



# SOLENOID VALVES

direct operated  
flameproof enclosure

II 2 G Ex d IIC T6-T5 Gb, II 2 D Ex tb IIIC T85°C-T100°C Db IP65  
3 and 4 ports in the body - 1/4



3/2 NC

4/2



3/2-4/2  
Series  
131

## FEATURES

- Solenoid valve with flameproof operator type MPV1 or CPV1 for use in potentially explosive atmospheres, EC type examination according to ATEX Directive 2014/34/EU EC type examination certificate no.: **LCIE 02 ATEX 6253 X** IECEx Certificate of Conformity no.: **IECEx LCI 09.0004X**
- Compliance with the Essential Health and Safety Requirements has been assured by compliance with the International and European Standards EN 13463-1, EN-IEC 60079-0, EN-IEC 60079-1 and EN-IEC 60079-31
- Easy electrical connection with screw terminals; manual reset version available
- Solenoid operator types MPV1/CPV1 can be fitted to 3/2 and 4/2 series 231 and 232 valves

## GENERAL

**Differential pressure** 3/2: 0 to 30 bar-4/2: 0 to 8 bar [1 bar = 100 kPa]  
**Maximum viscosity** 300 cSt (mm<sup>2</sup>/s)  
**Response time** (with air ΔP = 6 bar) 30 ms [opening/closing, AC version (-)]

| fluids (*) <sup>(2)</sup>                                | temperature range (TS) | seal materials (*) |
|--|------------------------|--------------------|
| 3/2 : water, air, inert gas, oil<br>4/2 : air, inert gas | - 10°C to + 80°C       | NBR (nitrile)      |

## SOLENOID OPERATOR CONSTRUCTION

**Solenoid operator housing** Aluminium (MPV1, AC) or cast iron (CPV1, DC)  
**Threaded base, cover screw** Aluminium, steel  
**Core tube** Bronze (MPV1, AC) or brass (CPV1, DC)  
**Core and plugnut** Steel  
**Nameplate** Aluminium

## MATERIALS IN CONTACT WITH FLUID

(\*) Ensure that the compatibility of the fluids in contact with the materials is verified

**Body** Brass  
**Internal parts and springs** Stainless steel  
**Seals** NBR  
**Shading coil** Copper

## ELECTRICAL CHARACTERISTICS

**Electrical safety** IEC 335 II 2 G Ex d IIC T6-T5 Gb  
**Coil connection** Screw terminals II 2 D Ex tb IIIC T85°C-T100°C Db IP65  
**Standard voltages** DC (-) : 24V - 48V  
(Other voltages and 60 Hz on request) AC (-) : 24V - 48V - 115V - 230V / 50 Hz

## SAFETY CODE

| operator type | power ratings |         |          |      | operator ambient temperature range (TS) (°C) | electrical protection (EN 60529) | replacement coil |          | type <sup>(1)</sup> |
|---------------|---------------|---------|----------|------|--|----------------------------------|------------------|----------|---------------------|
|               | inrush        | holding | hot/cold | ~    |  |                                  | =                |          |                     |
|               | (VA)          | (VA)    | (W)      |      |  |                                  |                  | (W)      |                     |
| MPV1          | 600           | 55      | 15       | -    | -10 to +60/+80                               | aluminium IP65                   | 43002591         | -        | 01                  |
| MPV1          | 400           | 70      | 20       | -    | -10 to +40/+60                               | aluminium IP65                   | 43002665         | -        | 03                  |
| CPV1          | -             | -       | -        | 24/- | -10 to +60/+80                               | cast iron IP65                   | -                | 43002132 | 02-04               |

<sup>(1)</sup> Refer to the dimensional drawings on the following page.

## TEMPERATURE CLASSIFICATION

### AC (-) solenoids - operator type MPV1

| Pn<br>(watt)                         | solenoid size |     | maximum ambient °C <sup>(1)</sup><br>surface temperature |       |       |       |
|--------------------------------------|---------------|-----|--|-------|-------|-------|
|                                      | 3/2           | 4/2 | T6   | T5    | T4    | T3    |
|                                      |               |     | 85°C   | 100°C | 135°C | 200°C |
| Insulation class E (120°C) 100% E.D. |               |     |  |       |       |       |
| 15                                   | ●             |     | 60   | 80    |       |       |
| 20                                   | ●             |     | 40   | 60    |       |       |

