

# Electro-pneumatic control valves



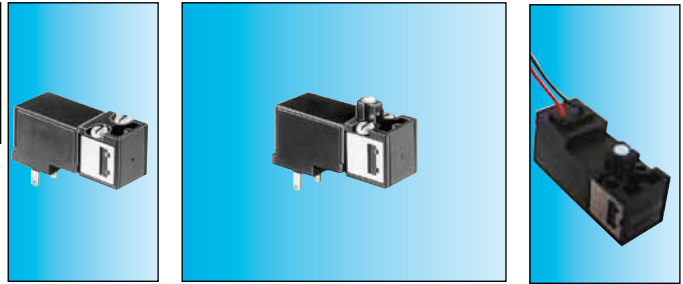


# Miniature solenoid valves for direct current

- Conform to the Low Voltage Directive
- For mounting on sub-base or footprint in accordance with CNOMO recommendation E-06-36-120N



Also available in ATEX version for use in potentially explosive atmospheres in accordance with 94/9/EC Directive



## Part numbers (and voltages)

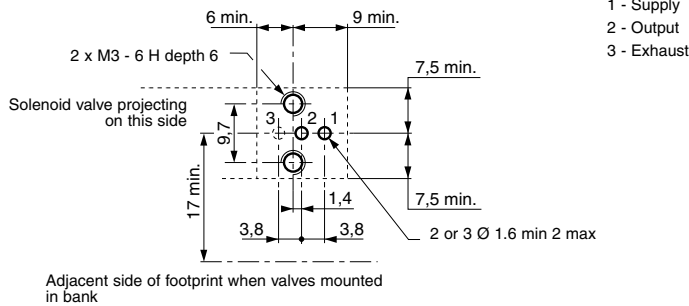
|          | Consumption | Voltage                     | 81 519 032              | 81 519 332                      | 81 519 632                      | 81 519 340                      |
|----------|-------------|-----------------------------|-------------------------|---------------------------------|---------------------------------|---------------------------------|
| Function | 1 W         | 24 V $\overline{\text{DC}}$ | 3/2 NC                  | 3/2 NC                          | 3/2 NC                          | 3/2 NF                          |
| Version  |             |                             | Without manual override | With manual override by impulse | With maintained manual override | With maintained manual override |

## Characteristics

|   |         |                   |                   |                   |                   |
|---|---------|-------------------|-------------------|-------------------|-------------------|
| Operating pressure  | bar     | 1 → 8             | 1 → 8             | 1 → 8             | 1 → 8             |
| Orifice diameter  | mm      | 0.8               | 0.8               | 0.8               | 0.8               |
| Flow at 6 bars  | NI/min  | 25                | 25                | 25                | 25                |
| kV  |         | 0.3               | 0.3               | 0.3               | 0.3               |
| Switching time  | ms      | 5 → 15            | 5 → 15            | 5 → 15            | 5 → 15            |
| Mechanical life (operations)                                |         | 5 10 <sup>7</sup> | 5 10 <sup>7</sup> | 5 10 <sup>7</sup> | 5 10 <sup>7</sup> |
| Operating temperature                                       | °C      | -10 → +50         | -10 → +50         | -10 → +50         | -10 → +50         |
| Compressed air or inert gas - oil-free air filtered to 50 μ |         | ●                 | ●                 | ●                 | ●                 |
| Duty factor   |         | 100 % ED          | 100 % ED          | 100 % ED          | 100 % ED          |
| Insulation class  | IEC 85  | F                 | F                 | F                 | F                 |
| Weight  |         | 35                | 35                | 35                | 35                |
| Rotatable connector 4 positions in 90° steps                |         | ●                 | ●                 | ●                 | ●                 |
| Degree of protection with M12 5-pin connector               | IEC 529 | —                 | —                 | —                 | —                 |
| Degree of protection with connector 81 516 082              | IEC 529 | IP 65             | IP 65             | IP 65             | IP 65             |
| UL and cUL approval   |         | MH 15085          | MH 15085          | MH 15085          | MH 15085          |

