TECHNICAL FEATURES of A2 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 A1 and A2 are foreseen for the connection to the A2 type Panels, with a flow rate from 50 up to 2.000 lt/min
The monitor protection degree is IP 65.
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).

For monitors A1 and A2 types a single cable (resistant to flames for 180 minutes and to acids) is even enough to perform power and control functions of all the functions of all the monitor actuators, valves included.

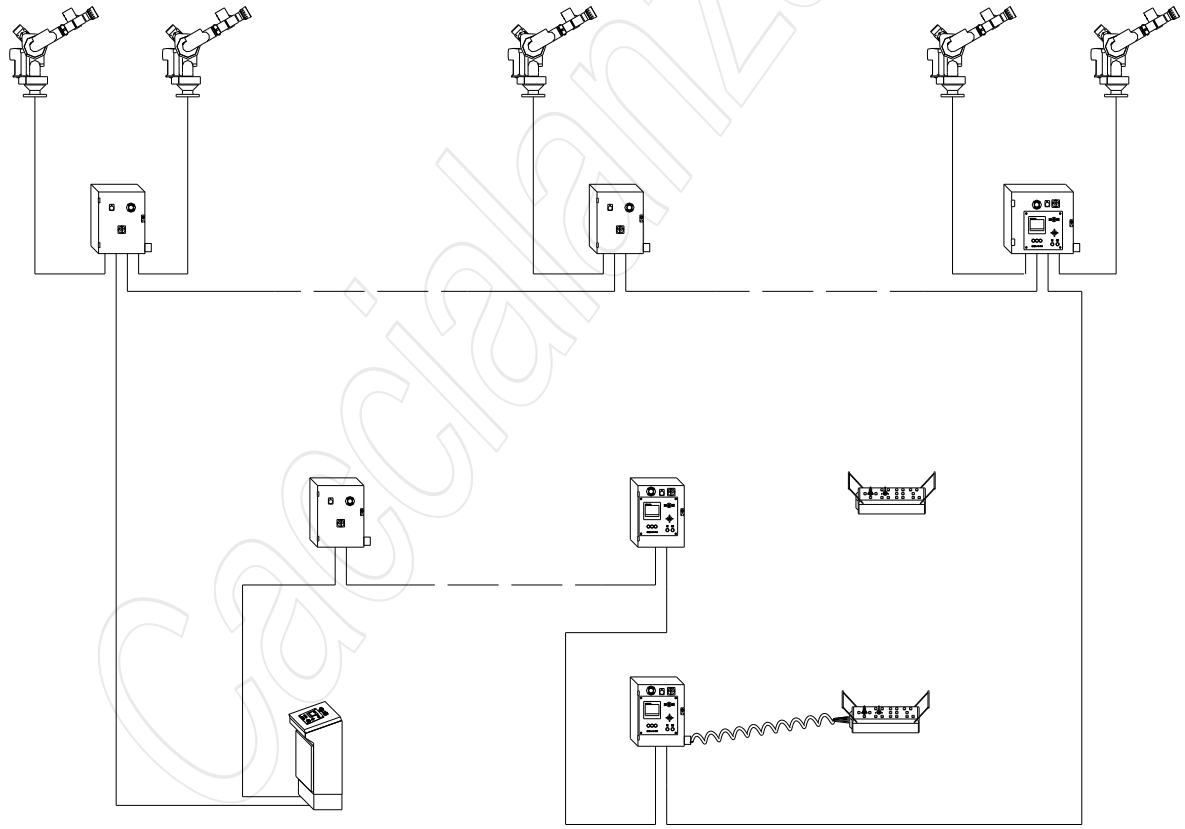
All the remote controlled monitor system components are manufactured according to the European directives and are EC marked.

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 electric remote controlled monitors A1-El and A2-El types have a special command and control system that allows to reduce the number of the required cables to a single bus cable.

The extreme modularity of the basic components enables to get any kind of net.
But in order to simplify realization of most systems and consequently to supply panels at very competitive prices, some standard executions, that will be described later, have been designed.

