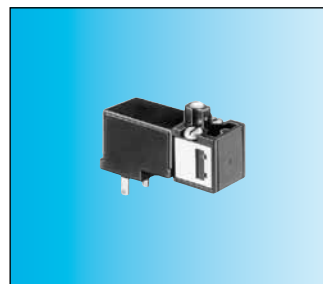


# Electro-pneumatic control valves



## Miniature solenoid valves for alternating current

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



### Part numbers (and voltages)

| Consumption | Voltage                 |                         |                                 |                                             |
|-------------|-------------------------|-------------------------|---------------------------------|---------------------------------------------|
| 2.5 VA      | 24 V ~ 50-60 Hz         | 81 519 080              | 81 519 380                      | 81 519 680                                  |
| 2.5 VA      | 48 V ~ 50-60 Hz*        | —                       | 81 519 381                      | —                                           |
| 2.5 VA      | 110 V ~ 50-60 Hz        | —                       | 81 519 378                      | 81 519 678                                  |
| 2.5 VA      | 220 V- 230 V ~ 50-60 Hz | —                       | 81 519 379                      | 81 519 679                                  |
| Function    |                         | 3/2 NC                  | 3/2 NC                          | 3/2 NC                                      |
| Version     |                         | Without manual override | With manual override by impulse | With manual override by latching (1/4 turn) |

### Characteristics

|                                                             |         |                   |                   |                   |
|-------------------------------------------------------------|---------|-------------------|-------------------|-------------------|
| Operating pressure                                          | bar     | 1 → 8             | 1 → 8             | 1 → 8             |
| Orifice diameter                                            | mm      | 0.5               | 0.5               | 0.5               |
| Flow at 6 bars                                              | NI/min  | 12                | 12                | 12                |
| kV                                                          |         | 0.12              | 0.12              | 0.12              |
| Switching time                                              | ms      | 5 → 15            | 5 → 15            | 5 → 15            |
| Mechanical life (operations)                                |         | 5 10 <sup>7</sup> | 5 10 <sup>7</sup> | 5 10 <sup>7</sup> |
| Operating temperature                                       | °C      | -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          |
| Insulation class                                            | IEC 85  | F                 | F                 | F                 |
| Weight                                                      |         | 35                | 35                | 35                |
| Rotatable connector 4 positions in 90° steps                |         | ●                 | ●                 | ●                 |
| Degree of protection with sub-base (page 62)                | IEC 529 | IP 20             | IP 20             | IP 20             |
| with connector 81 516 082 (page 65)                         | IEC 529 | IP 65             | IP 65             | IP 65             |
| UL and cUL approval                                         |         | MH 15085          | MH 15085          | MH 15085          |

### 15x15 mm footprint

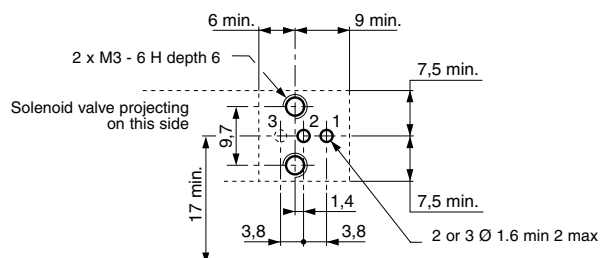
according to CNOMO E 06-36-120N

### Dimensions

81 519 0

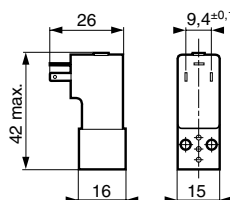
81 519 3  
81 519 6

Manual override



Adjacent side of footprint when valves mounted in bank

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

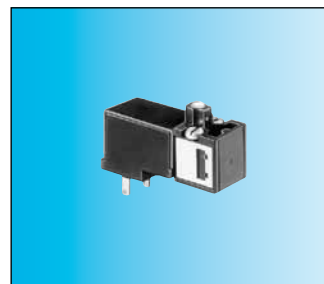


## Miniature solenoid valves for direct current

- 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)

