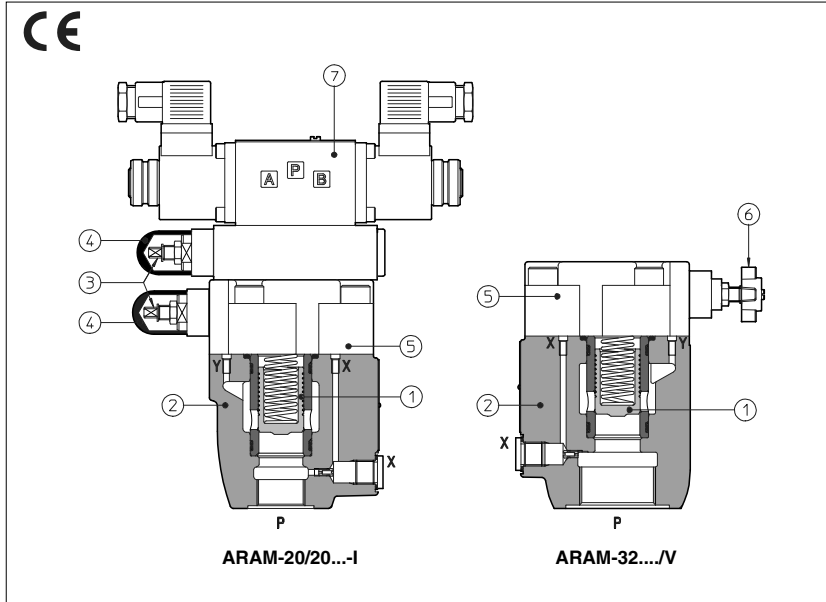


# Pressure relief valves type ARAM

two stage, in line mounting - G 3/4" and G 1 1/4" 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.

Also available in safety option with sealed regulation:

**/PED** conforming to PED Directive (97/23/CE). The valves are factory set at the pressure level required by the customer with a flow through the valve as shown in section ④. For this version the P, Q limits are shown in section ⑩.

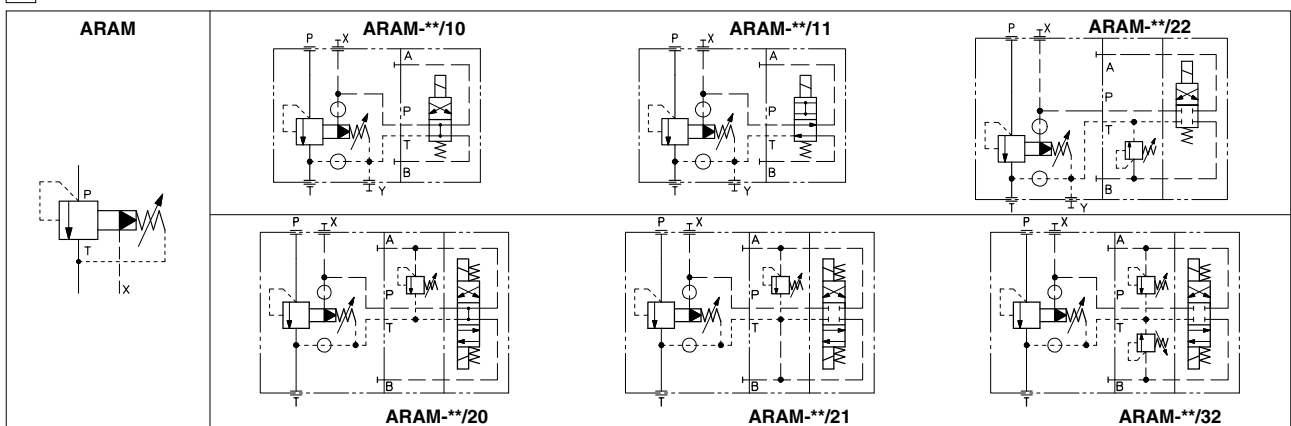
ARAM can be equipped with a venting solenoid valve ⑦ (for venting or for different pressure setting). Another setting control can be made through the independent pilot port.