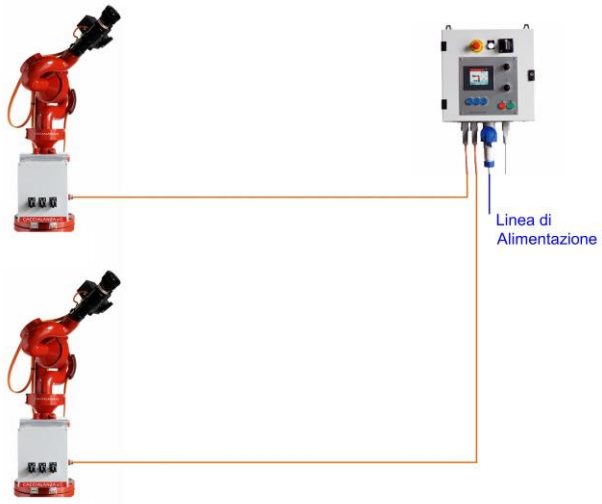
Standard power and command panels for electric remote controlled monitors A1-El and A2-El have been designed for direct connection of one or two monitors.
The standard command panels have been designed for connection of one or two power and command panels.
Therefore, the standard panel system enables command and control of all the functions of a maximum of 4 monitors.
Obviously with customized command and control panels the number of controlled monitors can be increased without limits according to the requirements.
In the same system there can be more subsystems of standard panels, each of which is interfaced only with the related monitors.

Hereinafter the possible configurations of standard panels are shown. In the system there can be a maximum of 4 fixed command panels or sockets for connection of portable panels.

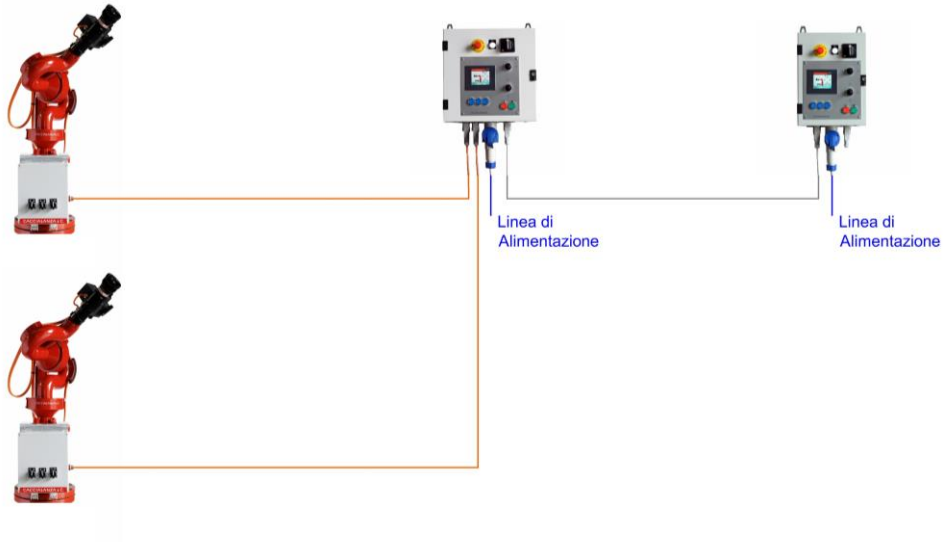
Of course the minimum configuration of the system consists of a panel commanding one monitor.
The max. distance between the panel and the monitor is 25 m.

It is possible to equip the monitor with local commands directly mounted on the monitor.

The same versions, with and without local commands on the monitor, can be realized connecting two monitors to the same power and command panel.

