



# ACCESSORIES FOR SOLAR HEATING SYSTEMS

## 990 Electric actuator for zone ball valves

### INSTRUCTIONS

#### INSTALLATION:

- 1) Line up the manoeuvre stem in the position of the servo-control manoeuvre joint.
- 2) insert the servo-control pushing it in the indicating direction.
- 3) insert the split pin in the hole.
- 4) make sure that the servo-control is correctly assembled.

The servo-control must be installed with the valves completely open.

The servo-controls are supplied in the "open" position and can be installed on all the series of ITAP zone valves.

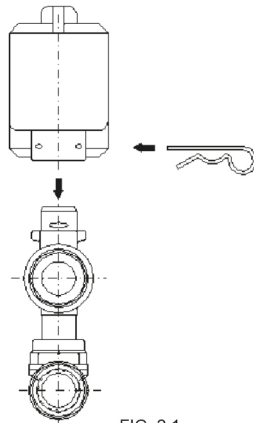


FIG. 2.1

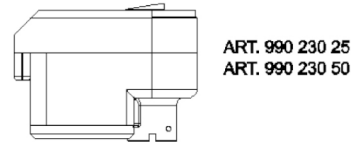


FIG. 2.2

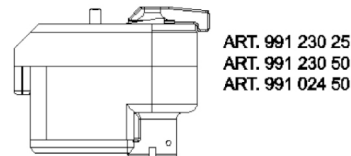


FIG. 2.3

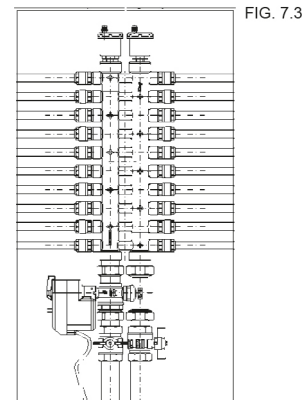
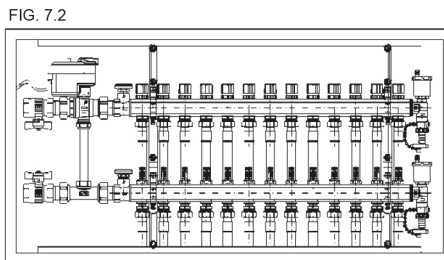
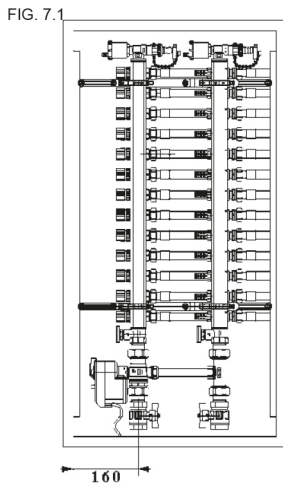
#### WARNING:

The servo control must never be mounted facing downwards.

When installing in metal boxes it is necessary to leave enough space above the servo control for the unblocking device manoeuvres and for eventual maintenances or replacements.

To limit the overall dimensions, position the interception valves as illustrated in fig. 7.2,7.3

To install art 986 in boxes it is necessary to correctly line up the pipes with the coplanar manifold to avoid excessive stress between the servo motor and the valve unit.



#### INTERNAL DIAGRAM:

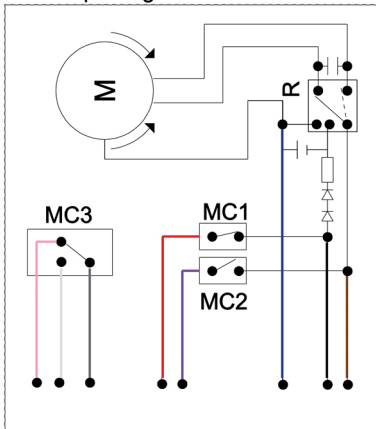
- R relay
- MC1 opening limit microswitch
- MC2 closing limit microswitch
- MC3 auxiliary free microswitch with normally closed and normally open contact



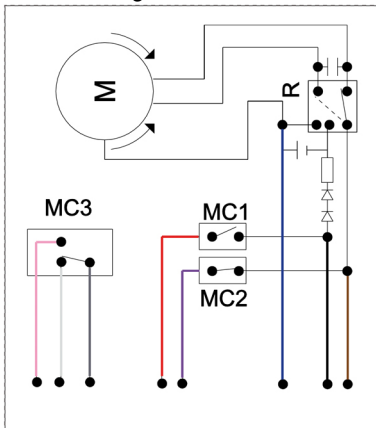
## ACCESSORIES FOR SOLAR HEATING SYSTEMS

- 1) Brown wire always connected to phase
- 2) Blue wire always connected to neutral
- 3) Black wire for command connection
- 4) Purple wire closed valve phase output
- 5) Red wire open valve phase output
- 6) Grey wire common auxiliary microswitch
- 7) White wire N.C. auxiliary microswitch
- 8) Pink wire N.A. auxiliary microswitch

Valve opening



Valve closing



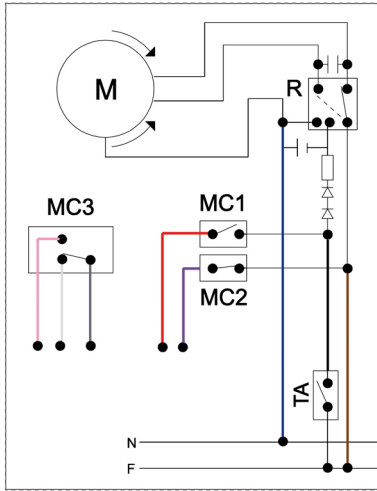
### ENVIRONMENT THERMOSTAT (TA - ET) CONNECTION AND ELECTRICAL POWER SUPPLY DIAGRAM

The thermostat works by means of the zone valve, which opens or closes the distribution circuit of the interested zone based on environment needs.

The Figure illustrates the electrical connection of the actuator with the environment thermostat.



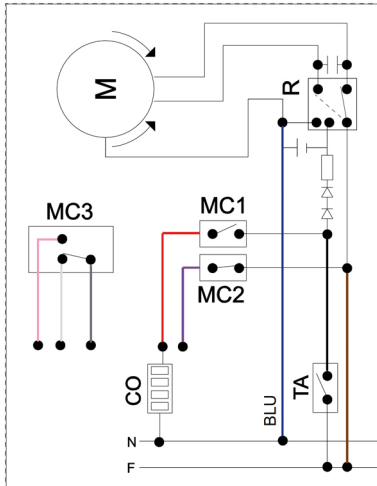
# ACCESSORIES FOR SOLAR HEATING SYSTEMS



HOUR COUNTER (CO - HC) ENVIRONMENT THERMOSTAT (TA - ET) AND ELECTRICAL POWER CONNECTION DIAGRAM

The count is carried out by means of an hour counter, totalling the valve opening times.

The Figure illustrated the electrical connection of the actuator with the hour counter.



PUMP MANAGEMENT DIAGRAM

The figure illustrates the connection of different actuators with the environment thermostat, the hour counter and the pump. In this diagram, the pump is fed by the phase available on the red wire. The special flexibility of the internal actuator wiring model allows you to have different plant solutions.

