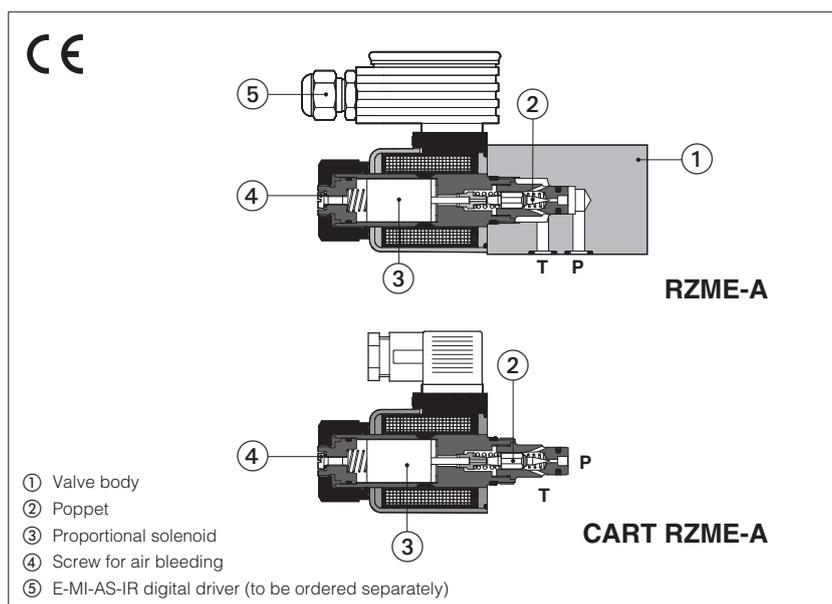




Table **F005-4/E**

## Proportional relief valves

direct, without transducer



### RZME-A, CART RZME-A

Poppet type, direct, proportional pressure relief valves for open loop pressure controls. They operate in association with off-board driver, which supply the proportional valves with proper current to align the valve regulation to the reference signal supplied to the driver.

They are available in following executions:

**RZME:** subplate mounting, ISO size 06

**CART RZME:** M20 cartridge execution

The solenoids are certified according to North American standard **cURus**.

Size: **06** - ISO 4401 (RZME); **M20** (CART RZME)

Max flow: **4 l/min**

Max pressure: **350 bar**

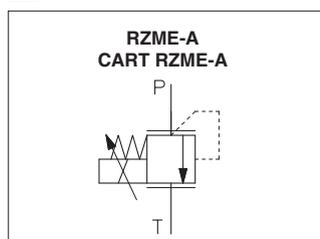
For cavity CART RZME see section **16**

### 1 MODEL CODE

<b>RZME</b>	-	<b>A</b>	-	<b>010</b>	/	<b>315</b>	-	*	/	*	-	*	/	*
<p>Proportional pressure relief valve, direct</p> <p><b>RZME</b> = subplate mounting <b>CART RZME</b> = cartridge execution</p> <p><b>A</b> = for off-board driver, see section <b>3</b></p> <p><b>Configuration:</b> <b>010</b> = reduced pressure on port A, discharge in T</p> <p><b>Max regulated pressure:</b>  <b>32</b> = 32 bar  <b>100</b> = 100 bar  <b>210</b> = 210 bar  <b>315</b> = 315 bar  <b>350</b> = 350 bar</p> <p><b>Seals material,</b> see section <b>8</b> :                      - = NBR  <b>PE</b> = FKM  <b>BT</b> = HNBR</p> <p>Series number</p> <p><b>Coil voltage,</b> see section <b>10</b> :                      - = standard coil for 24 VDC Atos drivers  <b>6</b> = optional coil for 12 VDC Atos drivers  <b>18</b> = optional coil for low current drivers (<b>1</b>)</p> <p><b>Coil with special connectors,</b> see section <b>12</b> :                      - = omit for standard DIN connector  <b>J</b> = AMP Junior Timer connector  <b>K</b> = Deutsch connector  <b>S</b> = Lead Wire connection</p>														

(1) Select valve's coil voltage /18 in case of electronic drivers not supplied by Atos, with power supply 24 VDC and with max current limited to 1A