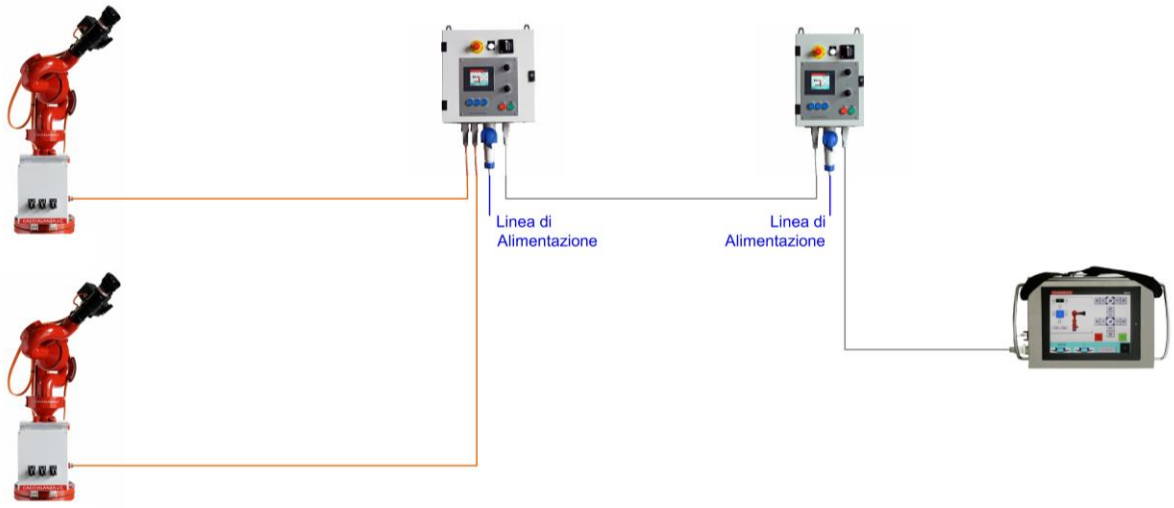


An additional remote command panel can be connected to the power and command panel. The connection between the two panels is performed by means of a single cable according to modbus communication standard.

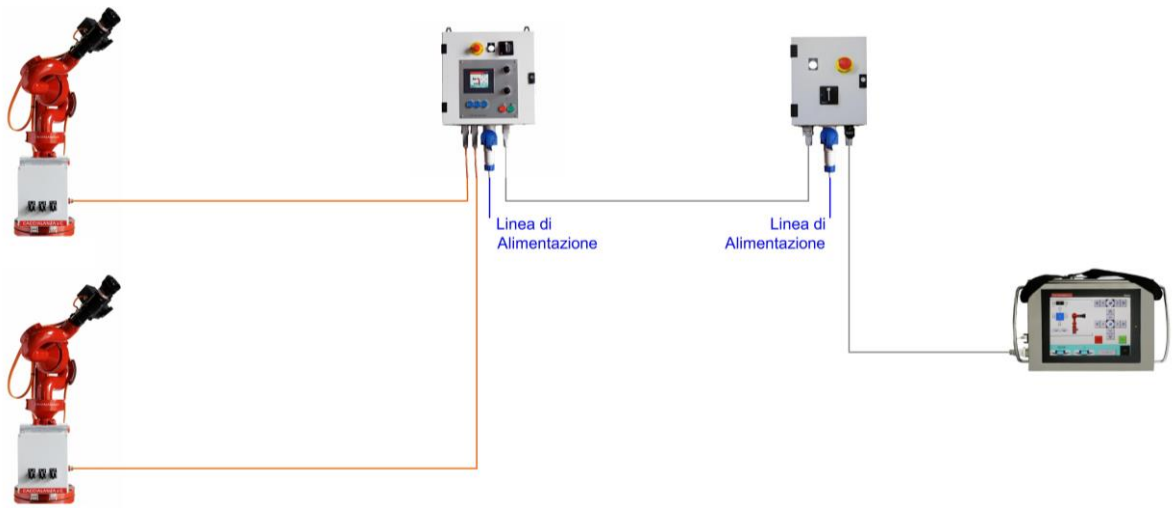


The max. length of the connecting cable is 250 m. (In case of necessity, longer distances, even kms, can be covered using customized (not standard) panels.

The standard remote command panel is also equipped with a special socket for connection of a portable command unit by means of a mobile cable whose max. length is 30 m.