Threaded ports: G 3/4", G 1 1/4".  
Max flow: 350, 500 l/min respectively.  
Pressure up to 350 bar.

## 1 MODEL CODE

ARAM	- 20	/ 2	0	/210 /100/100	/V	/*	-1	X	24DC	**	/*
ARAM = pressure relief valve threaded port connections		(1)	(1)	(1)			(1)	(1)	(1)		
Size: 20 = port P - G 3/4" 32 = port P - G 1 1/4"											
Number of the different setting pressure values: 1 = one setting pressure 2 = two setting pressure 3 = three setting pressure											
0 = venting with de-energized solenoid 1 = venting with energized solenoid 2 = without venting											
Setting: see section ③ for available setting											
Pressure range of second/third setting (2): 50 = 4÷50 bar; 100 = 6÷100 bar; 210 = 7÷210 bar; 350 = 8÷350 bar											
Options, see section ⑤ /E /PED /V /WP /Y											
Synthetic fluids: WG = water-glycol PE = phosphate ester											
Series number											
Voltage code, see section ⑧: 00 = solenoid valve without coils (only for OI solenoid)											
X = without connector See section ⑦ for available connectors, to be ordered separately											
Solenoid of pilot valve: -1 = solenoid OI (DHI) for AC and DC supply											

## 2 HYDRAULIC SYMBOL



### 3 HYDRAULIC CHARACTERISTICS

Valve model		ARAM-20	ARAM-32
Setting	standard	50; 100; 210; 350	
	/PED		
Pressure range	standard	4÷50; 6÷100; 7÷210; 8÷350	
	/PED	10÷50; 10÷100; 10÷210; 10÷350	
Max flow	standard	350	500
	/PED		

### 4 MAIN CHARACTERISTICS OF PRESSURE CONTROL VALVES TYPE ARAM

Assembly position / location	Any position
Ambient temperature	-20°C to + 70°C
Fluid	Hydraulic oil as per DIN 51524 . . . 535; for other fluids see section 11
Recommended viscosity	15 ÷ 100 mm <sup>2</sup> /s at 40°C (ISO VG 15 ÷ 100)
Fluid contamination class	ISO 19/16, achieved with in line filters at 25 µm value and β <sub>0.5</sub> ≥ 75 (recommended)
Fluid temperature	-20°C +60°C (standard and /WG seals) -20°C +80°C (/PE seals)

#### 4.1 Coils characteristics

Insulation class	H
Connector protection degree	IP 65
Relative duty factor	100%
Supply voltage and frequency	See electric feature 8
Supply voltage tolerance	± 10%

### 5 OPTIONS

- /E** = external pilot
- /PED** = conforming to Directive 97/23/CE (not available with option *N*)
- /V** = regulating handwheel instead of grub screw protected by cap (for handwheel features, see table K150), (not available with option /PED)
- /WP** = prolonged manual override protected by rubber cap (only for ARAM with pilot solenoid valve)
- /Y** = external drain (only for ARAM with pilot solenoid valve)

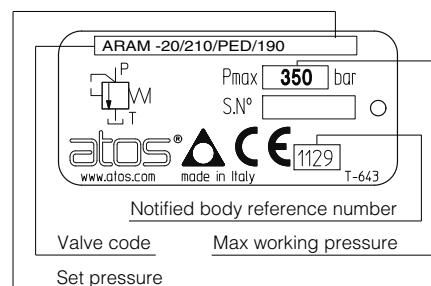
### 6 SETTING OF VALVES WITH /PED OPTION

The /PED valves are factory set at the pressure level required by the customer (every 1 bar) at the following flow shown in the table.