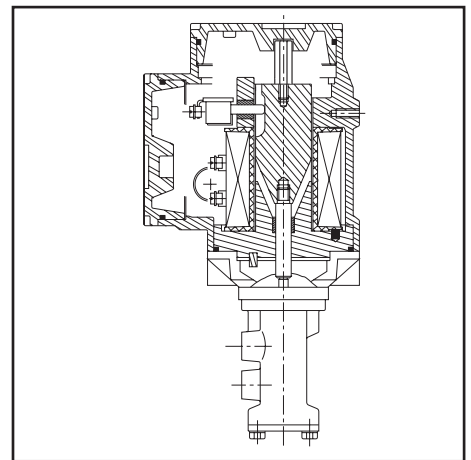
### DC (=) solenoids - operator type CPV1

| Pn<br>(watt)                         | solenoid size |     | maximum ambient °C <sup>(1)</sup><br>surface temperature |       |       |       |
|--------------------------------------|---------------|-----|--|-------|-------|-------|
|                                      | 3/2           | 4/2 | T6   | T5    | T4    | T3    |
|                                      |               |     | 85°C   | 100°C | 135°C | 200°C |
| Insulation class E (120°C) 100% E.D. |               |     |  |       |       |       |
| 24                                   | ●             |     | 60   | 80    |       |       |

## SPECIFICATIONS

| pipe size                       | orifice size<br>(mm) | flow coefficient<br>Kv<br>(m <sup>3</sup> /h) (l/min) | operating pressure differential (bar) |   |               |    | solenoid operator rating (W) |    | catalogue number | reference |          |          |          |
|---------------------------------|----------------------|---|---------------------------------------|---|---------------|----|------------------------------|----|------------------|-----------|----------|----------|----------|
|                                 |                      |   | max. (PS)                             |   |               |    | ~                            | =  |                  |           |          |          |          |
|                                 |                      |   | air (*)                               |   | water/oil (*) |    |                              |    |                  |           |          |          |          |
| <b>3/2 NC - Normally closed</b> |                      |   |                                       |   |               |    |                              |    |                  |           |          |          |          |
| 1/4                             | 4                    | 0,18  | 3                                     | 0 | 30            | 30 | 30                           | 30 | 15               | 24/-      | 13101148 | 13101215 | V301-O-4 |
| 1/4                             | 5                    | 0,36  | 6                                     | 0 | 20            | 20 | 20                           | 20 | 15               | 24/-      | 13101149 | 13101216 | V301-O-5 |
| 1/4                             | 6                    | 0,57  | 9,5                                   | 0 | 8             | 8  | 8                            | 8  | 15               | 24/-      | 13101150 | 13101236 | V301-O-6 |
| <b>4/2</b>                      |                      |   |                                       |   |               |    |                              |    |                  |           |          |          |          |
| 1/4                             | 4                    | 0,18  | 6                                     | 0 | 8             | 8  | -                            | -  | 20               | 24/-      | 13101166 | 13101231 | V401-4   |

<sup>(2)</sup> Standard construction 2/2 and 3/2 NC brass bodied valves can only be used where they are vented without backpressure. In case of use with liquid media (water and oil), the upper button must be fitted with a seal (see "options"). Stainless steel bodied valves are standard fitted with this seal.



### Manual reset solenoid valve:

Version with manual reset operator + 5A contact.

Full order number:

Solenoid valve catalogue number given below + one of the the following reset option catalogue numbers:

- MPV1 operator (-), catalogue number **260566**
- CPV1 operator (=), catalogue number **260568**

