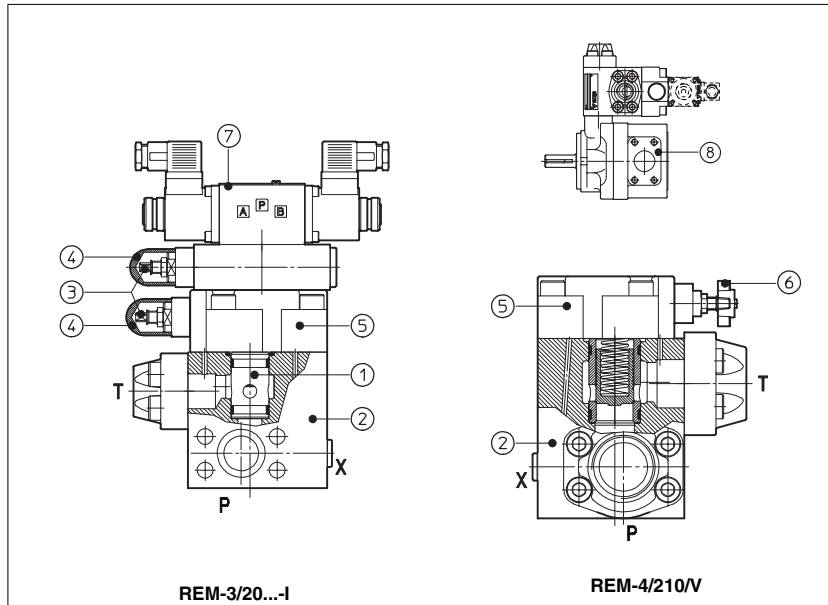


# Pressure relief valves type REM

two stage, flange mounting SAE 3/4", 1", 1 1/4"



REM are double stage pressure relief valves with balanced poppet and SAE flange connection, designed to operate in oil hydraulic systems.

**They can be direct by mounted with SAE flange attachments on the pumps outlet ports ⑧** and, in particular, on the PFE pumps (see tab. A005, A007).

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 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.

REM can be equipped with a venting solenoid valve ⑦ (for normally open or normally closed valves).

Mounting surface: SAE flange connection: 3/4", 1", 1 1/4"  
 Max flow: 200, 400 and 600 l/min respectively.  
 Pressure up to 350 bar (depending on models).

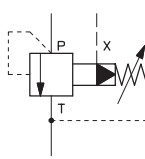
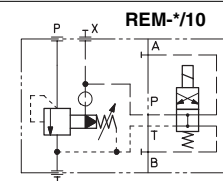
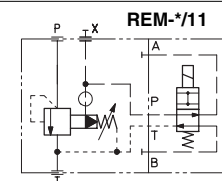
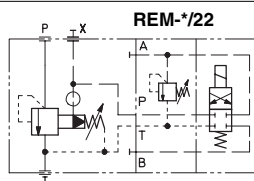
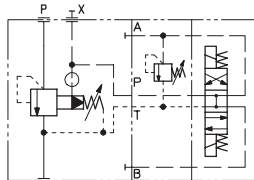
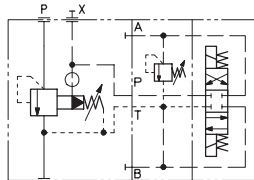
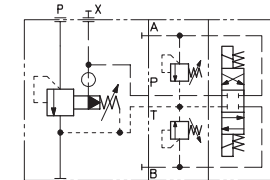
## 1 MODEL CODE

<b>REM</b>	<b>- 4 / 2</b>	<b>0</b>	<b>/210 /100/100</b>	<b>/V</b>	<b>-I</b>	<b>X</b>	<b>24DC</b>	<b>**</b>	<b>/*</b>
REM = pressure relief valve SAE flange mounting	(1)	(1)	(1)		(1)	(1)	(1)		Synthetic fluids: WG = water-glycol PE = phosphate ester
Size: 3 = SAE 3/4" 4 = SAE 1" 5 = SAE 1 1/4"									Design number
Number of the different setting pressure values: 1 = one setting pressure 2 = two setting pressure 3 = three setting pressure									Supply voltage, see section 7: 00 = solenoid valve without coils (only for OI solenoid)
0 = venting with de-energized solenoid 1 = venting with energized solenoid 2 = without venting									X = without connector See section 6 for available connectors, to be ordered separately
Pressure range: 50 = 4-50 bar; 100 = 6-100 bar; 210 = 7-210 bar; 350 = 8-350 bar (only for REM-3)									Solenoid of pilot valve: -I = solenoid OI (DHI) for AC and DC supply
									Options (2): /V = regulating by handwheel instead of a grub screw protected by cap
									Pressure range of second/third setting: 50 = 4-50 bar; 100 = 6-100 bar; 210 = 7-210 bar; 350 = 8-350 bar (only for REM-3)