The set pressure is marked on the valve nameplate, see section 6.1

VALVE MODEL	FLOW FOR FACTORY PRESSURE SETTING (l/min)
ARAM-20	25
ARAM-32	25

#### 6.1 EXAMPLE OF NAMEPLATE FOR /PED OPTION



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

The connectors must be ordered separately

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

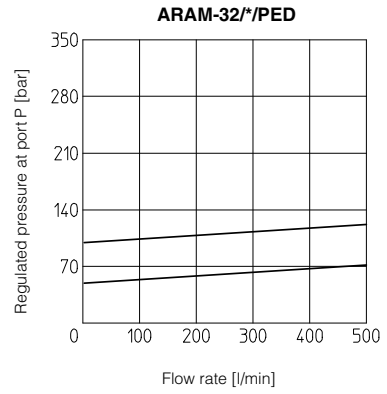
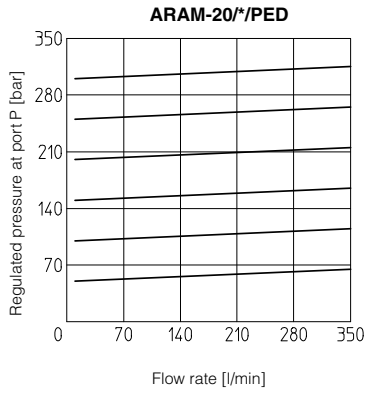
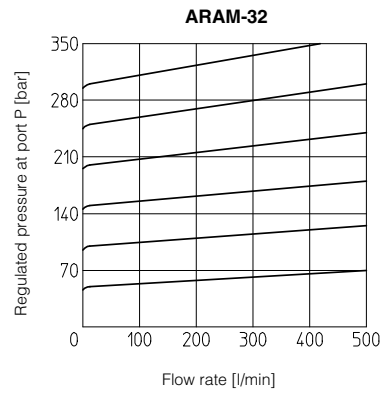
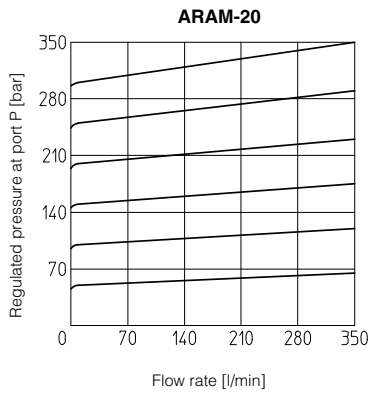
For other available connectors see tab. E010 and K500.

### 8 ELECTRIC FEATURES FOR ARAM WITH SOLENOID VALVE

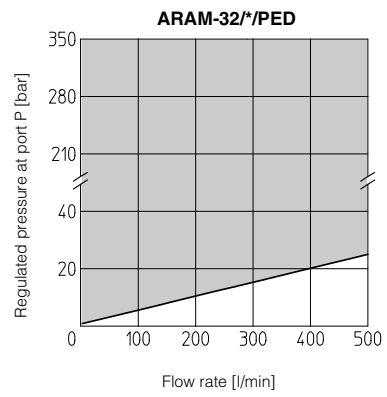
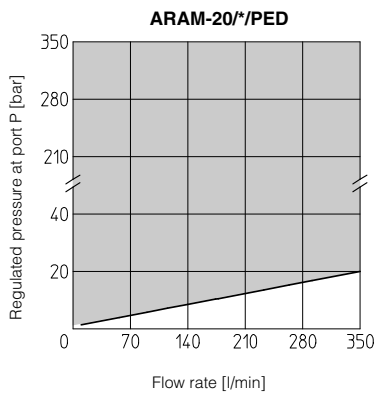
Type of solenoid	External supply nominal voltage ± 10% (1)		Voltage code	Type of connector	Power consumption (3)	Code of spare coil	Colour of coil label
OI	DC	6 DC	<b>6 DC</b>	SP-666 or SP-667	33 W	SP-COU-6DC /80 SP-COU-12DC /80 SP-COU-24DC /80 SP-COU-48DC /80	brown green red silver
		12 DC 24 DC 48 DC	<b>12 DC</b> <b>24 DC</b> <b>48 DC</b>				
OI	AC	110/50 AC (2) 120/60 AC 230/50 AC (2) 230/60 AC	<b>110/50/60 AC</b> <b>120/60 AC</b> <b>230/50/60 AC</b> <b>230/60 AC</b>	SP-666 or SP-667	60 VA (4)	SP-COI-110/50/60AC /80 SP-COI-120/60AC /80 SP-COI-230/50/60AC /80 SP-COI-230/60AC /80	yellow white light blue silver

- (1) For other supply voltages available on request see technical table E010.
- (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.
- (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. Inrush current values correspond to a power consumption of about 150 VA.