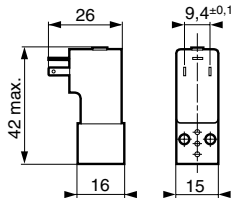
## 15x15 mm footprint

according to CNOMO E 06-36-120N

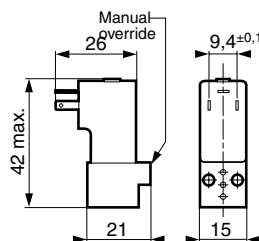


## Encombrement

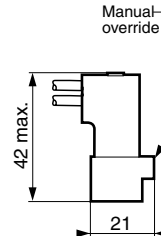
81 519 0



81 519 3  
81 519 6



81 519 3

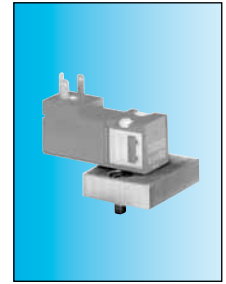
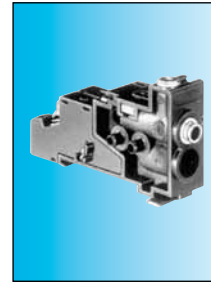
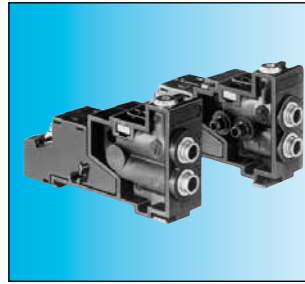


ATEX version products are available in the following catalogues: **Pneumatic products for explosive atmospheres** or on our website [www.crouzet.com](http://www.crouzet.com)

# Sub-bases for miniature solenoid valves



Also available in **ATEX** version for use in potentially explosive atmospheres in accordance with 94/9/EC Directive



## Part numbers

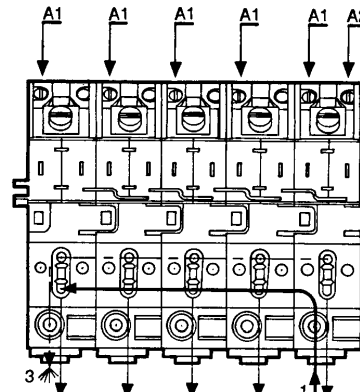
|   |                   |                   |                   |
|---|-------------------|-------------------|-------------------|
| Pair of end bases   | <b>81 514 101</b> | —                 | —                 |
| Intermediate sub-base                                     | —                 | <b>81 514 161</b> | —                 |
| Adaptor sub-base for CNOMO 06-05-80 / NFE 49066 footprint | —                 | —                 | <b>79 453 569</b> |

## Characteristics

|  |                 |                |                |                     |
|--|-----------------|----------------|----------------|---------------------|
| Pneumatic indicator on output                                  |                 | •              | •              |                     |
| Common supply  |                 | •              | •              |                     |
| Common exhaust   |                 | •              | •              |                     |
| Torque capacity  | mm <sup>2</sup> | 3              | 3              |                     |
| Push-in connection for semi-rigid tubing<br>Ø 4 mm (NFE 49100) | mm              | •              | •              |                     |
| Mounting   |                 | DIN rail 35 mm | DIN rail 35 mm | 2 screws<br>M4 x 10 |
| UL and cUL approval  | g               | MH 15085       | MH 15085       | —                   |
| Weight   |                 | 65             | 30             | 50                  |

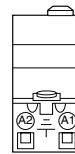
## Connection

Pneumatic



- 1 - Supply
- 2 - Output
- 3 - Exhaust

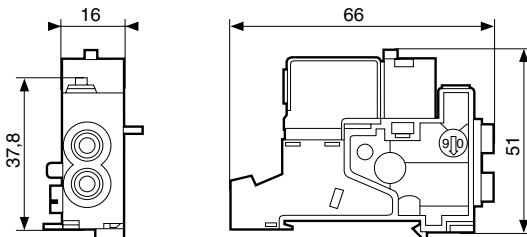
Electrical



- A1 - Pilot signal
- A2 - Common
- ⊥ - Earth

Dimensions with miniature solenoid valve (page 58)