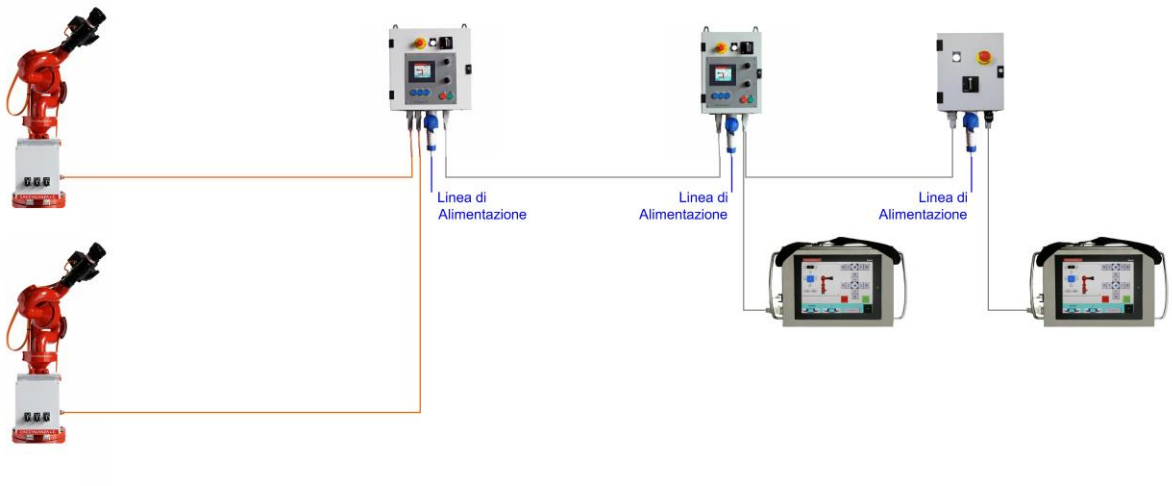


The alternative to the remote panel with socket for portable command is a panel without commands, but equipped only with the special socket for connection of the portable command unit.



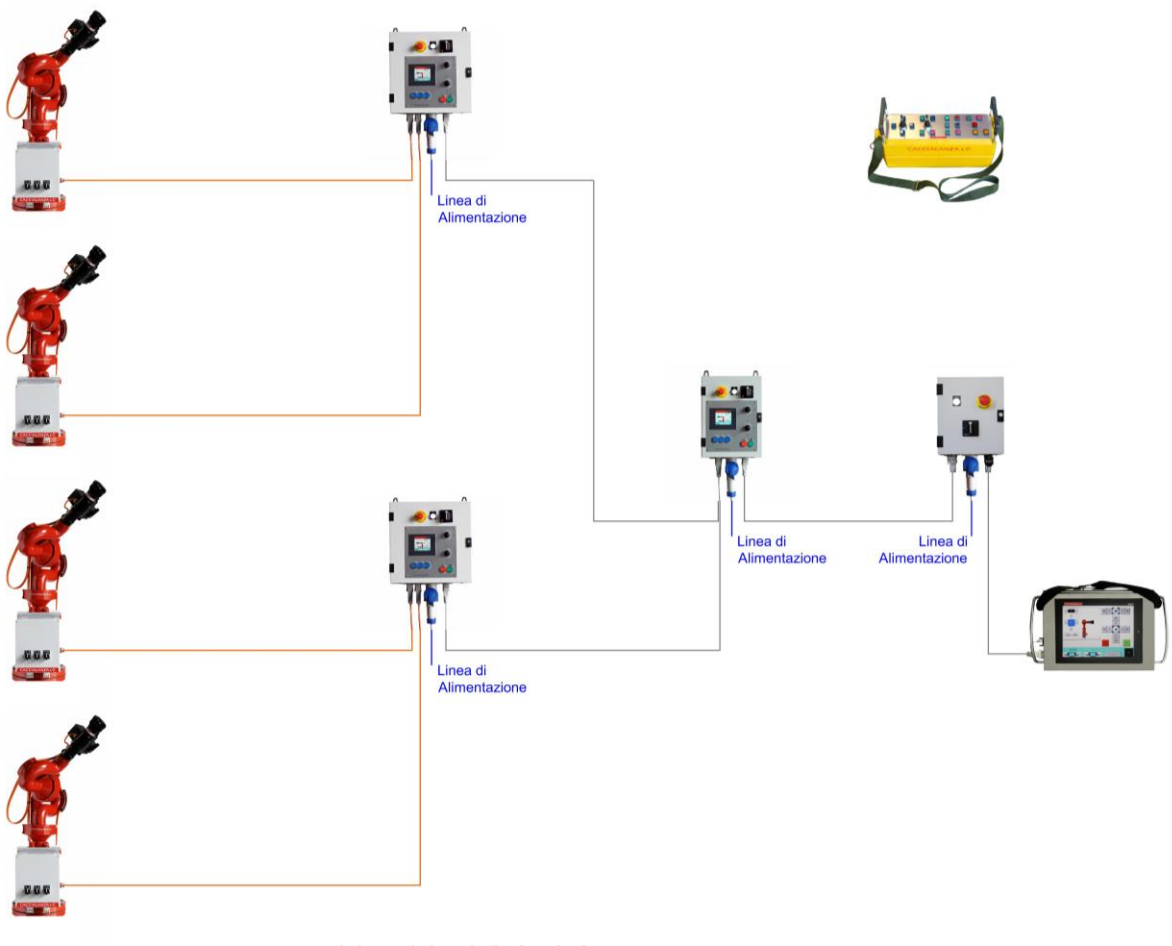
Other standard remote command panels and/or other panels with socket for portable units can be mounted in sequence to the first standard remote command panel (or alternatively to the panel with socket without commands).

