ROOM OCCUPANCY STEP CONTROLLER

IVP 318 Eng.

- **On-Off control of a relay by max. 20 switches**
- **Parallel control of one or more electrical devices**
- **Power supply 230 V~; DIN rail mounting**

CE

1. APPLICATION

IVP 318 controller is designed for On-Off control of
- fan;
- pump;
- burner;
- refrigerator;
- valve.

2. FUNCTIONS

The principal function of IVP 318 is :
- Operate a voltage-free SPDT relay according to the status of up to max. 20 switches (e.g. each indicating room occupancy). To function, each switch connected requires a 100Ω resistance in parallel.

- Control output :
  - Three-wire On-Off (SPDT)

3. MODEL AVAILABLE

Code	Description	Max, number of switches in series	Resistance in parallel for each single switch
IVP 318	Room occupancy step controller	20	100 Ω

4. TECHNICAL DATA

• Electrical

Power supply	230 V~ ± 10%
Frequency	50…60 Hz
Consumption	2 VA
Protection	IP40
Radio disturbances	VDE0875/0871
Vibration test	with 2g(DIN 40 046)
Voltage-free output contacts:	
Maximum switching voltage	250 V~
Maximum switching current	5 (1) A
Construction standards	Italian Electrotech. Committee (CEI)
Software	Class A

• Mechanical

Housing	DIN 3E module
Mounting	on DIN 35 rail
Materials:	
Base	NYLON
Cover	ABS

Permitted ambient temperature :	
Operation	0…45 °C
Storage	− 25…+ 60 °C
Permitted ambient humidity	Class F DIN 40040
Weight	0.27 kg

• Setting ranges

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Thresholds for intervention :	
No. switches On	1…20
No. switches Off	0…19
Delay time switching off (Off)	0…255 minutes
Minimum times :	
On operation	0…255 minutes
Off operation	0…255 minutes
Output :	Three-wire On-Off

In the presence of electrical disturbances the output control of IVP 318 may change status but this will automatically return to normal

5. OVERALL DIMENSIONS
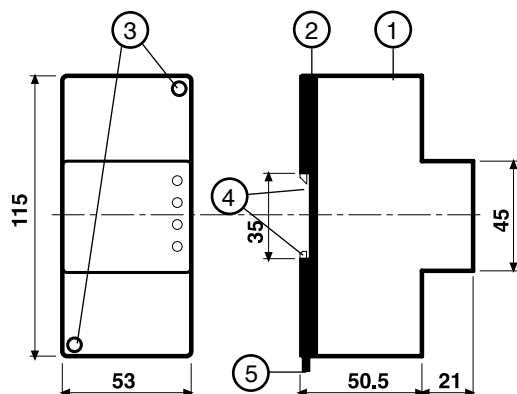
1 – Protective cover for electronic components
2 – Base with transformer, relay and terminal blocks
3 – Screws for securing base and cover
4 – DIN rail securing elements
5 – DIN rail release lever

6. FACIA
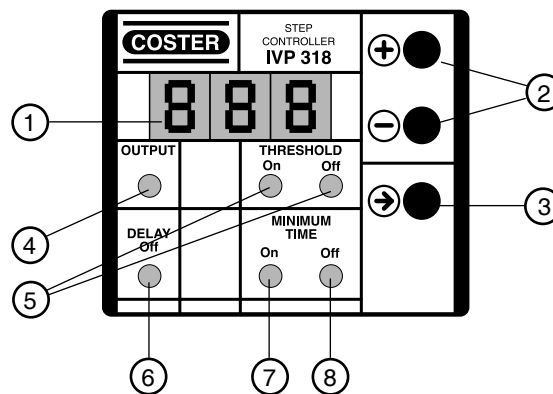
1 – Three-figure numeric display
2 – + and – keys for adjusting parameters
3 – → key for displaying parameters
4 – Control output LED
Parameters shown on display:
5 – Intervention thresholds
6 – Delay switching off
7 – Minimum On time
8 – Minimum Off time

7. INSTALLATION

The controller must be installed in a dry location that meets the ambiental limits given under TECHNICAL DATA. If installed in spaces classified as "Hazardous" it must be mounted in an enclosure for electrical appliances constructed according to the regulations in force for the type of danger concerned. The controller can be mounted on a DIN rail and installed in a standard DIN enclosure.