81 514 101 - 81 514 161



79 453 569

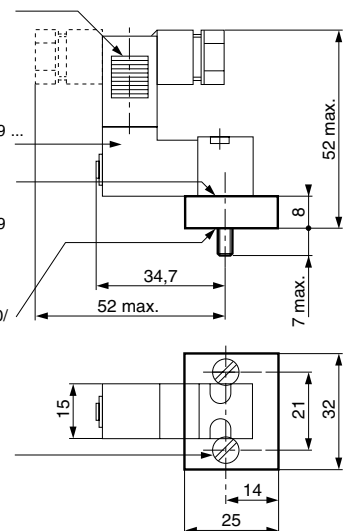
Connector ref 81 516 082  
(rotatable in 90° steps)  
see page 65

Miniature solenoid valve 81 519 ...  
see page 58

CNOMO footprint  
E 06-36-120N for mounting  
miniature solenoid valve 81 519

Mounting on CNOMO 06-05-80/  
NFE 49066 footprint

Fixing on CNOMO 06-05-80/  
NFE 49-066 footprint by  
2 cap screws M4x10  
(NFE 25-127)

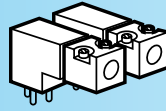


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# Electro-pneumatic miniature control valves

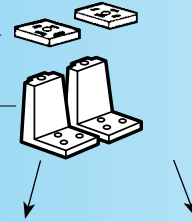
## Mounting

### Miniature solenoid valves



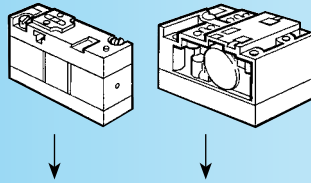
### Indicators

- LED seals
- LED



### Valve modules

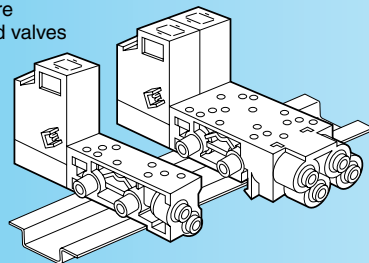
- Poppet
  - 3/2 monostable (17.5 mm)
  - 4/2 monostable (17.5 mm)
- Slide valve
  - 4/2 bistable (35 mm)
  - 4/2 monostable spring-return (35 mm)



### Sub-bases

For miniature solenoid valves

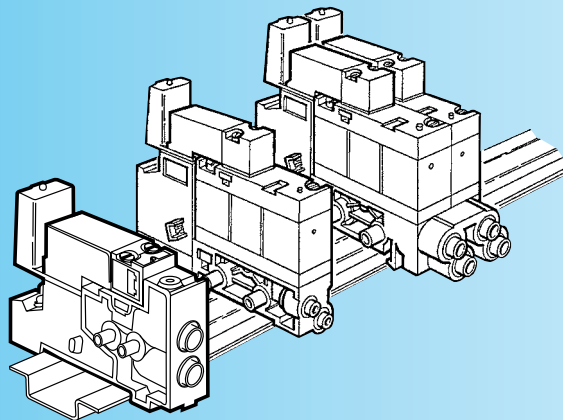
For valve modules



Single

Double

### Complete product



# Valve modules

- Monostable, bistable
- 3/2, 4/2



Also available in **ATEX** version for use in potentially explosive atmospheres in accordance with 94/9/EC Directive