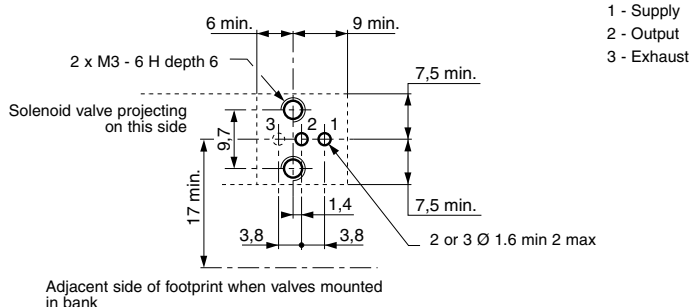
|          | Consumption | Voltage  |                         |                                 |                                 |                                 |
|----------|-------------|----------|-------------------------|---------------------------------|---------------------------------|---------------------------------|
|          | 1 W         | 24 V --- | <b>81 519 032</b>       | <b>81 519 332</b>               | <b>81 519 632</b>               | <b>81 519 340</b>               |
| Function |             |          | 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 | —                 | —                 | —                 | —                 |
| 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          |

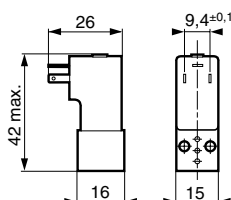
### 15x15 mm footprint

according to CNOMO E 06-36-120N

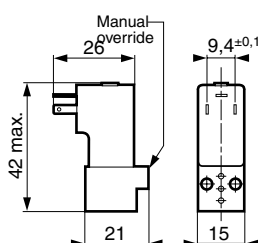


### Encombrement

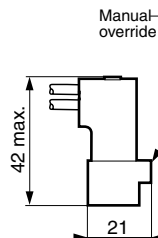
81 519 0



81 519 3  
81 519 6

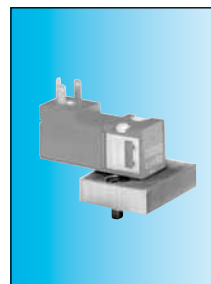
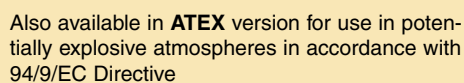


81 519 3



ATEX version products are available in the following catalogues: **Pneumatic products for explosive atmospheres** or on our website **www.crouzet.com**

## Sub-bases for miniature solenoid valves



## Part numbers

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

## Characteristics

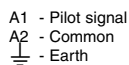
|                                                                |                 |                |                |                     |
|----------------------------------------------------------------|-----------------|----------------|----------------|---------------------|
| Pneumatic indicator 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

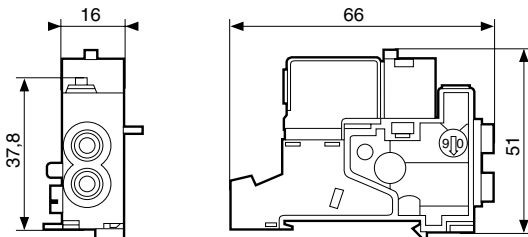


Electrical



### Dimensions with miniature solenoid valve (page 58)

**81 514 101 - 81 514 161**



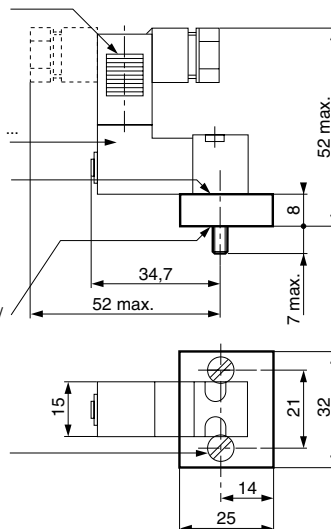
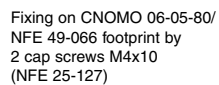
**79 453 569**

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

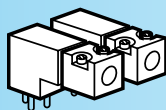


ATEX version products are available in the following catalogues: **Pneumatic products for explosive atmospheres** or on our website **[www.crouzet.com](http://www.crouzet.com)**

