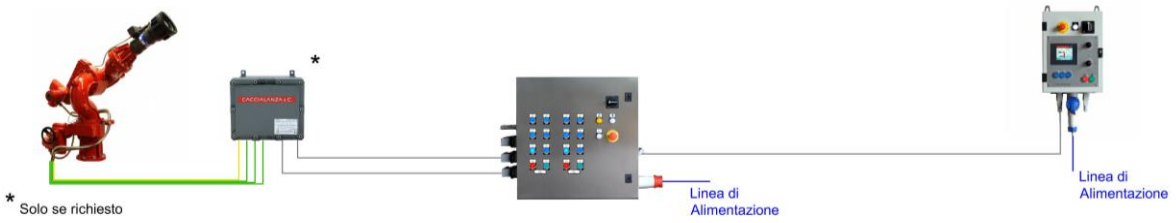
The minimum configuration of the system consists of course of a power panel commanding a monitor directly connected.
The max. distance between the panel and the directly connected monitor is 30 m.



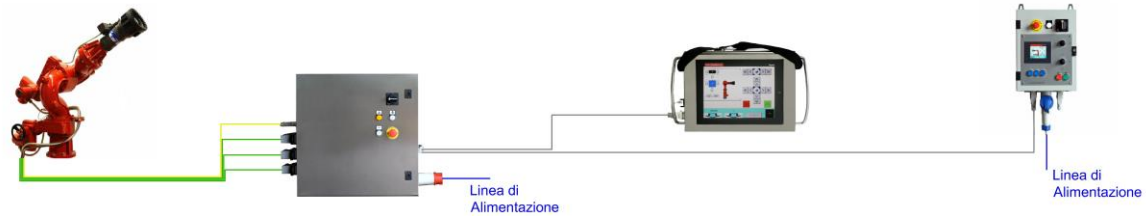
For longer distances between the panel and the monitor a terminal cabinet has to be installed near the monitor.



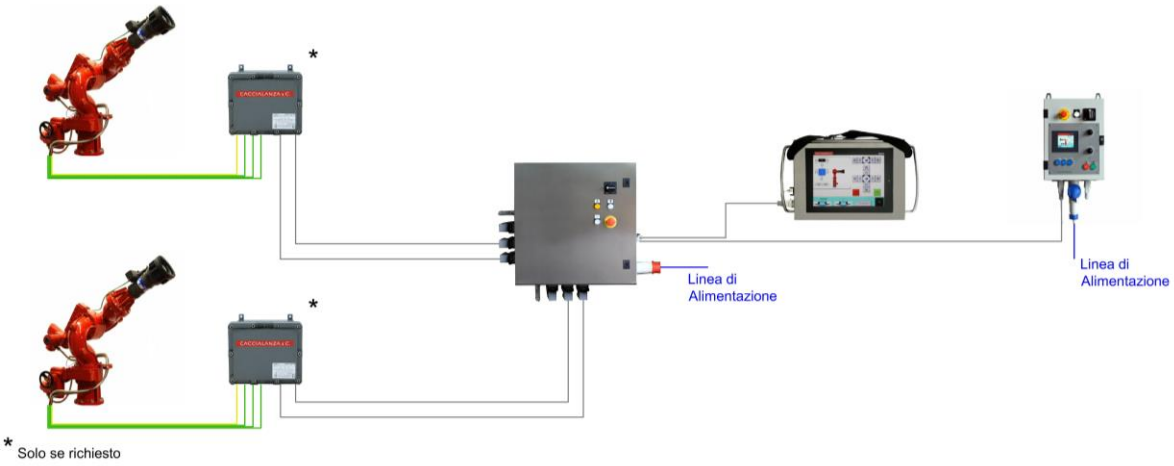
Monitor commands can be placed in a control panel separate from the power panel. The power panel can be equipped also with local commands, or not, as required. In the same way there can be or not the terminal cabinet between the monitor and the power panel according to the requirements.



In any case the power panel is equipped with a special socket for direct connection of a portable command unit by means of a mobile cable whose max. length is 30 m.



The same versions, with and without local commands on the power panel, are possible connecting two monitors to the same power panel.



