



SOLENOID VALVES

direct operated
flameproof enclosure

Ex d IIC T6-T5 Gb, 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 94/9/EC 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 IEC and EN: 60079-0, 60079-1 and 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 (mm²/s)
Response time (with air ΔP = 6 bar) 30 ms [opening/closing, AC version (-)]

fluids (*) (2)	temperature range (TS)	seal materials (*)
3/2 : water, air, inert gas, oil 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 Ex d IIC T6-T5 Gb
Coil connection Screw terminals 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 ⁽¹⁾
	inrush ~	holding ~		hot/cold =			~	=	
	(VA)	(VA)	(W)	(W)			230 V/50 Hz	28 V DC	
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

(1) Refer to the dimensional drawings on the following page.

TEMPERATURE CLASSIFICATION

AC (-) solenoids - operator type MPV1

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

DC (=) solenoids - operator type CPV1

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

Manual reset solenoid valve:

Version with manual reset operator + 5A contact.

Full order number:

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

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

SPECIFICATIONS

pipe size	orifice size	flow coefficient Kv		operating pressure differential (bar)				solenoid operator rating (W)		catalogue number		reference	
				min.	max. (PS)								
					air (*)		water/oil (*)						
	(mm)	(m³/h)	(l/min)	~	=	~	=	~	=	~	=		
3/2 NC - Normally closed													
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
4/2													
1/4	4	0,18	6	0	8	8	-	-	20	24/-	13101166	13101231	V401-4

(2) 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.

OPTIONS

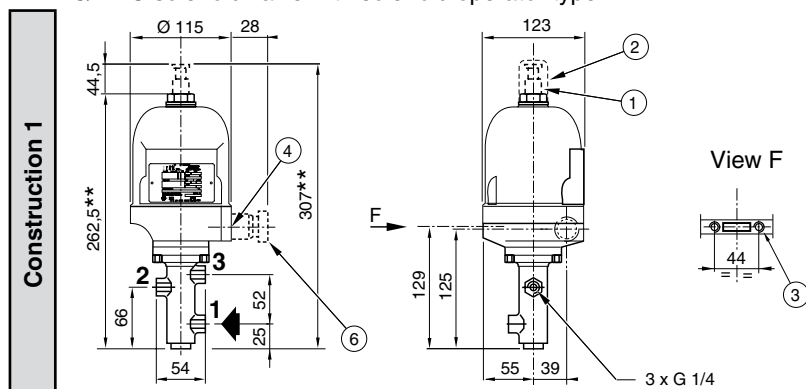
- Manual reset version with auxiliary 5A switch, catalogue number **260566 (MPV1)** or catalogue number **260568 (CPV1)**
- Stainless steel NC 3/2 solenoid valves (3 or 5 mm dia.), with IIR seals (butyl) for corrosive fluids: this option may limit the max. service pressure. Contact us
- 3 mm dia. solenoid 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

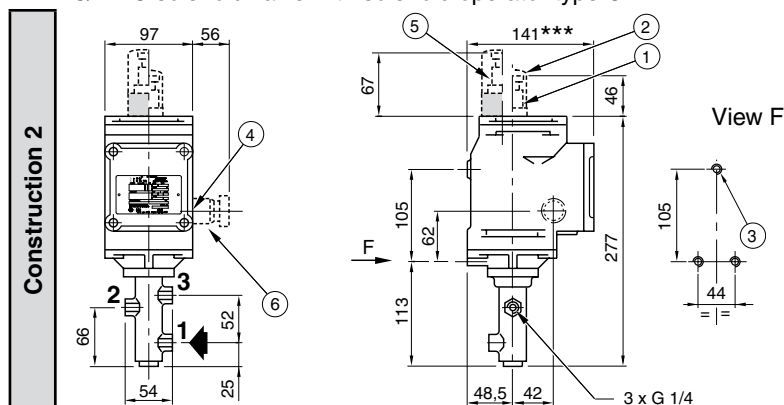
DIMENSIONS (mm), WEIGHT (kg)