# Electro-pneumatic miniature control valves

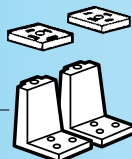
## Mounting

### Miniature solenoid valves



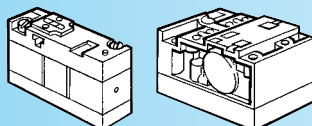
### Indicators

- LED seals
- LED



### Valve modules

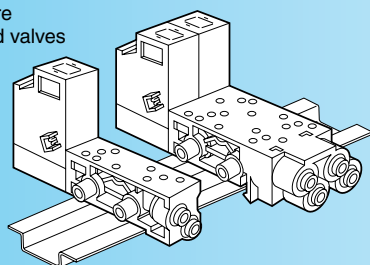
- Poppet
  - 3/2 monostable (17.5 mm)
  - 4/2 monostable (17.5 mm)
- Slide valve
  - 4/2 bistable (35 mm)
  - 4/2 monostable spring-return (35 mm)



### Sub-bases

For  
miniature  
solenoid valves

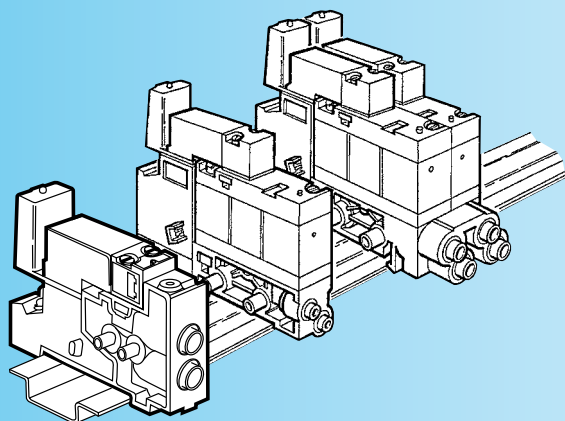
For valve modules



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



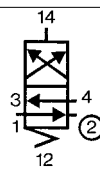
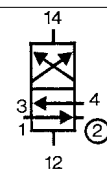
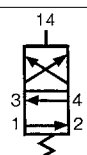
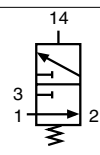
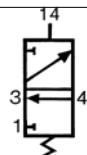
81 516 200



81 516 100

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

### Symbol

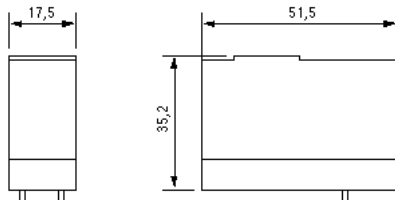


### Characteristics

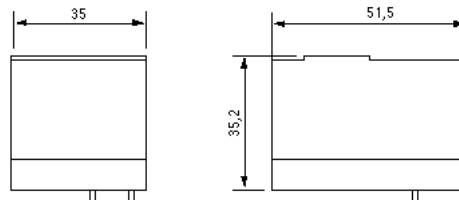
|                                   |                                |                       |                       |                       |                 |                 |
|-----------------------------------|--------------------------------|-----------------------|-----------------------|-----------------------|-----------------|-----------------|
| 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) | 300                   | 300                   | 300                   | 400             | 400             |
| Flow Rate                         | with Ø 4 mm sub-base (page 63) | 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

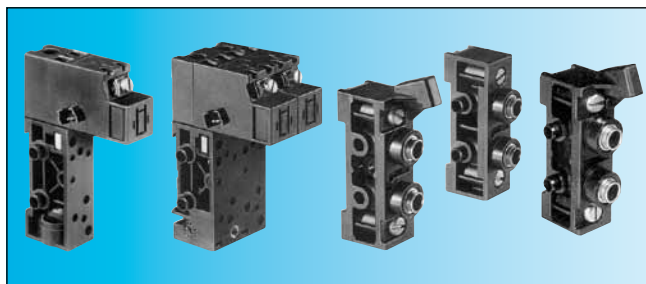


ATEX version products are available in the following catalogues: **Pneumatic products for explosive atmospheres** or on our website [www.crouzet.com](http://www.crouzet.com)