8. ELECTRICAL CONNECTIONS

Proceed as follows :
• Separate base from cover (loosen the securing screws)
• Mount the base on the DIN rail and check that it is firmly anchored by the securing elements (5.4).
• Carry out the wiring according to the diagram and in compliance with electrical regulations in force and using :
    – 1.5 mm² cables for power supply and relay control output.
    – 1 mm² for control switches
• Apply power (230 V~) and check its presence across terminals L and N.
• Remove power, replace cover on base/terminal block and secure it with the two screws supplied (5.3).
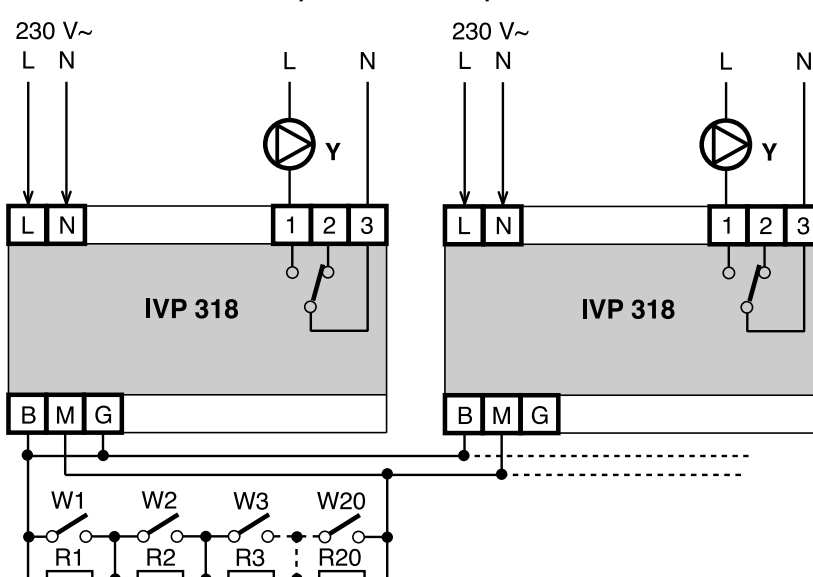
You are advised not to insert more than two cables in a single terminal of controller and, if necessary, to use an external junction box.

9. WIRING DIAGRAMS

Connection single step controller
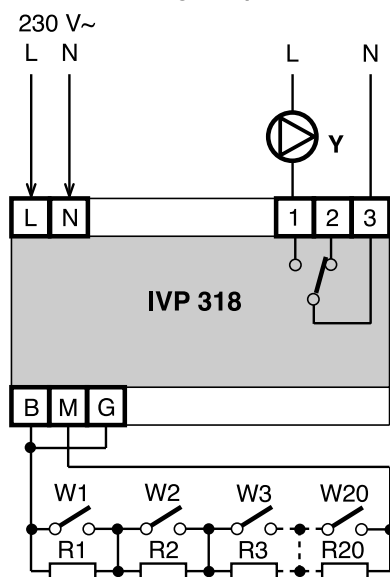
Connection in parallel max. 3 step controllers

Y – Fan
R1...R20 – 100 Ohm (tolerance 1%) resistances

W1...W20 – Room occupancy switches = Switch open : room unoccupied
Switch closed : room occupied

10. OPERATION

IVP 318 is a microprocessor-based digital step controller for On/Off switching of an electrical device such as a fan or pump.

The On/Off status depends on external switches indicating the presence or not of persons in a room **(NB: For the system to work it is essential to mount a 100 Ohm resistance (tolerance ±1%) in parallel to the switch).**

The maximum number of room occupancy switches that can be connected to IVP 318 is 20.

On the IVP 318 facia the following parameters can be adjusted:
- thresholds (i.e. number of room occupancy switches) for On/Off switching
- delay time (in minutes) for switching off the control
- minimum times (in minutes) of operation in On and Off positions

11. ENTERING SETTING PARAMETERS

The setting parameters must be entered after having completed the electrical wiring and the commissioning

The display normally shows the total number of room occupancy switches activated.

The ⊙ key permits viewing the setting parameters.

The ⊕ and ⊖ keys permit adjusting the parameters viewed on the display.

The type of parameter viewed on the display is indicated by the flashing of the relative LED.

If for 60 seconds no key is pressed, the total number of switches activated for rooms occupied returns to the display.

Press and release ⊙ : LED "On" threshold *flashing* with display showing:
Number of switches that must be On for IVP 318 to send "On" signal.
To adjust use ⊕ or ⊖ (No. switches 1…20 max.)

Press and release ⊙ : LED "Off" threshold *flashing* with display showing:
Number of switches that must be Off for IVP 318 to send "Off" signal.
To adjust use ⊕ or ⊖ (No. switches 1…19 max.).

Press and release ⊙ : LED delay "Off" *flashing* with display showing:
Delay time for switching Off control signal (1…255 minutes).
To adjust use ⊕ or ⊖ (Resolution one minute).

Press and release ⊙ : LED minimum time "On" *flashing* with display showing:
Minimum time for switching On control signal (1…255 minutes).
To adjust use ⊕ or ⊖ (Resolution one minute)).

Press and release ⊙ : LED minimum time "Off" *flashing* with display showing:
Minimum time for switching Off control signal (1…255 minutes).
To adjust use ⊕ or ⊖ (Resolution one minute)).

COSTER

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