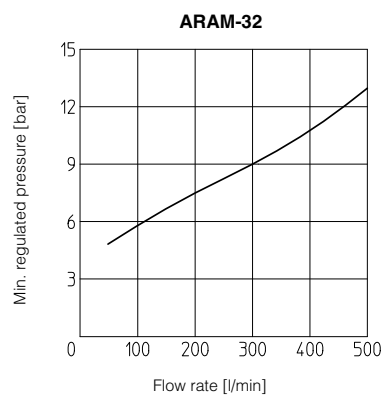
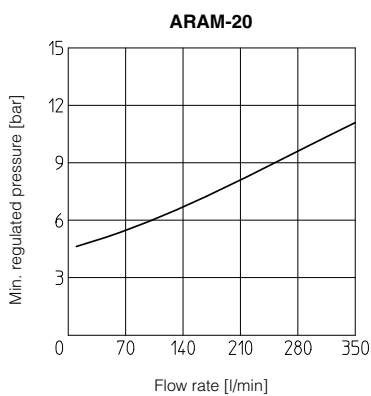
**9 REGULATED PRESSURE VERSUS FLOW DIAGRAMS** based on mineral oil ISO VG 46 at 50°C



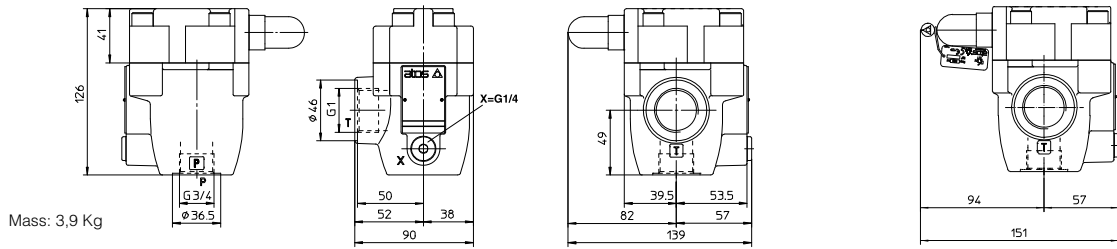
**10 PERMISSIBLE RANGE (shared area)** based on mineral oil ISO VG 46 at 50°C