81 513 100



81 513 600



81 513 200



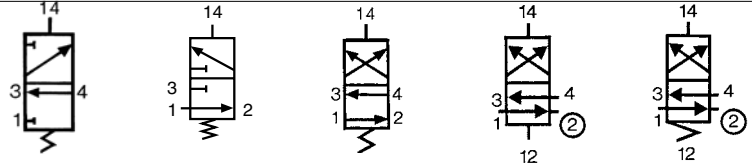
81 516 200



81 516 100

| Function | 3/2 NC monostable | 3/2 NO monostable | 4/2 monostable | 4/2 bistable | 4/2 monostable |
|----------|-------------------|-------------------|----------------|--------------|----------------|
|----------|-------------------|-------------------|----------------|--------------|----------------|

### Symbol

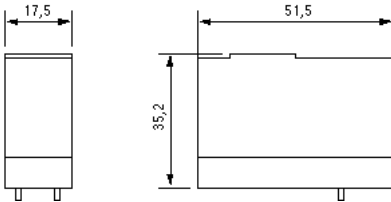


### Characteristics

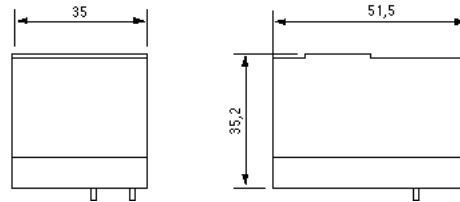
|                                   |                                |                       |                       |                       |                 |                 |   |
|-----------------------------------|--------------------------------|-----------------------|-----------------------|-----------------------|-----------------|-----------------|---|
| Width                             | mm                             | 17.5                  | 17.5                  | 17.5                  | 35              | 35              |   |
| Working pressure                  | bars                           | 3→8                   | 3→8                   | 3→8                   | 2→8             | 3.5→8           |   |
| Orifice diameter                  | mm                             | 3                     | 3                     | 3                     | 4               | 4               |   |
| Flow at 6 bars                    | with Ø 4 mm sub-base (page 63) | 200                   | 200                   | 200                   | 300             | 300             |   |
|                                   | with Ø 6 mm sub-base (page 63) | Nl/min                | 300                   | 300                   | 400             | 400             |   |
| Flow Rate                         | with Ø 4 mm sub-base (page 63) | kV                    | 2.2                   | 2.2                   | 2.2             | 4               | 4 |
|                                   | with Ø 6 mm sub-base (page 63) |                       | 2.5                   | 2.5                   | 4               | 5               | 5 |
| Operating temperature             | °C                             | -10 → +50             | -10 → +50             | -10 → +50             | -10 → +50       | -10 → +50       |   |
| Switching time for the valve only | ms                             | 15                    | 15                    | 15                    | 50              | 50              |   |
| Mechanical life                   | operations                     | 1.5 x 10 <sup>7</sup> | 1.5 x 10 <sup>7</sup> | 1.5 x 10 <sup>7</sup> | 10 <sup>7</sup> | 10 <sup>7</sup> |   |
| Weight                            | g                              | 38                    | 38                    | 38                    | 106             | 106             |   |

### Dimensions

#### 81 513



#### 81 516

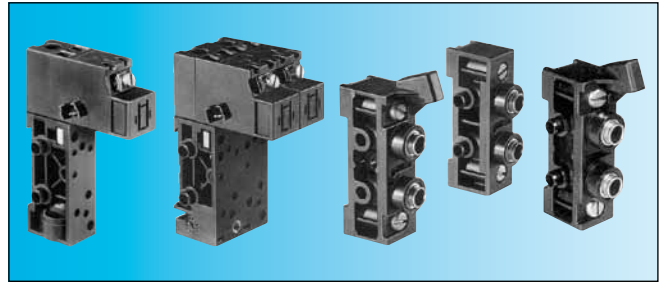


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# Sub-bases and end bases for miniature control valves



Also available in **ATEX** version for use in potentially explosive atmospheres in accordance with 94/9/EC Directive