**OPTIONS**

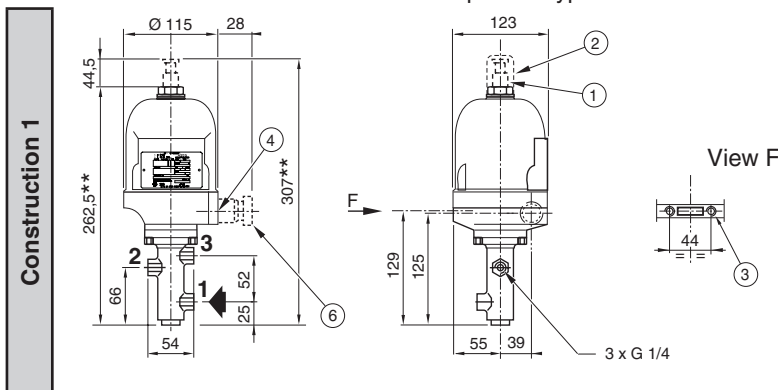
- Manual reset version with auxiliary 5A switch, catalogue number **260566 (MPV1)** or catalogue number **260568 (CPV1)**
- Stainless steel NC 3/2 solenoid valves (3 or 5 mm dia.), with IIR seals (butyl) for corrosive fluids: this option may limit the max. service pressure. Contact us
- 3 mm dia. solenoid valve for differential pressures of 0-40 bar (3/2) or 0-12 bar (4/2)
- NC/NO 2/2 or NO/U 3/2 solenoid valves with brass or stainless steel body
- IECEx-ATEX cable gland certified, 3/4 NPT, installed on solenoid valve, supplied with cable clamp:
  - for 8.5 to 16 mm dia. unarmoured cable, catalogue number **660510**
  - for ID 8.5 to 16 mm / OD 12 to 21 mm armoured cable, catalogue number **660514**
- Coil class B (AC and DC) / class H (DC)
- On solenoid operator MPV1 (~):
  - maintained manual operator, catalogue number **210516** / impulse manual operator, catalogue number **210518**
  - auxiliary switch: 5 A, catalogue number **260542**
- On solenoid operator CPV1 (=):
  - diode for direct current coil, catalogue number **010001**
  - maintained manual operator, catalogue number **210520** / impulse manual operator, catalogue number **210522**
  - auxiliary switch: 5 A, catalogue number **260548** / 15 A, catalogue number **260550**
  - auxiliary switches in neutral atmosphere (1HS1), catalogue number **260552**
  - auxiliary switch with manual reset
- On solenoid operators MPV1 / CPV1 (~/=):
  - cover on manual operator, catalogue number **160001**
  - marine paint, catalogue number **609502** / anti-corrosive paint, catalogue number **609503**
- On valve body:
  - brass body: fit the upper button with a seal (NBR or FPM) for use with liquid media, NC and NO 3/2 versions only
  - FPM seal (fluoroelastomer). Fluids: hydrocarbons (temperature range: -10°C to +80°C)
  - Oxygen service, catalogue number **970507**

**INSTALLATION**

- Solenoid valves must always be installed with body vertical and solenoid operator upward
- These solenoid valves have 2 mounting holes (MPV1 version) or 3 mounting holes (CPV1 version)
- Installation of MPV1 and CPV1 operator types on T spool valves G3/8, series 231 and 232 (see sections 6 and 9/01 and "Dimensions")
- Pipe connections (G\*) have standard combination thread according to ISO 228/1 and ISO 7/1
- Replacement coils available

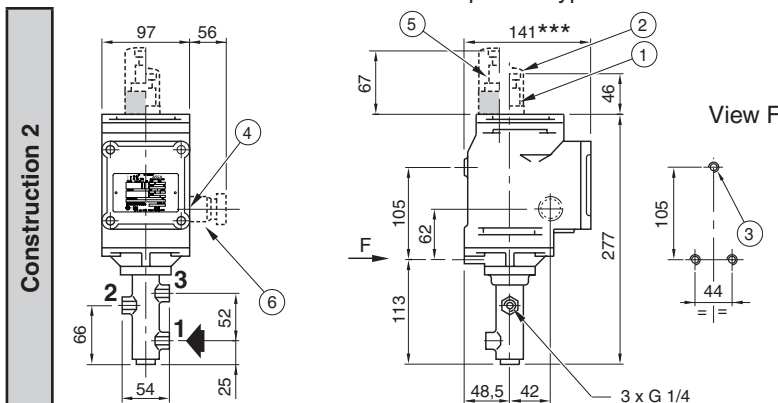
**DIMENSIONS (mm), WEIGHT (kg)**

3/2 AC solenoid valve with solenoid operator type MPV1



- Max. coil power: 28W  
 T6 for 40°C ambient temperature or  
 T5 for 60°C ambient temperature

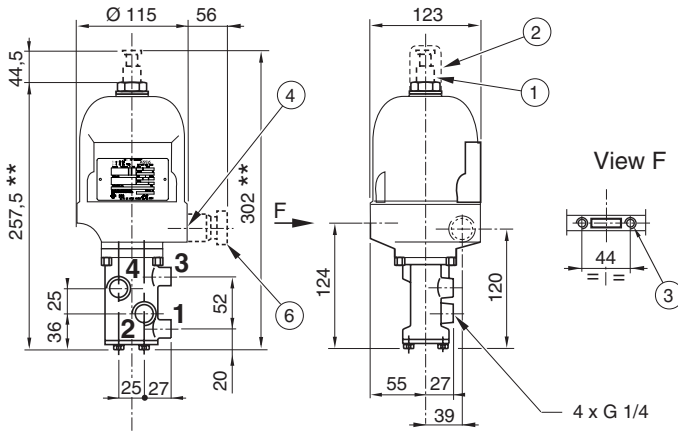
3/2 DC solenoid valve with solenoid operator type CPV1