### 2 HYDRAULIC SYMBOL



### 3 OFF-BOARD ELECTRONIC DRIVERS

Drivers model	E-MI-AC-01F (1)		E-MI-AS-IR (1)		E-BM-AS-PS		E-BM-AES
Type	Analog		Digital				
Voltage supply (VDC)	12	24	12	24	12	24	24
Valve coil option	/6	std	/6	std	/6	std	std
Format	plug-in to solenoid				DIN-rail panel		
Tech table	G010		G020		G030		GS050

(1) For **CART RZME** the electronic driver may interfere with the manifold surface. Please check the installation dimensions at section **16**

**4 GENERAL NOTES**

Atos digital proportionals valves are CE marked according to the applicable directives (e.g. Immunity and Emission EMC Directive). Installation, wirings and start-up procedures must be performed according to the general prescriptions shown in tech table **FS900** and in the installation notes supply with relevant components.

**5 GENERAL CHARACTERISTICS**

Assembly position	Any position
Subplate surface finishing to ISO 4401	Acceptable roughness index: Ra ≤ 0,8, recommended Ra 0,4 – Flatness ratio 0,01/100
MTTFd valves according to EN ISO 13849	150 years, see technical table P007
Ambient temperature range	<b>Standard</b> = -20°C ÷ +70°C <b>/PE option</b> = -20°C ÷ +70°C <b>/BT option</b> = -40°C ÷ +60°C
Storage temperature range	<b>Standard</b> = -20°C ÷ +80°C <b>/PE option</b> = -20°C ÷ +80°C <b>/BT option</b> = -40°C ÷ +70°C
Surface protection	Zinc coating with black passivation
Corrosion resistance	Salt spray test (EN ISO 9227) > 200 h
Conformity	CE according to EMC directive 2014/30/EU (Immunity: EN 61000-6-2; Emission: EN 61000-6-3) RoHS Directive 2011/65/EU as last update by 2015/65/EU REACH Regulation (EC) n°1907/2006

**6 HYDRAULIC CHARACTERISTICS**

Valve model	<b>RZME-A-010</b>		
Max regulated pressure	50; 100; 210; 315; 350;		
Min. regulated pressure [bar]	see min. pressure / flow diagrams at section <b>9</b>		
Max. pressure at port P [bar]	350		
Max. pressure at port T [bar]	210		
Max. flow [l/min]	4		
Response time 0-100% step signal <b>(1)</b> [ms] (depending on installation)	≤ 70		
Hysteresis [% of the max pressure]	≤ 1,5		
Linearity [% of the max pressure]	≤ 3		
Repeatability [% of the max pressure]	≤ 2		

**Note:** above performance data refer to valves coupled with Atos electronic drivers, see section **3**

**(1)** Average response time values; the pressure variation in consequence of a modification of the reference input signal to the valve is affected by the stiffness of the hydraulic circuit: greater is the stiffness of the circuit, faster is the dynamic response

**7 ELECTRICAL CHARACTERISTICS**

Power supplies	Nominal : +24 VDC Rectified and filtered : VRMS = 20 ÷ 32 VMAX (ripple max 10 % VPP)		
Max power consumption	30 W		
Coil voltage code	standard	option /6	option /18
Max. solenoid current	2,2 A	2,75 A	1 A
Coil resistance R at 20°C	3 ÷ 3,3 Ω	2 ÷ 2,2 Ω	13 ÷ 13,4 Ω
Insulation class	H (180°) Due to the occurring surface temperatures of the solenoid coils, the European standards ISO 13732-1 and EN982 must be taken into account		
Protection degree to DIN EN60529	IP65 with mating connectors		
Duty factor	Continuous rating (ED=100%)		
Certification	<b>cURus</b> North American Standard		