## Sub-bases 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

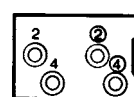
|                     |     |                |                |                |                |
|---------------------|-----|----------------|----------------|----------------|----------------|
| Torque capacity     | mm² | 3              | 3              | —              | —              |
| UL and 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

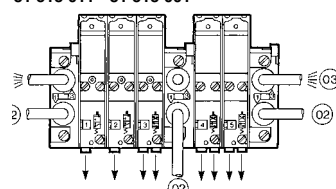


2 - Pneumatic output 4/2 (NO)  
4 - Pneumatic output 3/2 or 4/2 (NC)



② Output at rest (NO)  
④ Output at rest \*  
③ Output at rest \*  
① Output operating (NC)

#### 81 513 011 - 81 513 001



#### Note :

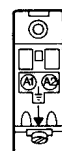
Each sub-base can accept  
- sub-base 81 513 060-065 : 1 relay 3/2 or 4/2, width 17.5 mm  
- sub-base 81 517 101-201 : 1 bistable relay 4/2 (width 35 mm) or 2 relays 3/2 or 4/2 (width 17.5 mm)

② 2 Supply ports

③ 2 Exhaust ports

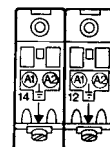
Integral push-in connections Ø 6 mm

#### Electrical



A1 - Pilot signal  
A2 - Common

Earth

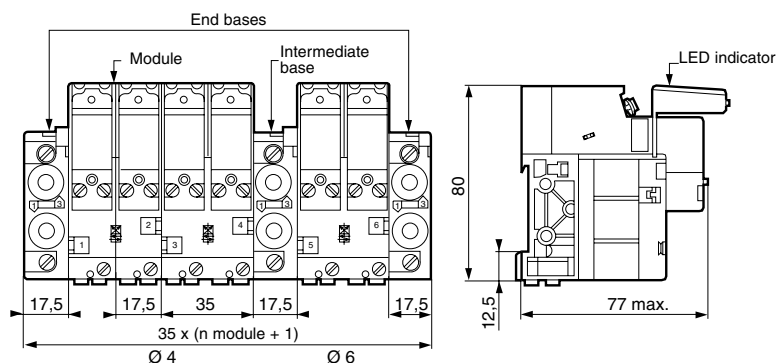


A1 - Operating control signal (14)  
A2 - Common  
A1 - Rest control signal (12)  
A2 - Common

Earth

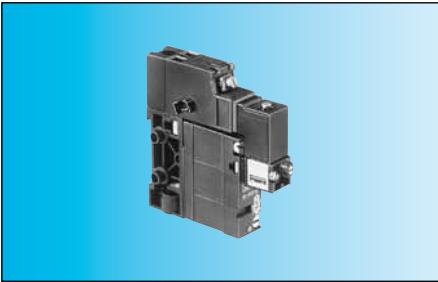
Degree of protection :  
IP20 when assembled.

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



ATEX version products are available in the following catalogues: **Pneumatic products for explosive atmospheres** or on our website **www.crouzet.com**

# 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%)                             | 81 513 103                                     | 81 513 203 |  |

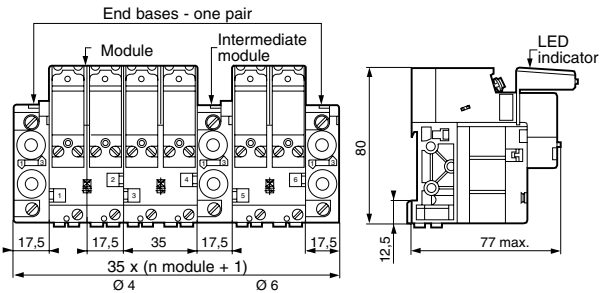
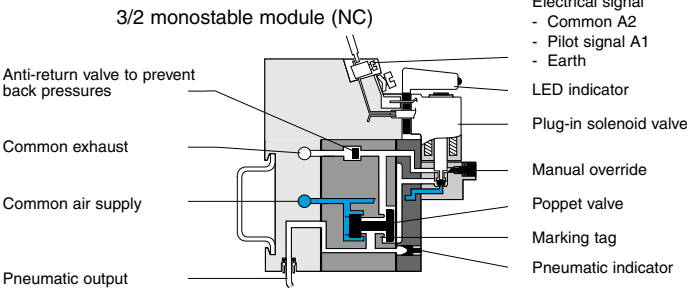
## Symbol



