

### FEATURES

- Solenoid valves with explosionproof operator MB type for use in potentially explosive atmospheres according to ATEX Directive 94/9/EC  
EC type examination certificate no.: **LCIE 03 ATEX 6059 X**  
IECEx Certificate of Conformity no.: **IECEx LCI 09.0001X**
- 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 60079-31
- Easy electrical connection with screw terminals
- Versions with or without auxiliary manual operator
- Wide range of applications, particularly at low temperatures
- Solenoid valves in conformity with IEC 61508: 2010 route 2<sup>nd</sup> certified by TÜV with integrity levels:
  - SIL2 with HFT = 0
  - SIL3 with HFT = 1

### GENERAL

#### Differential pressure

0 to 10 bar [1 bar = 100 kPa]

#### Response time

30 - 50 ms

fluids (*)	temperature range (TS)	seal materials (*)
air, inert gas	- 40°C to + 60°C <sup>(2)</sup>	VMQ (silicone)

### MATERIALS IN CONTACT WITH FLUID

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

	Brass body	Stainless steel body
Body	Brass	AISI 316L SS
Internal parts	Stainless steel, brass	Stainless steel
Springs	Stainless steel	Stainless steel
Seals	VMQ	VMQ

### OTHER MATERIALS

Solenoid enclosure	Aluminium
Cover screws	Steel
Core tube	Stainless steel
Core and plugnut	Stainless steel
Nameplate	Aluminium

### ELECTRICAL CHARACTERISTICS

Coil insulation class	H	Ex d IIC T6-T5 Gb
Coil connection	Screw terminals	Ex t IIIC T85°C-T100°C Db IP65
Electrical safety	IEC 335	
Electrical enclosure protection	Moulded IP65 (EN 60529)	
Standard voltages	DC (=) : 24V - 48V	
(Other voltages and 60 Hz on request)	AC (~) : 24V - 48V - 115V - 230V / 50 Hz	

### SAFETY CODE

Ex d IIC T6-T5 Gb  
Ex t IIIC T85°C-T100°C Db IP65

prefix option	power ratings				operator ambient temperature range (TS) <sup>(2)</sup>	safety code	replacement coil		type <sup>(1)</sup>
	inrush	holding	hot/cold				~	=	
	(VA)	(VA)	(W)	(W)			230 V/50 Hz	24 V DC	
MB	35	15	19	12 / 15	-40 to +60	Ex d IIC Gb Ex t IIIC Db IP65	43004053	43002091	01

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

operator AC (~)				
Pn	max. ambient temp. °C <sup>(2)</sup>			
	surface temperature			
	T6	T5		
(W)	85°C	100°C		
19	50	60 (SIL = 65)		

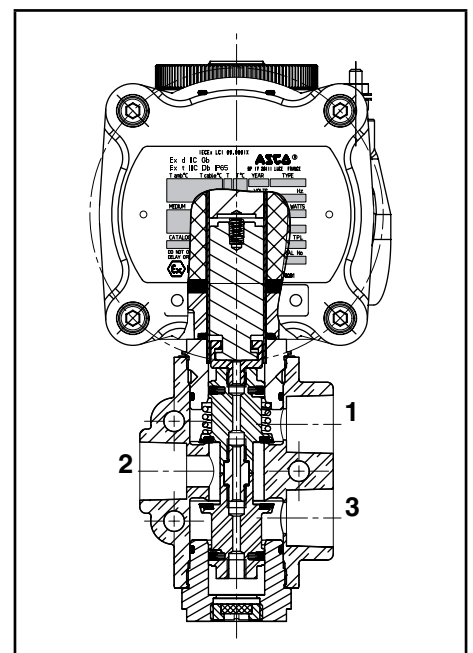
operator DC (=)				
Pn	max. ambient temp. °C <sup>(2)</sup>			
	surface temperature			
	T6	T5		
(W)	85°C	100°C		
15	50	60 (SIL = 65)		

### SPECIFICATIONS

pipe size	orifice size		flow coefficient Kv				operating pressure differential (bar)				power coil (W)		catalogue number					
													without manual operator		with maintained manual operator		with impulse manual operator	
	1 → 2	2 → 3	1 → 2	2 → 3	min.	max. (PS)	air (*)	brass	stainless steel	brass			stainless steel	brass	stainless steel			
	(mm)	(mm)	(m³/h)	(l/min)	(m³/h)	(l/min)	~	=	~	=								
NPT	(mm)	(mm)	(m³/h)	(l/min)	(m³/h)	(l/min)												
U - Universal, brass or stainless steel body, VMQ seals																		
1/2	10	10	1,6	27	1,5	25	0	10	10	19	-	12600013	12600019	12600017	12600023	12600057	12600059	
										-	15	12600014	12600020	12600018	12600024	12600058	12600060	
U - Universal, brass or stainless steel body, VMQ seals (Certified IEC 61508 Functional Safety data) <sup>(3)</sup>																		
1/2	10	10	1,6	27	1,5	25	0	10	10	19	-	12660024	12660026	-	-	12660036	12660038	
										-	15	12660025	12660027	-	-	12660037	12660039	

<sup>(2)</sup> Contact us for temperatures above +60°C.