**8 SEALS AND HYDRAULIC FLUIDS** - for other fluids not included in below table, consult our technical office

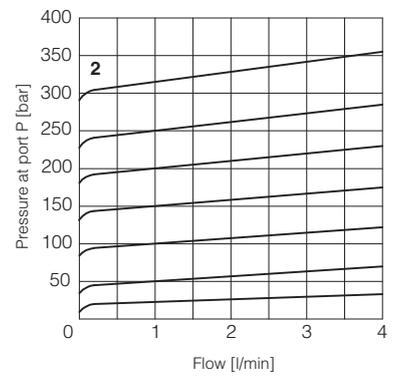
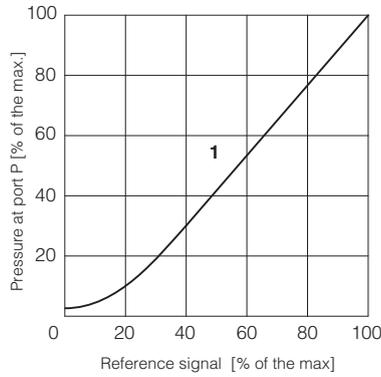
Seals, recommended fluid temperature	NBR seals (standard) = -20°C ÷ +80°C, with HFC hydraulic fluids = -20°C ÷ +50°C FKM seals (/PE option) = -20°C ÷ +80°C HNBR seals (/BT option) = -40°C ÷ +60°C, with HFC hydraulic fluids = -40°C ÷ +50°C		
Recommended viscosity	20 ÷ 100 mm <sup>2</sup> /s - max allowed range 15 ÷ 380 mm <sup>2</sup> /s		
Max fluid contamination level	normal operation	ISO4406 class 18/16/13    NAS1638 class 7	see also filter section at
	longer life	ISO4406 class 16/14/11    NAS1638 class 5	www.atos.com or KTF catalog
<b>Hydraulic fluid</b>	<b>Suitable seals type</b>	<b>Classification</b>	<b>Ref. Standard</b>
Mineral oils	NBR, FKM, HNBR	HL, HLP, HLPD, HVLP, HVLPD	DIN 51524
Flame resistant without water	FKM	HFDU, HFDR	ISO 12922
Flame resistant with water	NBR, HNBR	HFC	

**9 DIAGRAMS** (based on mineral oil ISO VG 46 at 50 °C)

**1 = Regulation diagrams**  
with flow rate Q = 1 l/min

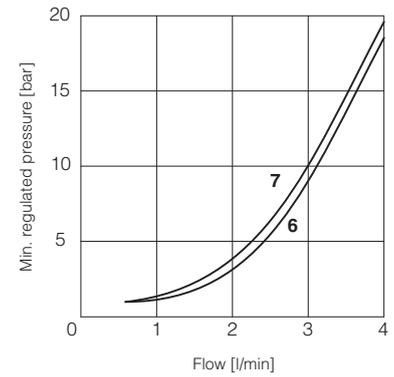
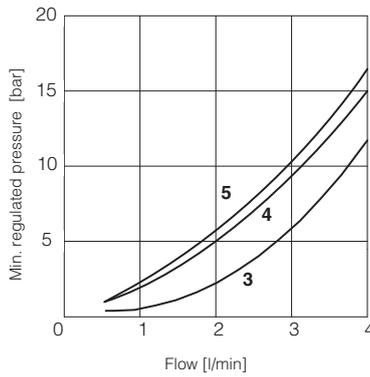
**Note:** the presence of counter pressure at port T can affect the effective pressure regulation

**2 = Pressure/flow diagrams**  
with reference signal set at Q = 1 l/min



**3-7 = Min. pressure/flow diagrams**  
with zero reference signal

- 3 = pressure range: 50
- 4 = pressure range: 100
- 5 = pressure range: 210
- 6 = pressure range: 315
- 7 = pressure range: 350



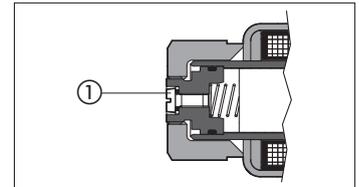
**10 COIL VOLTAGE OPTIONS**

**6** = Optional coil to be used with Atos drivers with power supply 12 VDC.

**18** = Optional coil to be used with electronic drivers not supplied by Atos, with power supply 24 Vdc and with max current limited to 1A.

**11 AIR BLEEDING**

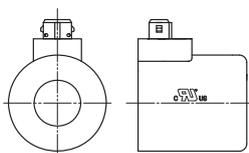
At the first valve commissioning the air eventually trapped inside the solenoid must be bled-off through the screw ① located at the rear side of the solenoid housing.  
The presence of air may cause pressure instability and vibrations.