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



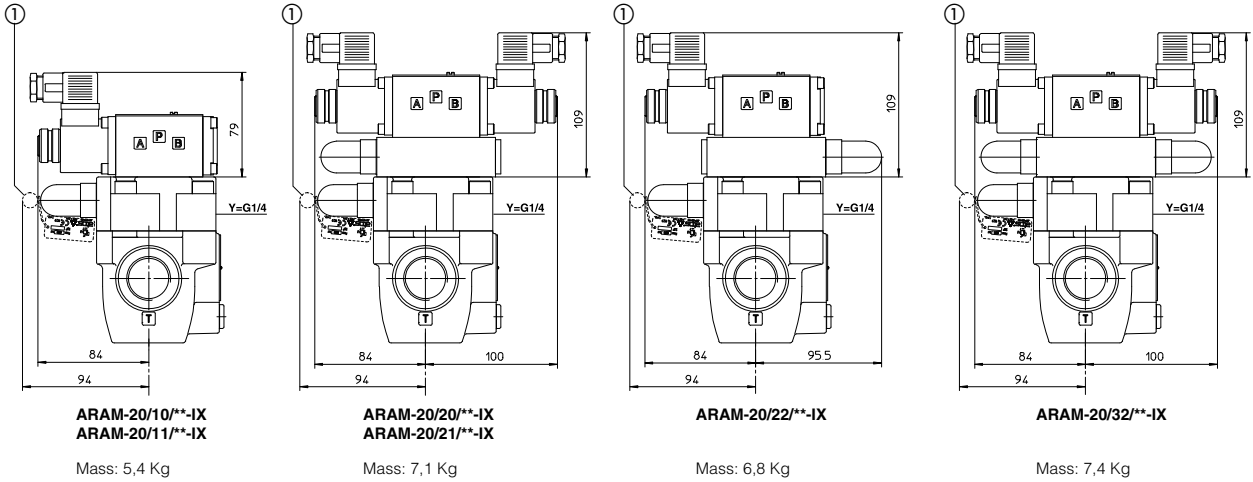
## ARAM-20



Mass: 3,9 Kg

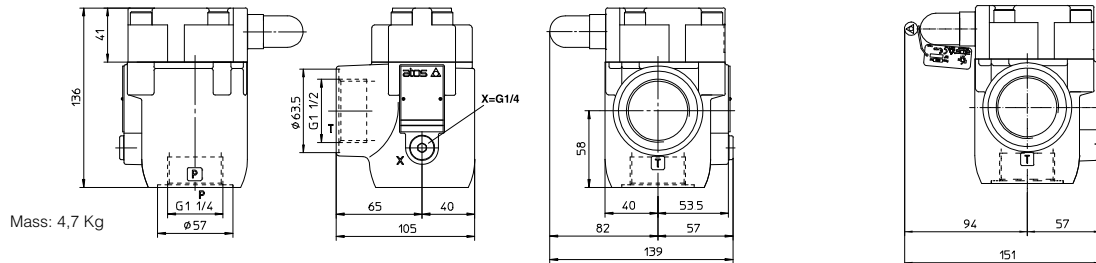
X = port connection for external pilot  
Y = port connection for external drain

OPTION /PED



① = sealed adjustment and nameplate only for /PED option

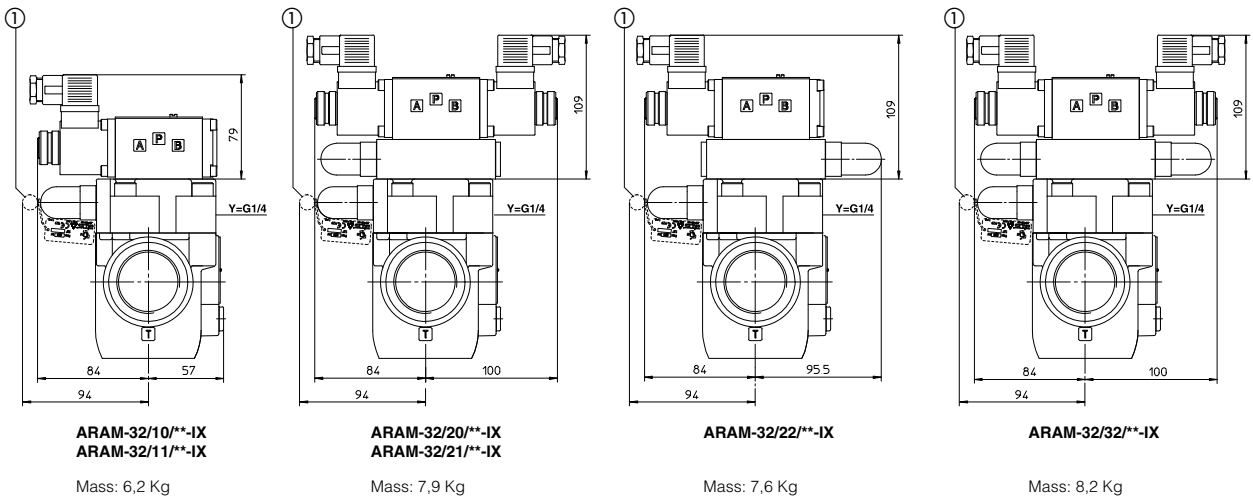
## ARAM-32



Mass: 4,7 Kg

X = port connection for external pilot  
Y = port connection for external drain

OPTION /PED



① = sealed adjustment and nameplate only for /PED option

Overall dimensions refer to valves with connectors type SP-666