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

(2) For handwheel features, see technical table K150

## 2 HYDRAULIC CHARACTERISTICS

			
			
Valve model	<b>REM-3</b>		
Max flow [l/min]	200		
Pressure range [bar]	4-50; 6-100; 7-210; 8-350		
	<b>REM-4</b>		<b>REM-5</b>
Max flow [l/min]	400		600
Pressure range [bar]	4-50; 6-100; 7-210		4-50; 6-100; 7-210

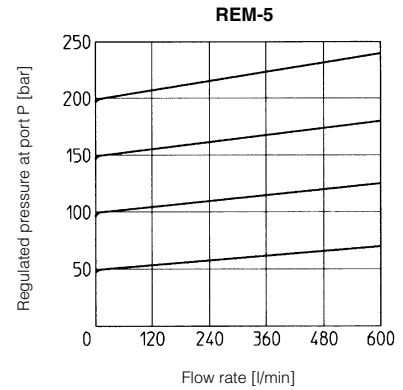
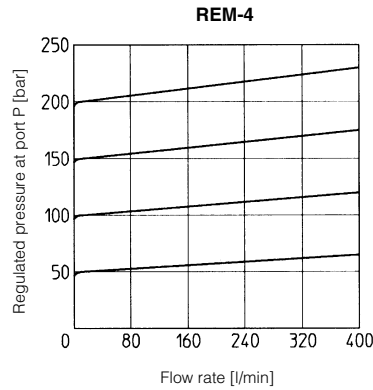
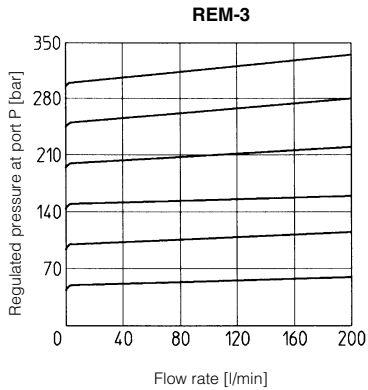
### 3 MAIN CHARACTERISTICS OF PRESSURE RELIEF VALVES TYPE REM

Assembly position	These valves can be installed in any position on the outlet port P of pumps with SAE flange attachments and in particular on PFE vane pumps
Subplate surface finishing	Roughness index $\sqrt{0.4}$ , flatness ratio 0,01/100 (ISO 1101)
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 $\beta_{25} \geq 75$ (recommended)
Fluid temperature	-20°C +60°C (standard and /WG seals) -20°C +80°C (IPE seals)

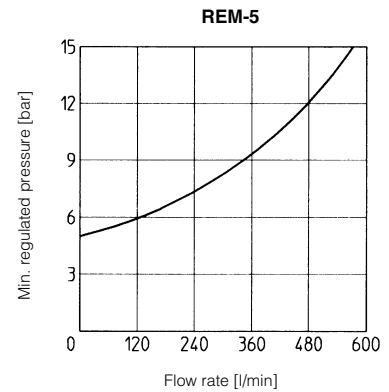
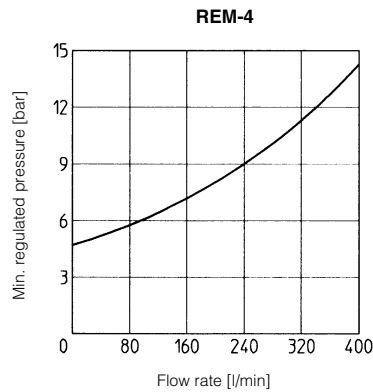
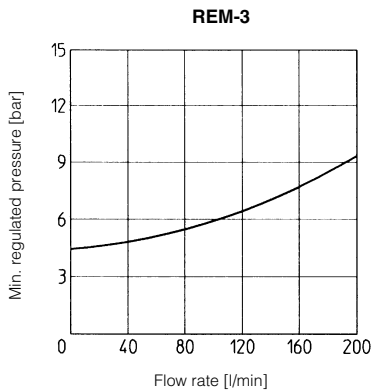
#### 3.1 Coils characteristics

Insulation class	H
Connector protection degree	IP 65
Relative duty factor	100%
Supply voltage and frequency	See electric feature 7
Supply voltage tolerance	± 10%