## Part numbers

| Mounting   |                            |        | Cabinet           | Cabinet           | Cabinet           | Cabinet           |
|--|----------------------------|--------|-------------------|-------------------|-------------------|-------------------|
| Version  |                            |        | 17.5 mm           | 35 mm             | —                 | —                 |
| Push-in connection for semi-rigid tubing (NFE 49100) | Sub-bases                  | Ø 4 mm | <b>81 513 060</b> | <b>81 517 101</b> | —                 | —                 |
|  |                            | Ø 6 mm | <b>81 513 065</b> | <b>81 517 201</b> | —                 | —                 |
|  | End bases (pair)           | Ø 6 mm | —                 | —                 | <b>81 513 011</b> | —                 |
|  | Intermediate supply module | Ø 6 mm | —                 | —                 | —                 | <b>81 513 001</b> |

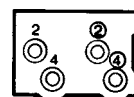
## Characteristics

|                     |     |                |                |                |                |
|---------------------|-----|----------------|----------------|----------------|----------------|
| Torque capacity     | mm² | 3              | 3              | —              | —              |
| UL and cUL approval |     | MM15085        | MM15085        | —              | —              |
| Mounting            |     | DIN rail 35 mm | DIN rail 35 mm | DIN rail 35 mm | DIN rail 35 mm |
| Weight              | g   | 55             | 110            | 86             | 44             |

## Connections Pneumatic

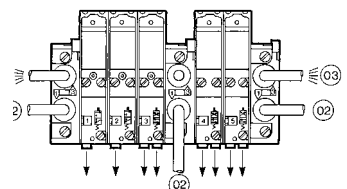


- 2 - Pneumatic output 4/2 (NO)
- 4 - Pneumatic output 3/2 or 4/2 (NC)



- 2 Output at rest (NO)
- 3 Output at rest \*
- 4 Output at rest \*
- 5 Output operating (NC)

## 81 513 011 - 81 513 001



### Note :

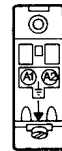
- Each sub-base can accept
- sub-base 81 513 060-065 : 1 relay 3/2 or 4/2, width 17.5 mm
- sub-base 81 517 101-201 : 1 bistable relay 4/2 (width 35 mm) or 2 relays 3/2 or 4/2 (width 17.5 mm)

02 2 Supply ports

03 2 Exhaust ports

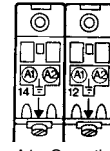
Integral push-in connections Ø 6 mm

## Electrical



- A1 - Pilot signal
- A2 - Common

Earth

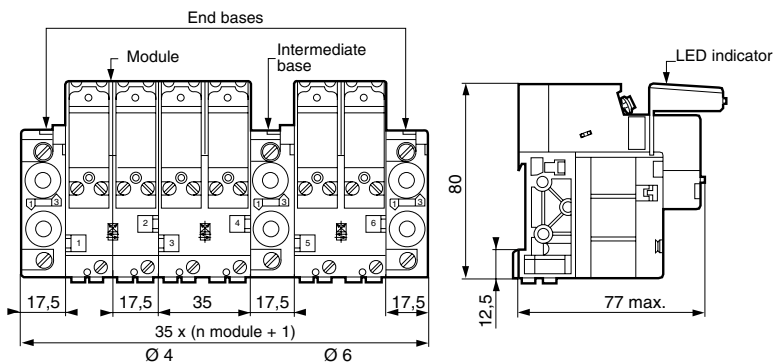


- A1 - Operating control signal (14)
- A2 - Common
- A3 - Rest control signal (12)
- A4 - Common

Earth

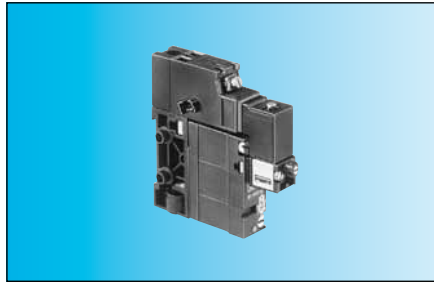
Degree of protection : IP20 when assembled.