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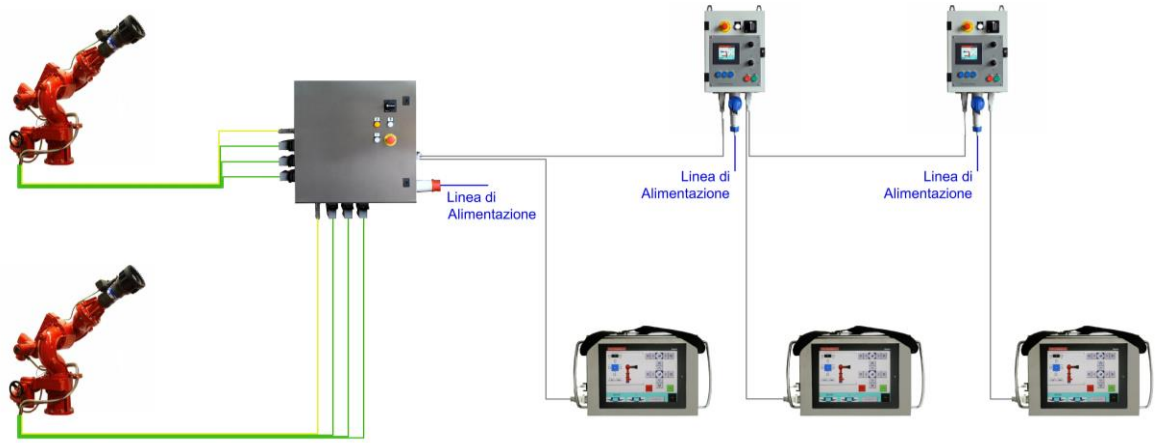
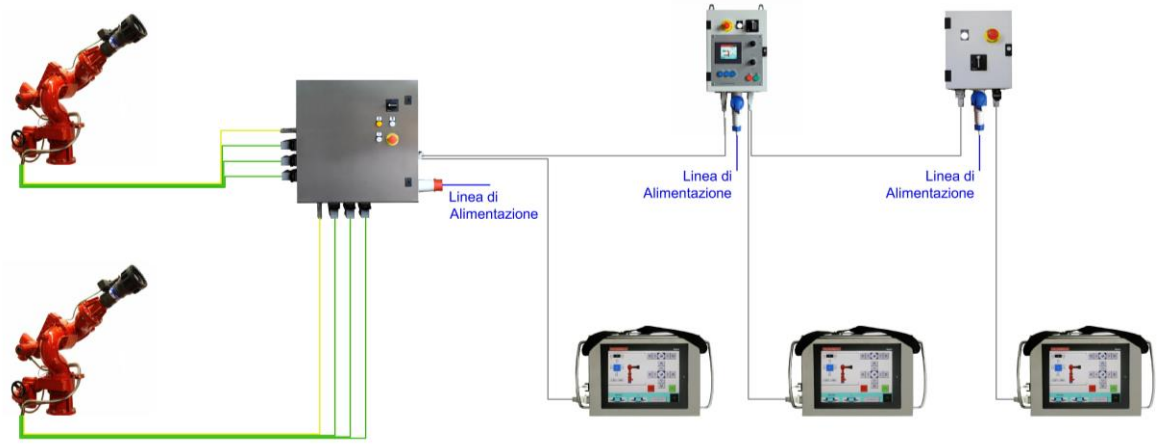
An additional remote command panel can be connected to the power and command panel.
The connection between the two panels is performed by means of a single cable according to communication standard modbus or ethernet.
Also the standard remote command panel is equipped with a special socket for connection of the portable command unit by means of a mobile cable whose max. length is 30 m.