#### 4 REGULATED PRESSURE VERSUS FLOW DIAGRAMS based on fluid viscosity of 25 mm<sup>2</sup>/s at 40°



#### 5 MINIMUM PRESSURE VERSUS FLOW DIAGRAMS based on fluid viscosity of 25 mm<sup>2</sup>/s at 40° C



#### 6 ELECTRIC CONNECTORS ACCORDING TO DIN 43650 FOR REM 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

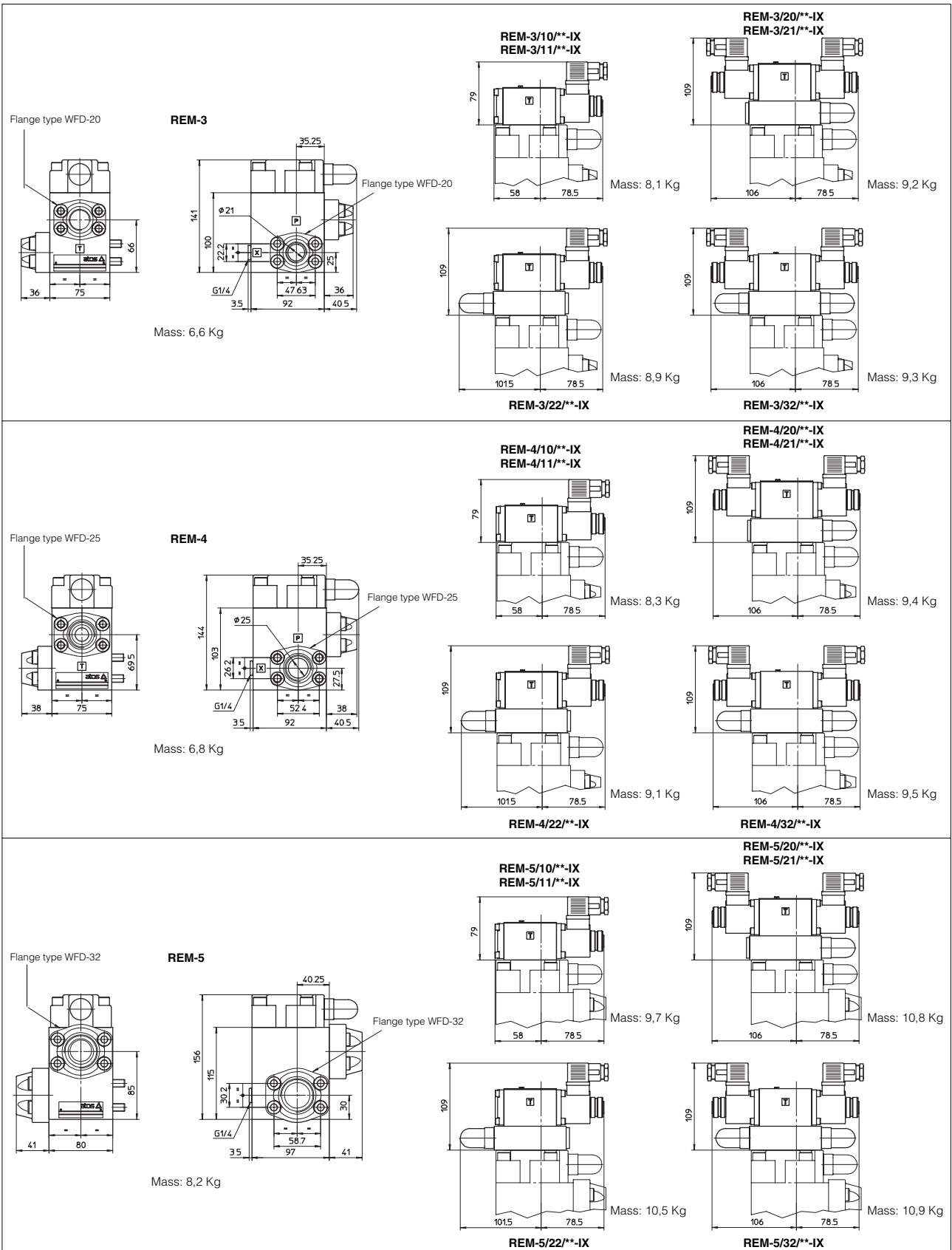
For other available connectors, see tab. E010 and K500.

#### 7 ELECTRIC FEATURES FOR REM WITH SOLENOID VALVE

Type of solenoid	External supply nominal voltage ± 10% (1)		Type of connector	Power consumption (3)	Code of spare coil	Colour of coil label
OI	DIRECT CURRENT	6 DC 12 DC 24 DC 48 DC	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
		ALTERNATE CURRENT	110/50 AC (2) 120/60 AC 230/50 AC (2) 230/60 AC	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

- (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.

**8 DIMENSIONS [mm]**



For dimensions of flanges, see tab. K120. Overall dimensions refer to valves with connectors type SP-666.

**9 ASSEMBLY EXAMPLE OF A REM VALVE ON A PFE PUMP**