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

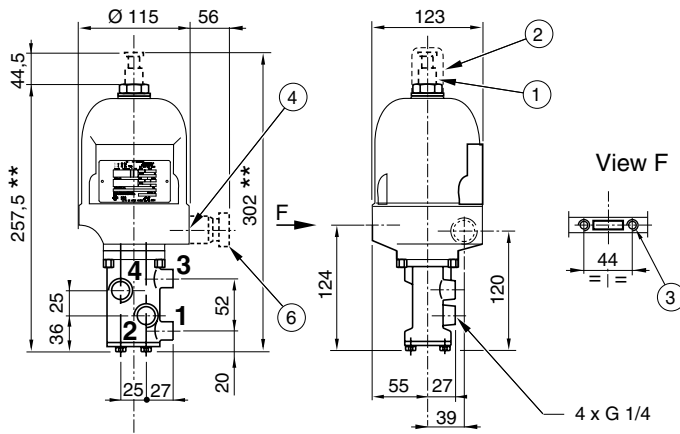
3/2 DC solenoid valve with solenoid operator type CPV1



- 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

Balloon references for all construction types:

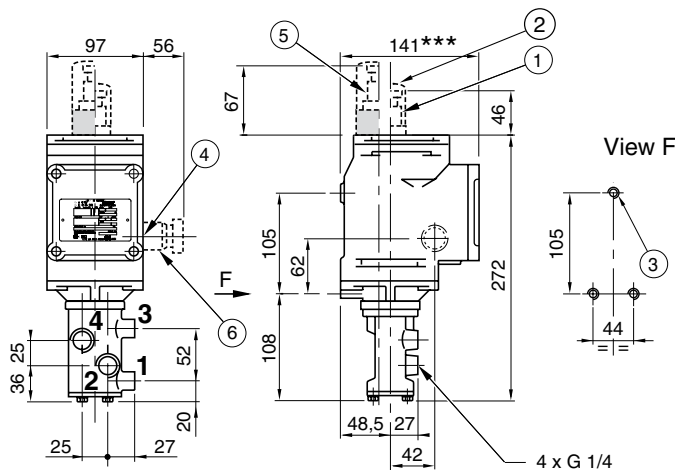
- ① Manual operator (optional)
- ② Cover for manual operator (optional)
- ③ Mounting: ØM6 x 9 holes
- ④ NPT 3/4
- ⑤ Manual operator with auxiliary switch (optional)
- ⑥ Explosionproof cable gland (on request)

** + 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)

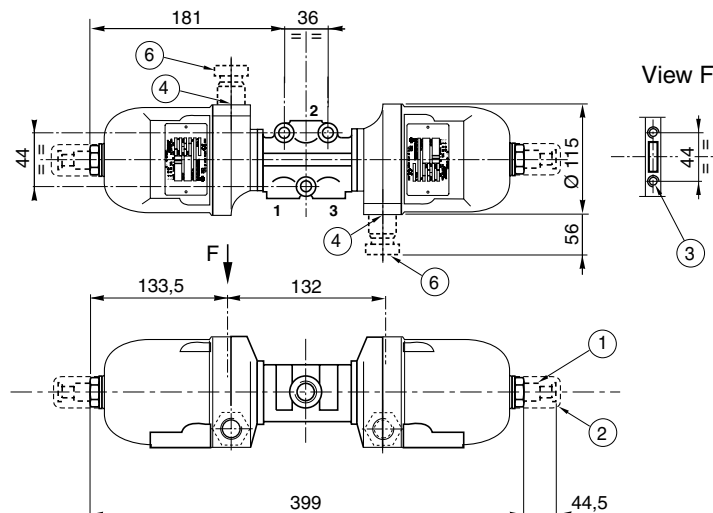
(1) including coil.