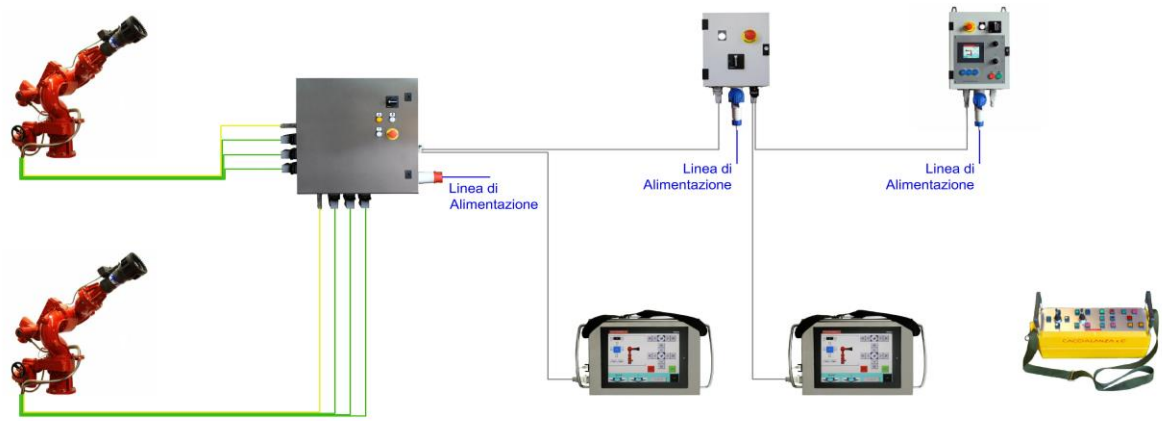


The alternative to the remote panel with socket for portable command is a panel without commands, but equipped only with the special socket for connection of the portable command unit.



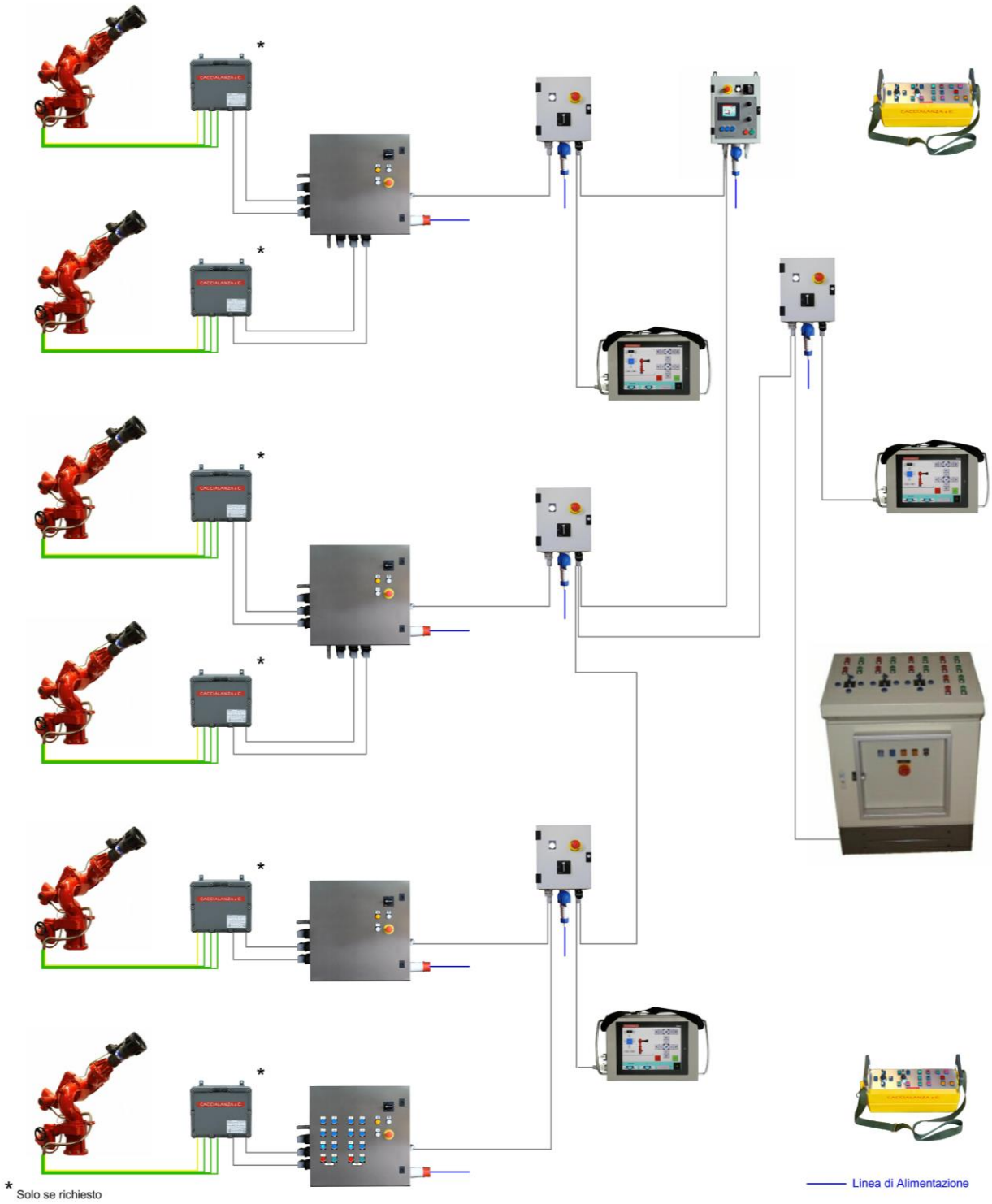
Other standard remote command panels and/or other socket panels for portable units can be mounted in sequence to the first standard remote command panel (or alternatively to the socket panel without commands).