| Characteristics                                                                                |                                                      |                       |                       |  |
|------------------------------------------------------------------------------------------------|------------------------------------------------------|-----------------------|-----------------------|--|
| Operating pressure                                                                             | bar                                                  | 3→8                   | 3→8                   |  |
| Orifice diameter                                                                               | mm                                                   | 3                     | 3                     |  |
| Flow at 6 bars                                                                                 | sub-base 81 513 060<br>sub-base 81 517 101           | NL/min<br>NL/min      | 200<br>—              |  |
| KV                                                                                             | with sub-base 81 513 060<br>with sub-base 81 517 101 | 2.2<br>—              | 2.2<br>—              |  |
| 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               |  |

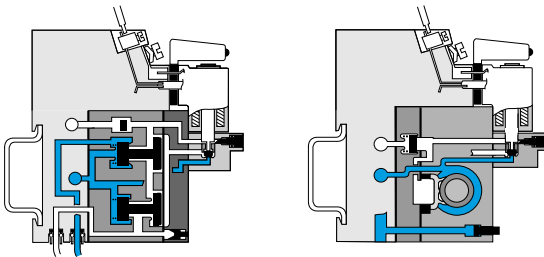
## Principle of operation

## Dimensions



4/2 monostable module

4/2 bistable module

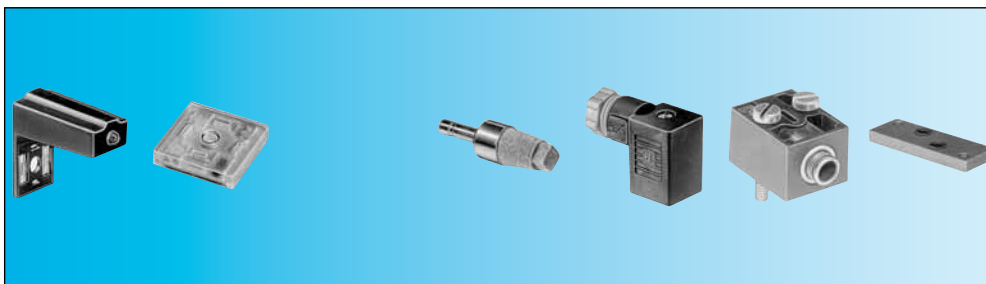


End bases not supplied (page 63)  
Intermediate bases not supplied (page 63)  
Indicators not supplied (page 65)

## Accessories



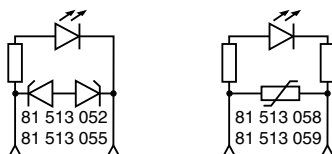
Also available in **ATEX** version for use in potentially explosive atmospheres in accordance with 94/9/EC Directive



### Part numbers

|                                                             |                                 |                    |   |            |            |            |   |            |
|-------------------------------------------------------------|---------------------------------|--------------------|---|------------|------------|------------|---|------------|
| Visual indicators with anti-surge                           | 24 V - 50-60 Hz ~               | 81 513 052         | — | —          | —          | —          | — | —          |
|                                                             | 48 V - 50-60 Hz ~               | 81 513 055         | — | —          | —          | —          | — | —          |
|                                                             | 110 V - 50-60 Hz ~              | 81 513 058         | — | —          | —          | —          | — | —          |
|                                                             | 230 V - 50-60 Hz (~10% +6 %)    | 81 513 059         | — | —          | —          | —          | — | —          |
| LED seal Packaging                                          | 12 to 24 V - DC - AC (by 5)     | 81 513 064 (by 10) | — | —          | —          | —          | — | —          |
| Exhaust silencer                                            | Plug-in Ø 6                     | —                  | — | 81 537 001 | —          | —          | — | —          |
|                                                             | Plug-in Ø 8                     | —                  | — | 81 537 201 | —          | —          | — | —          |
| Connector for solenoid valve                                | Without manual override         | —                  | — | —          | 81 516 082 | —          | — | —          |
| Pneumatic pilots                                            | With manual override by impulse | —                  | — | —          | —          | 81 516 081 | — | —          |
|                                                             |                                 | —                  | — | —          | —          | 81 516 091 | — | —          |
| Push-in connection for semi-rigid tubing Ø 4 mm (NFE 49100) |                                 | —                  | — | —          | —          | •          | — | —          |
| Blanking plate                                              |                                 | —                  | — | —          | —          | —          | — | 81 516 085 |