- Max. coil power: 37W  
 T6 for 60°C ambient temperature or  
 T5 for 80°C ambient temperature

### 4/2 AC solenoid valve with solenoid operator type MPV1

**Construction 3**



- Max. coil power: 28W  
T6 for 40°C ambient temperature or  
T5 for 60°C ambient temperature

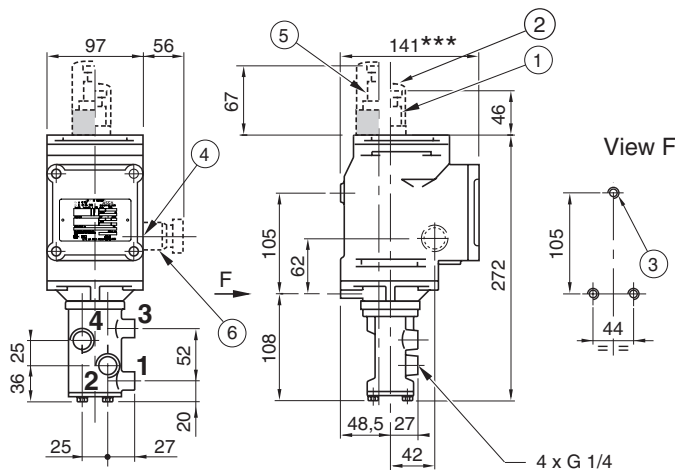
Ballon references for all construction types:

- ① Manual operator (optional)
- ② Cover for manual operator (optional)
- ③ Mounting: ØM6 x 9 holes
- ④ NPT 3/4
- ⑤ Manual operator with auxiliary switch (optional)
- ⑥ Explosionproof cable gland (on request)

\*\* + 115 mm for cover removal  
\*\*\* + 17 mm for cover removal

### 4/2 DC solenoid valve with solenoid operator type CPV1

**Construction 4**



| (C) | solenoid operator | weight (1) |
|-----|-------------------|------------|
| 1   | MPV1 (-)          | 4,2        |
| 2   | CPV1 (=)          | 8,0        |
| 3   | MPV1 (-)          | 4,8        |
| 4   | CPV1 (=)          | 8,7        |

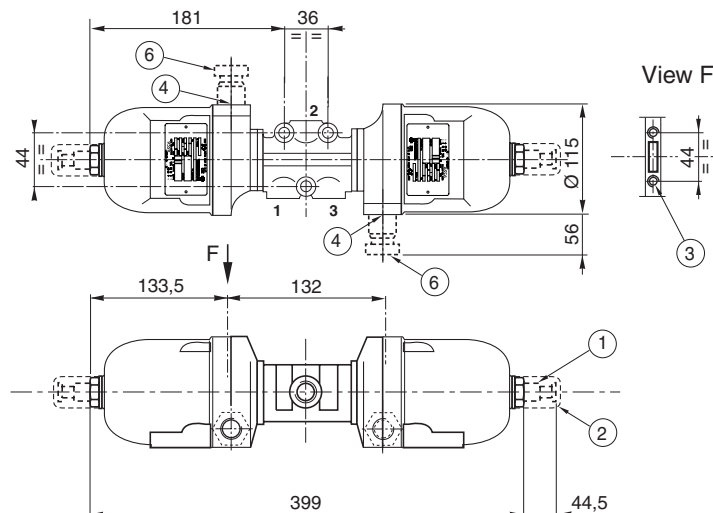
(C) Construction type (cable gland: 0,55 kg)  
(1) including coil.