## Dimensions with miniature control valves (page 62) + miniature solenoid valves (page 58) + indicators (page 65)



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# Valves and solenoids valves assembled



**Contact us for  
Other versions**

## Part numbers

|  |  |  |
|--|--|--|
| Function   | 3/2 NC   | 4/2 monostable                                 |
| Sub-base with push-in connection for semi-rigid tubing (NFE 49100) | Ø 4 ext.                                       | Ø 4 ext.                                       |
| Version  | Solenoid valve with manual override by impulse | Solenoid valve with manual override by impulse |
| Voltage  | 24 VDC (+10% -15%)                             | 24 VDC (+10% -15%)                             |
|  | <b>81 513 103</b>                              | <b>81 513 203</b>                              |

## Symbol

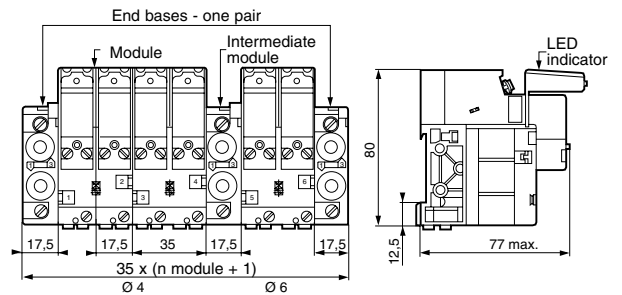
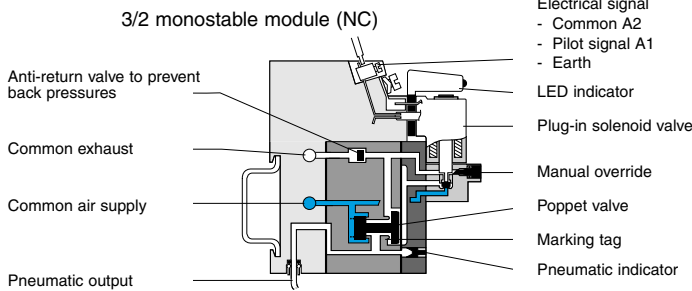


## Characteristics

|  |        |                       |                       |
|--|--------|-----------------------|-----------------------|
| Operating pressure   | bar    | 3→8                   | 3→8                   |
| Orifice diameter   | mm     | 3                     | 3                     |
| Flow at 6 bars   | NL/min | 200                   | 200                   |
| KV   |        | 2.2                   | 2.2                   |
| Operating temperature  | °C     | -10 → +50             | -10 → +50             |
| Switching time of the assembly   | ms     | 20                    | 20                    |
| Mechanical life (operations) at 4 bars   |        | 1.5 x 10 <sup>7</sup> | 1.5 x 10 <sup>7</sup> |
| Valve position will be maintained in the event of pressure loss and/or electrical current loss |        | —                     | —                     |
| Mounting   |        | DIN rail 35 mm        | DIN rail 35 mm        |
| Weight   | g      | 130                   | 130                   |
| UL and cUL approval  |        | MH15085               | MH15085               |

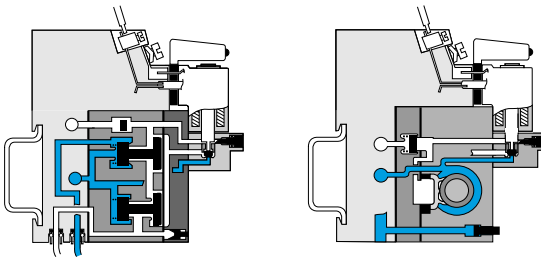
## Principle of operation

## Dimensions



4/2 monostable module

4/2 bistable module



End bases not supplied (page 63)  
 Intermediate bases not supplied (page 63)  
 Indicators not supplied (page 65)

