

# Pressure relief valves type ARAM

two stage, in line mounting - G 3/4" and G 11/4" threaded ports



**ARAM** are two stage pressure relief valves with balanced poppet, designed with threaded ports for in-line mounting.

In standard versions the piloting pressure of the poppet (1) of the main stage (2) is regulated by means of a grub screw (3) protected by cap (4) installed in the cover (5).

Optional versions with setting adjustment by handwheel (6) instead of the grub screw are available on request. Clockwise rotation increases the pressure.

ARAM can be equipped with a pilot solenoid valve ⑦ for venting or for different pressure setting, type:

- DHI for AC and DC supply, with cURus certified solenoids
- DHE for AC and DC supply, high performances with **cURus** certified solenoids

Threaded ports: G 3/4", G 11/4" Max flow: 350, 500 l/min Max pressure up to 350 bar





For PED version see technical table CY045

(1) Only for ARAM with solenoid valve for venting and/or for the selection of the setting pressure.



## 2 HYDRAULIC SYMBOL



## **3 HYDRAULIC CHARACTERISTICS**

Valve model	ARAM-20	ARAM-32				
Setting [bar]	50; 100	210; 350				
Pressure range [bar]	4÷50; 6÷100	7÷210; 8÷350				
Max pressure [bar]	ports P, X = 350 Ports T, Y = 210 (without pilot solenoid valve) For version with pilot solenoid valve, see technical tables E010 and E015					
Max flow [l/min]	350	500				

#### 4 MAIN CHARACTERISTICS, SEALS AND FLUIDS - for other fluids not included in below table, consult our technical office

Assembly position	Any position				
Compliance	CE to Low Voltage Directive 2014/35/EU RoHS Directive 2011/65/EU as last update by 2015/65/EU REACH Regulation (EC) n°1907/2006				
Ambient temperature	Standard execution = -30°C ÷ +70°C /PE option = -20°C ÷ +70°C /BT option = -40°C ÷ +70°C				
Seals, recommended fluid temperature	NBR seals (standard) = $-20^{\circ}C \div +80^{\circ}C$ , with HFC hydraulic fluids = $-20^{\circ}C \div +50^{\circ}C$ FKM seals (/PE option) = $-20^{\circ}C \div +80^{\circ}C$ HNBR seals (/BT option) = $-40^{\circ}C \div +60^{\circ}C$ , with HFC hydraulic fluids = $-40^{\circ}C \div +50^{\circ}C$				
Recommended viscosity	15÷100 mm²/s - max allowed range 2,8 ÷ 500 mm²/s				
Fluid contamination class	ISO 4406 class 21/19/16 NAS 1638 class 10, in line filters of 25 μm (β25 ≥75 recommended)				
Hydraulic fluid	Suitable seals type	Classification	Ref. Standard		
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			

#### 4.1 Coils characteristics (for ARAM with pilot solenoid valve)

Insulation class	DHI pilot	<b>H</b> (180°C)	Due to the occurring surface temperatures of the			
	DHE pilot	H (180°C) for DC coils F (155°C) for AC coils	and EN ISO 4413 must be taken into account			
Protection degree to DIN EN 6	0529	IP 65 (with connectors 666, 667, 669 or E-SD correctly assembled)				
Relative duty factor		100%				
Supply voltage and frequency		See electric feature 7				
Supply voltage tolerance		± 10%				
Certification		cURus North American standard				



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## 5 OPTIONS

- /E = external pilot
- N = regulating handwheel instead of grub screw protected by cap (for handwheel features, see table K150)
- /WP = prolunged manual override protected by rubber cap (only for ARAM with pilot solenoid valve)
- /Y = external drain (only for ARAM with pilot solenoid valve)

#### 6 ELECTRIC CONNECTORS ACCORDING TO DIN 43650 FOR ARAM WITH SOLENOID VALVE

The connectors must be ordered separately

Code of connector	Function			
666	66 Connector IP-65, suitable for direct connection to electric supply source			
667	As 666 connector IP-65 but with built-in signal led, suitable for direct connection to electric supply source			

For other available connectors see tab. E010 and K500

## 7 ELECTRIC FEATURES FOR AGAM WITH SOLENOID VALVE

Solenoid valve type	E	xternal supply ominal voltage ± 10% (1)	Voltage code	Type of connector	Pov consu (: DHI	wer mption <b>3)</b>   DHE	Code of spare coil DHI	Colour of coil label DHI	Code of spare coil DHE
DHI DHE	DC	12 DC 24 DC 110 DC 220 DC	12 DC 24 DC 110 DC 220 DC	666 or 667	33 W	30 W	COU-12DC COU-24DC COU-110DC COU-220DC	green red black black	COE-12DC COE-24DC COE-110DC COE-220DC
	AC	110/50 AC <b>(2)</b> 115/60 AC 120/60 AC 230/50 AC <b>(2)</b> 230/60 AC	110/50/60 AC 115/60 AC (5) 120/60 AC (6) 230/50/60 AC 230/60 AC	666 or 667	60 VA - 60 VA 60 VA 60 VA	58 VA 80 VA - 58 VA 80 VA	COI-110/50/60AC - COI-120/60AC COI-230/50/60AC COI-230/60AC	yellow - white light blue silver	COE-110/50/60AC COE-115/60AC - COE-230/50/60AC COE-230/60AC

(1) For other supply voltages available on request see technical tables E010, E015.

(2) Coil can be supplied also with 60 Hz of voltage frequency: in this case the performances are reduced by 10 ÷ 15% and the power consumption is 55 VA (DHI) and 58 VA

(3) Average values based on tests performed at nominal hydraulic condition and ambient/coil temperature of 20°C.

(4) When solenoid is energized, the inrush current is approx 3 times the holding current.

(5) Only for DHE

(6) Only for DHI

8 REGULATED PRESSURE VERSUS FLOW DIAGRAMS based on mineral oil ISO VG 46 at 50°C





#### 9 MINIMUM PRESSURE VERSUS FLOW DIAGRAMS based on mineral oil ISO VG 46 at 50°C







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Overall dimensions refer to valves with connectors type 666





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