The remote panel sequence can be in the required order up to max. 4 additional units.



The same portable unit can be mounted on more sockets, or more portable units can be connected at the same time to more sockets.
The described structure can be used to command at the same time another monitor or another monitor pair up to a maximum of 4 units.

The power and command panels of the standard system required for 3 or 4 monitors will be 2, both connected to the first command panel; while the remaining command net, if required, will be the one already described both for fixed and mobile units.



The limit of 4 monitors in the system depends only on the use of the standard command panels.
Using customized panels an indefinite number of monitors A1 and A2 types can be controlled.

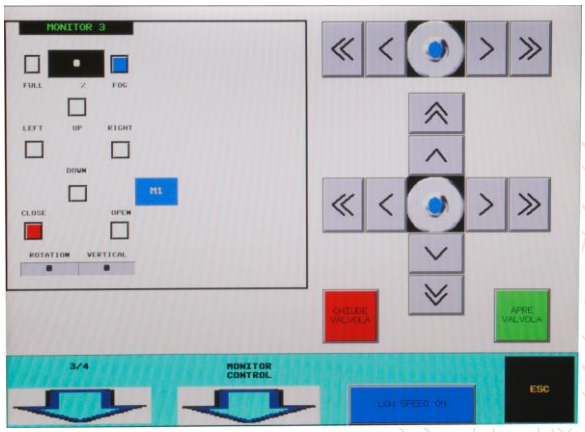
For all the fixed units a power supply 230V / 50Hz (or in alternative 24V direct current) is enough.
The mobile units do not require separate power supply as it is provided by the special socket on the panels.

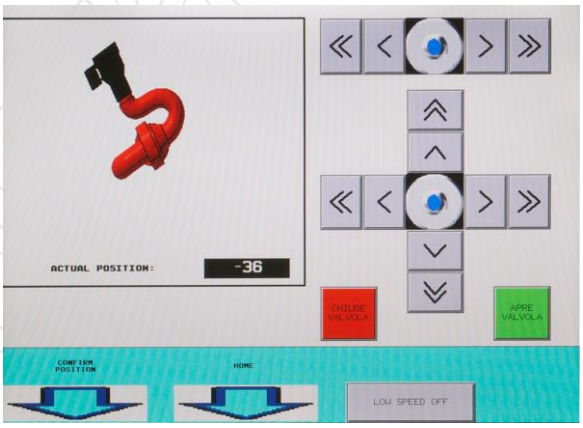
The portable panels with radio connection have all the functions available for the other command panels.
In particular they enable to select the monitor to be controlled among all the system monitors and are equipped with luminous feedback for all the movements both for end position and movement in progress.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

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 (always possible with normal, reduced or high speed) -
- Command for up / down movement, with display system for the movement in progress and for the end position (always possible with normal, reduced or high speed) -
- Command for opening of the water full jet /spray jet nozzle, with display system for the movement in progress and for the end position (always possible with normal, reduced or high speed) -
- 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 (always possible with normal, reduced or high speed) :

- 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).