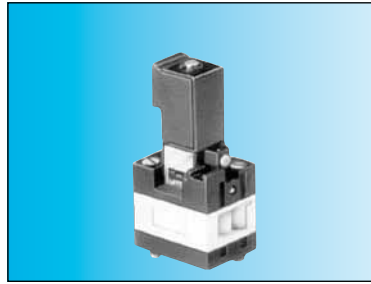
5





# Solenoid valves

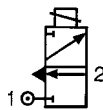
- Reduced "dimensions"
- Mounted on sub-base



## Part numbers and voltages

|                 |                                    |                   |  |
|-----------------|------------------------------------|-------------------|--|
| Function        |                                    | 3/2 NC            |  |
| Mounting        |                                    | On sub-base (54)  |  |
| Solenoid valves | 24 V (+10% -15%)                   | <b>81 519 732</b> |  |
| with            | 24 V - 50/60 Hz (+10% -15%)        | <b>81 519 774</b> |  |
| manual          | 48V - 50/60 Hz (+10% -15%)         | <b>81 519 775</b> |  |
| override        | 110 V - 50/60 Hz (+10% -15%)       | <b>81 519 776</b> |  |
| by impulse      | 220 - 230 V - 50/60 Hz (+10% -15%) | <b>81 519 777</b> |  |

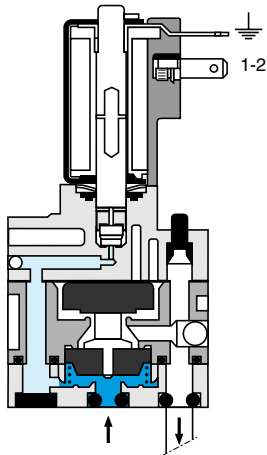
## Symbol



## Characteristics

|   |            |                       |  |
|---|------------|-----------------------|--|
| Operating pressure  | bar        | 2 → 8                 |  |
| Orifice diameter  | mm         | 2.7                   |  |
| Flow at 6 bars  | NI/min     | 170                   |  |
| Rotatable coil 4 positions in 90° steps                                     |            | •                     |  |
| Degree of protection (with connector 81 516 082 not supplied) (see page 65) | IEC 529    | IP 65                 |  |
| Mechanical life   | operations | 1.5 x 10 <sup>7</sup> |  |
| Consumption   | W          | 1                     |  |
|   | VA         | 2.5                   |  |
| Operating temperature   | °C         | -5 → +50              |  |
| Weight  | g          | 70                    |  |
| UL and cUL approval   |            | MH15085               |  |

### Principle of operation



### Connections

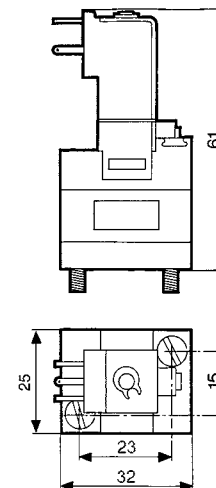
- Pneumatic { 1 - Supply  
2 - Output
- Electrical { 1 - 2 - Pilot signal  
⊥ Earth

Electrical connection by connector 81 516 062 (see page 65)

### Dimensions

81 519

On separate sub-base



5

## ► Specific islands "for integrators" (supplied in packs of 20)

### ► Versions with interfaces 300 NL / mm



#### Configuration

- 1 - Specify the number and type of interfaces (3 / 2 mono - 4 / 2 mono - 4 / 2 bistable) see page 62.
- 2 - Specify the voltage, the type and method of the control valve connections, see page: 58-59 (Example: 24 V DC with manual switch maintained, exit leads).
- 3 - Please send us your application specifying your requirements and quantities per year, and we will respond as soon as possible.

### ► Versions with interfaces 30 NL / mm



#### Configuration

- 1 - Specify the voltage, the type and method of the control valve connections, see page: 58-59 (Example: 24 V DC with manual switch maintained, exit leads).
- 2 - Please send us your application specifying your requirements and quantities per year, and we will respond as soon as possible.

### ► Develop customised versions to specifications



Crouzet analyses your needs and offers a customised solution.