In addition to the possibility to connect with a mobile cable, whose max. length is 30 m., a portable command unit by means of the special standard socket all the system panels are equipped with, in the system can be used also portable command units with radio remote control and battery power supply.



The portable panels with radio connection have all the functions available for the other command panels.
In particular they enable to select the monitor to be controlled among all the system monitors and are equipped with luminous feedback for all the movements both for end position and movement in progress.
The radio connection range is much higher than 100 m. (higher ranges available on request).

The described structure can be used to command at the same time other monitors or other monitor pairs up to the required number.



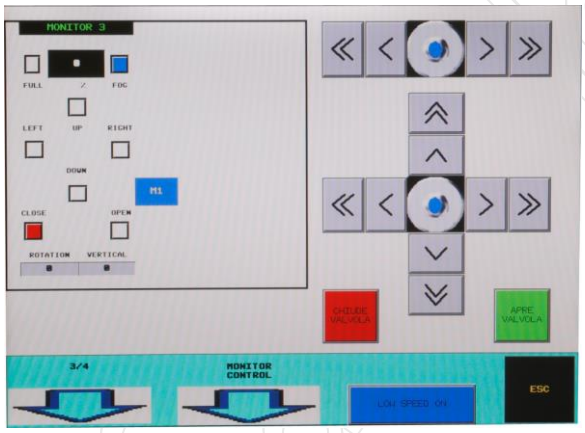
All the above can be supplied also in deflagration proof execution for installation in hazardous areas (explosion danger). In such a case monitors and power panels are supplied in ATEX Eexd execution.

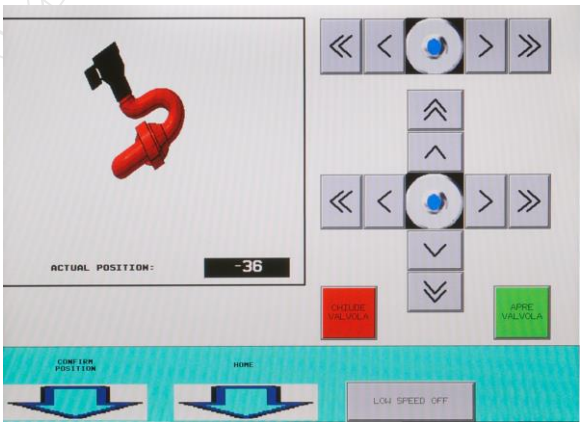
Fixed and portable command panels, in addition to terminal cabinets, are supplied in ATEX Eexe execution.
Alternatively, these components can be supplied in ATEX Eexi (when applicable) or in Eexd execution.
Also the portable radio command is available in ATEX Eexe execution.

Main Features of Remote Controlled Operations

For each monitor the following operations are possible from the panels:

- Selection of the monitor to command/control -
- Command for right / left rotation, with display system for the movement in progress and for the end position (possible with normal, reduced or high speed in case of use of 3 speed panels) -
- Command for up / down movement, with display system for the movement in progress and for the end position (possible with normal, reduced or high speed in case of use of 3 speed panels) -
- Command for opening of the water full jet /spray jet nozzle, with display system for the movement in progress and for the end position (possible with normal, reduced or high speed in case of use of 3 speed panels) -
- Command for water supply valve open / close, with display system for the movement in progress and for the end position -
- Command for horizontal self-oscillating movement -
- Command for vertical self-oscillating movement .





For each monitor all the operations can be performed both from the power and command panel associated to the monitor involved and from any fixed or portable command panel.

Only from the power and command panel it is possible to set the following monitor parameters (in case of use of 3 speed panels) :

- End position value for right / left rotation (in the max. allowed rotation range) -
- End position value for up / down movement (in the max. allowed rotation range) -

- Oscillation value for the self-oscillating horizontal movement (around a preset point with a selected angle) -
- Oscillation value for the self-oscillating vertical movement (around a preset point with a selected angle).