- 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

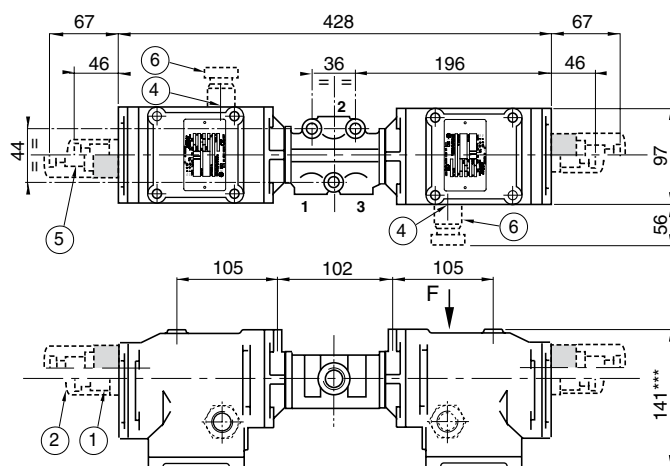
Construction 5



- 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

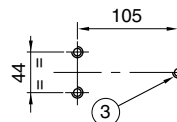
Installation of type CPV1 operators on T spool valves (series 231) - G 3/8

Construction 6



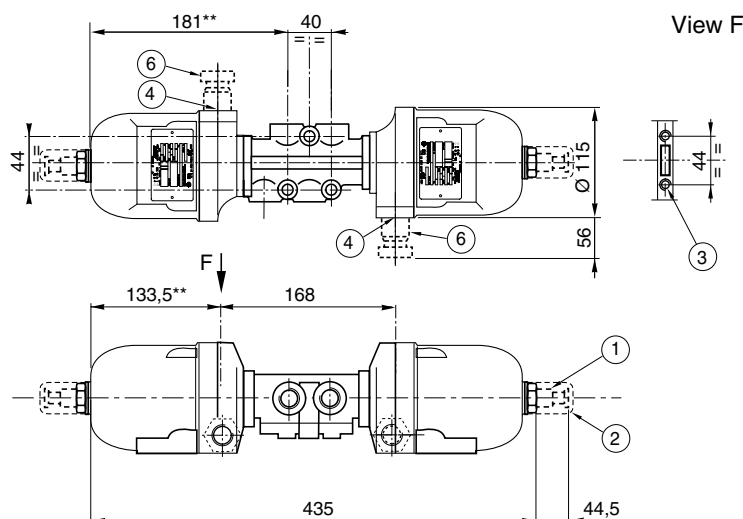
- Fluids: air or inert gas
- Max. pressure: 10 bar
- Max. coil power: 37W
T6 for 60°C ambient temperature or
T5 for 80°C ambient temperature

View F



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

Construction 7

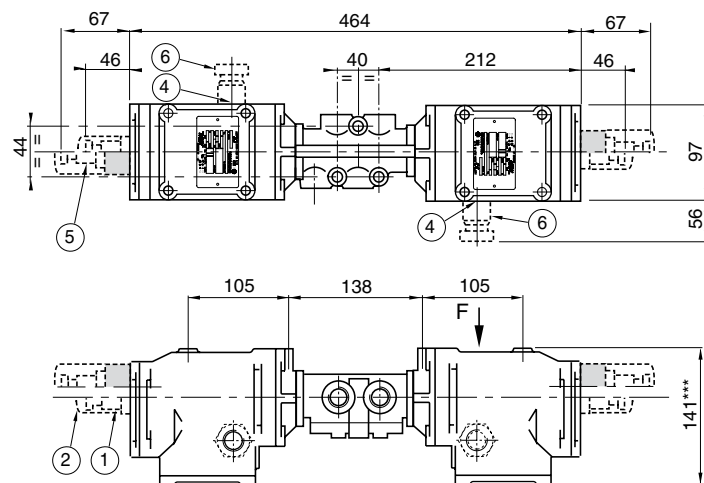


View F

- 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 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