<sup>(3)</sup> Including NPT 1/2 stainless steel exhaust protector.



### OPTIONS

- IECEx-ATEX cable gland, 3/4 NPT, pre-installed on solenoid valve, supplied with cable clamp (see "explosionproof solenoids" section)
  - for non-armoured cable of 8,5 to 16 mm dia., catalogue number **660510**
  - for armoured cable of ID 8,5 to 16 mm / OD 12 to 21 mm, catalogue number **660514**
- Other cable diameters
- Exhaust protector:
  - stainless steel for bronze and stainless steel bodies, catalogue number **560594** (standard for SIL versions)
- Oxygen service (min. -25°C; contact us for lower temperatures), catalogue number **970530**
- Temperatures down to -50°C, contact us
- Marine paint/anti-corrosive or dust environments (solenoid operator enclosure only)

### INSTALLATION

- Always install solenoid valves with body vertical and solenoid upward
- Can be used for the following functions, depending on how the ports are connected:

2/2 NC	2/2 NO	3/2 NC	3/2 NO	mixing	selector

- Solenoid valves have 3 mounting holes in body
- IEC 61508 Functional Safety, allowable temperature range: -40°C to +65°C.  
Probability of failure on demand, contact us
- Threaded pipe connection is standard NPT (ANSI 1.20.3)
- Installation/maintenance instructions are included with each valve

### DIMENSIONS (mm), WEIGHT (kg)

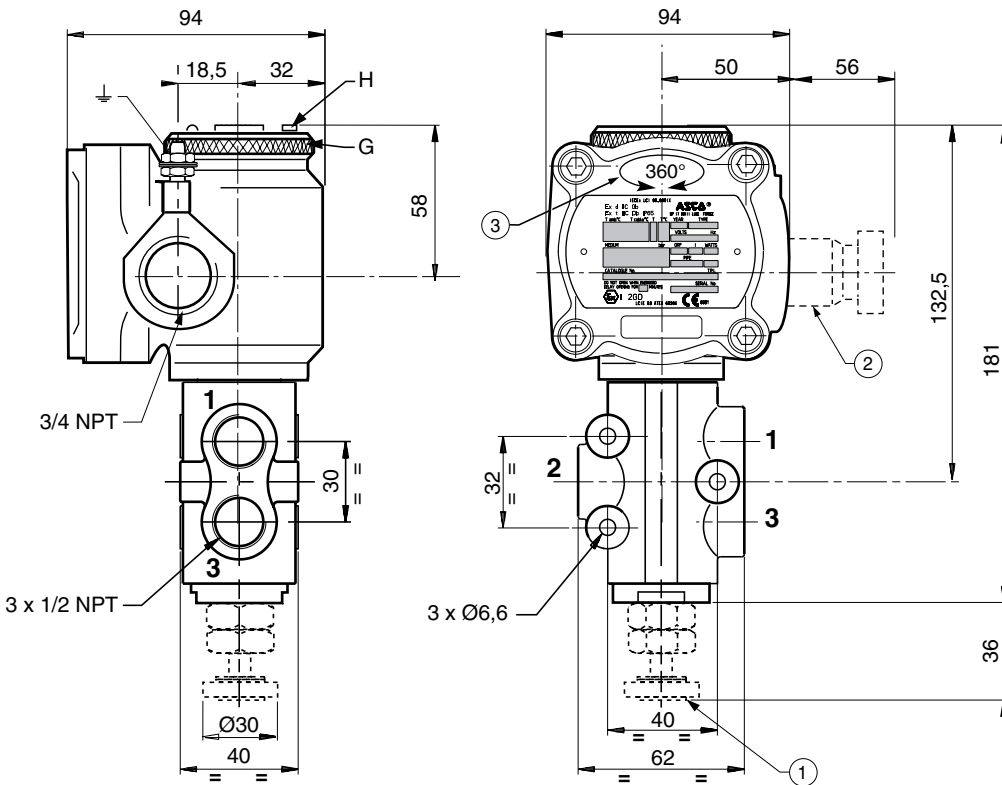


#### TYPE 01

Operator type "MB"

Aluminium

Ex d IIC T6-T5 Gb - Ex t IIIC T85°C-T100°C Db IP65



type	operator type	body	weight <sup>(1)</sup>
01	MB	brass	2,1
		stainless steel	1,7

<sup>(1)</sup> Without manual operator, including enclosure and coil.  
Manual operator version, add 0,1 kg

- ① Manual operator location.
- ② Explosionproof cable gland to IECEx-ATEX with clamp
- ③ To change the orientation of the solenoid operator relative to the ports, the screw (H) and the nut of the cover (G) must be loosened.