**12 COILS WITH SPECIAL CONNECTORS**

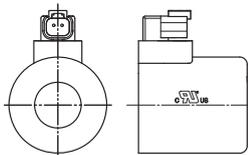
**J option**

Coil type COZEJ  
AMP Junior Timer connector  
Protection degree IP67



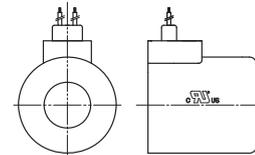
**K option**

Coil type COZEK  
Deutsch connector, DT-04-2P male  
Protection degree IP67

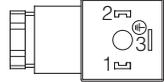


**S option**

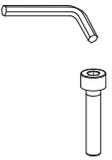
Coil type COZES  
Lead Wire connection  
Cable length = 180 mm



**13 SOLENOID CONNECTION**

PIN	SIGNAL	TECHNICAL SPECIFICATION	Connector code 666 
1	COIL	Power supply	
2	COIL	Power supply	
3	GND	Ground	

14 FASTENING BOLTS AND SEALS FOR RZME

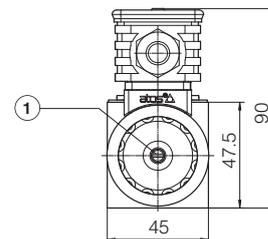
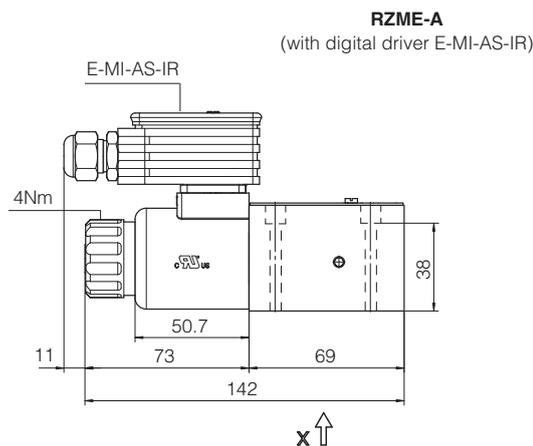
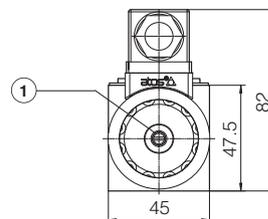
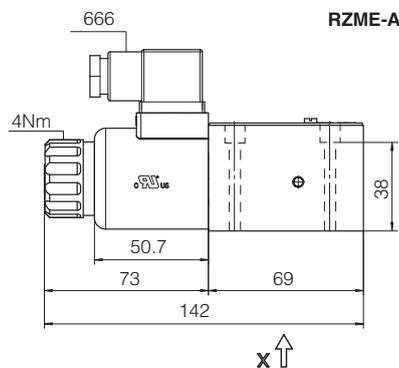
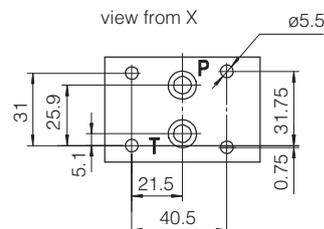
	<p><b>Fastening bolts:</b> 4 socket head screws M5x50 class 12.9 Tightening torque = 8 Nm</p>
	<p><b>Seals:</b> 2 OR 108 Diameter of ports P, T: <math>\varnothing 5</math> mm</p>