- Max. coil power: 37W  
T6 for 60°C ambient temperature or  
T5 for 80°C ambient temperature

### Type MPV1 and CPV1 operators on series 231 (3/2) and 232 (4/2) spool valves - G 3/8

Installation of type MPV1 operators on T spool valves (series 231) - G 3/8

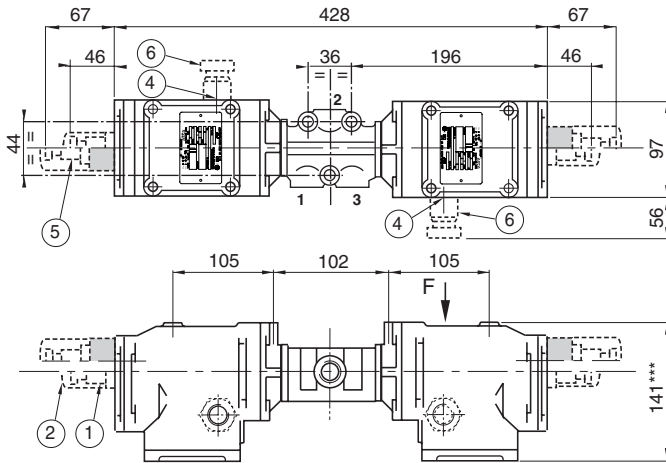
**Construction 5**



- Fluids: air or inert gas  
- Max. pressure: 10 bar  
- Max. coil power: 28W  
T6 for 40°C ambient temperature or  
T5 for 60°C ambient temperature

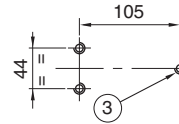
### Installation of type CPV1 operators on T spool valves (series 231) - G 3/8

#### Construction 6



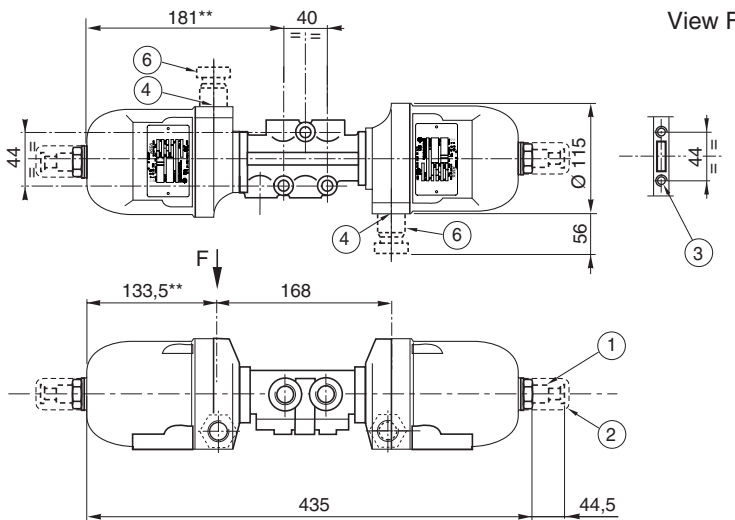
- Fluids: air or inert gas
- Max. pressure: 10 bar
- Max. coil power: 37W
- T6 for 60°C ambient temperature or
- T5 for 80°C ambient temperature

View F



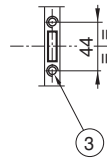
### Installation of type MPV1 operators on T spool valves (series 232) - G 3/8

#### Construction 7



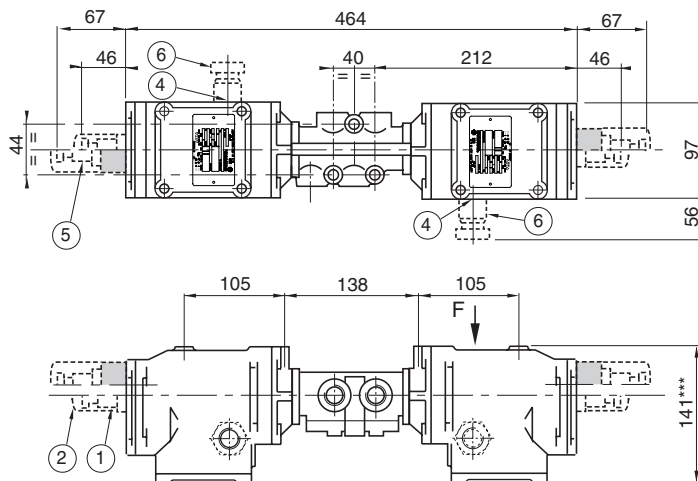
- Fluids: air or inert gas
- Max. pressure: 10 bar
- Max. coil power: 28W
- T6 for 40°C ambient temperature or
- T5 for 60°C ambient temperature

View F



### Installation of type CPV1 operators on T spool valves (series 232) - G 3/8

#### Construction 8



- Fluids: air or inert gas
- Max. pressure: 10 bar
- Max. coil power: 37W
- T6 for 60°C ambient temperature or
- T5 for 80°C ambient temperature

View F