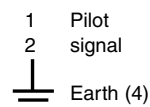
### Symbol



### Characteristics

|                                                                     |    |   |            |    |    |                     |   |   |
|---------------------------------------------------------------------|----|---|------------|----|----|---------------------|---|---|
| Consumption                                                         | W  | — | 0.24       | —  | —  | —                   | — | — |
| Temperature                                                         | °C | — | - 10 → +50 | —  | —  | —                   | — | — |
| Connection                                                          | mm | — | —          | —  | —  | Instantané Ø 4 ext. | — | — |
| Mounted between the pilot solenoid valve and the body of the module |    | • | •          | —  | —  | —                   | — | — |
| Supplied in multiples of 5                                          |    | • | —          | —  | —  | —                   | — | — |
| Supplied in multiples of 10                                         |    | — | •          | —  | —  | •                   | • | • |
| Packet of 10 pieces                                                 |    | — | —          | —  | —  | —                   | — | • |
| Weight                                                              | g  | 6 | 2          | 30 | 10 | 5                   | 3 | — |

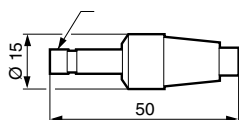
### Connection



### Dimensions

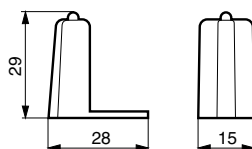
#### 81 537 001 - 81 537 201

Mounted by plugging into push-in connector for semi-rigid tubing (NFE 49100)

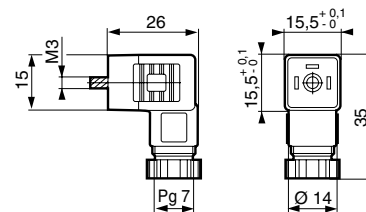


#### 81 513 052 - 81 513 055

#### 81 513 058 - 81 513 059



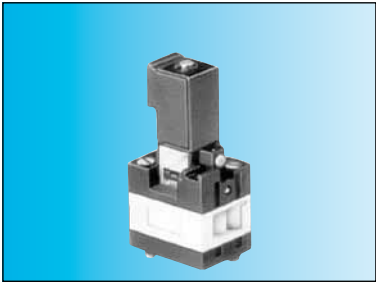
#### 81 516 082



ATEX version products are available in the following catalogues: **Pneumatic products for explosive atmospheres** or on our website **www.crouzet.com**

# Solenoid valves

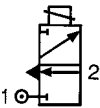
- Reduced "dimensions"
- Mounted on sub-base



## Part numbers and voltages

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

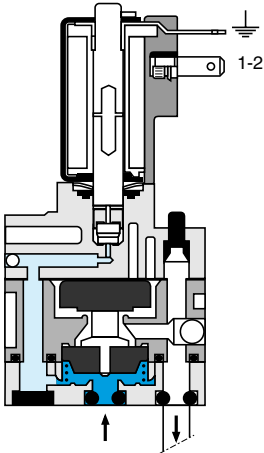
## Symbol



## 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



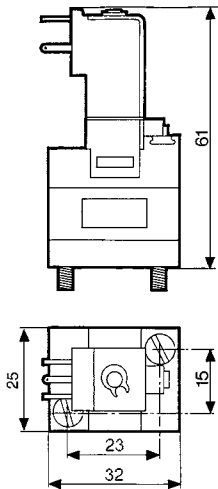
## Connections

- 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



## ► 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.