15 INSTALLATION DIMENSIONS FOR RZME [mm]

ISO 4401: 2005

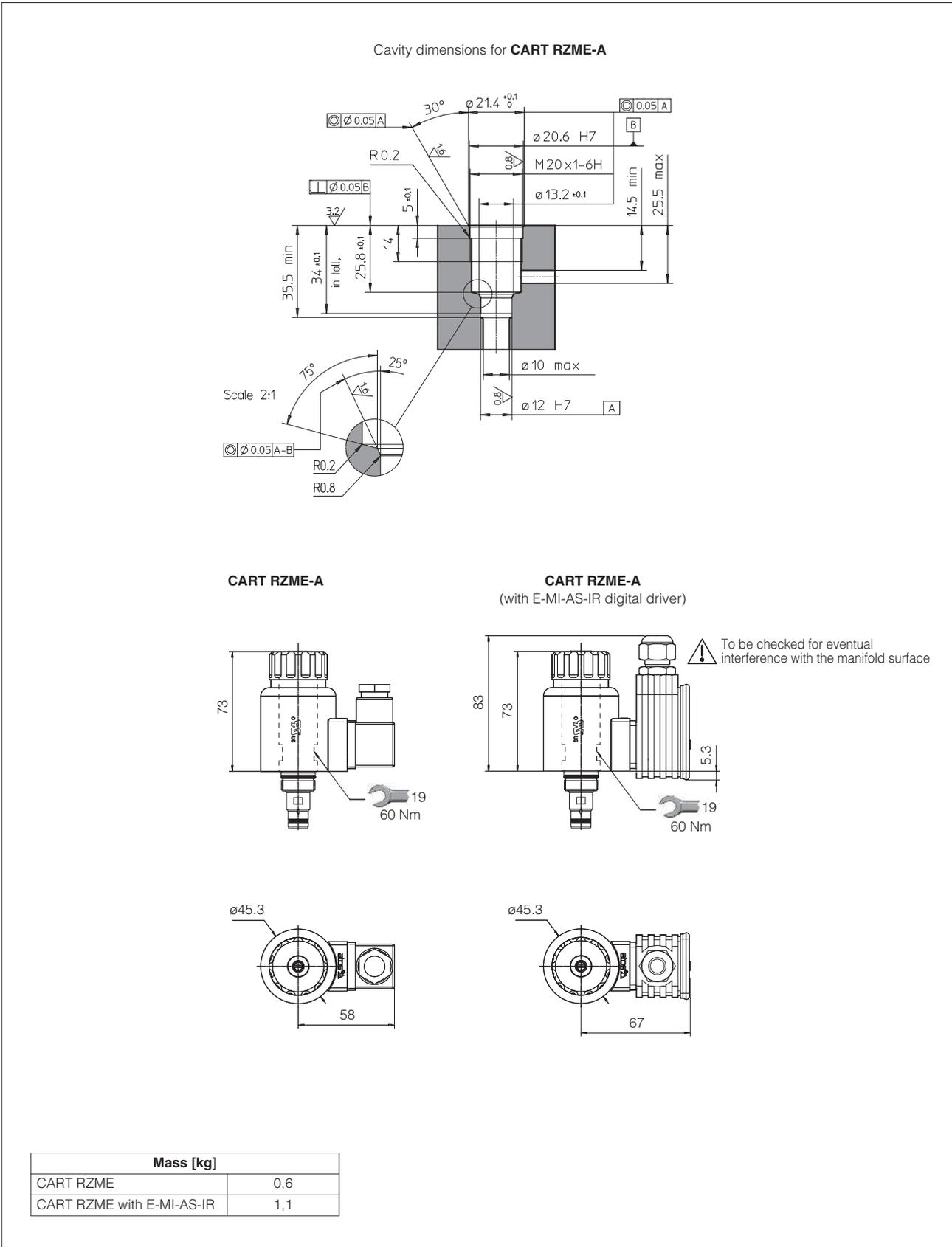
Mounting surface: 4401-03-02-0-05 (see table P005)  
(without ports A and B)

Mass [kg]	
RZME	1,5
RZME with E-MI-AS-IR	2,0



① = Air bleeding, see section 11 

16 INSTALLATION DIMENSIONS FOR CART RZME [mm]



17 RELATED DOCUMENTATION

<b>FS001</b>	Basics for digital electrohydraulics	<b>GS050</b>	E-BM-AES digital driver
<b>FS900</b>	Operating and maintenance information for proportional valves	<b>GS500</b>	Programming tools
<b>G010</b>	E-MI-AC analog driver	<b>K800</b>	Electric and electronic connectors
<b>G020</b>	E-MI-AS-IR digital driver	<b>P005</b>	Mounting surfaces for electrohydraulic valves
<b>G030</b>	E-BM-AS digital driver		