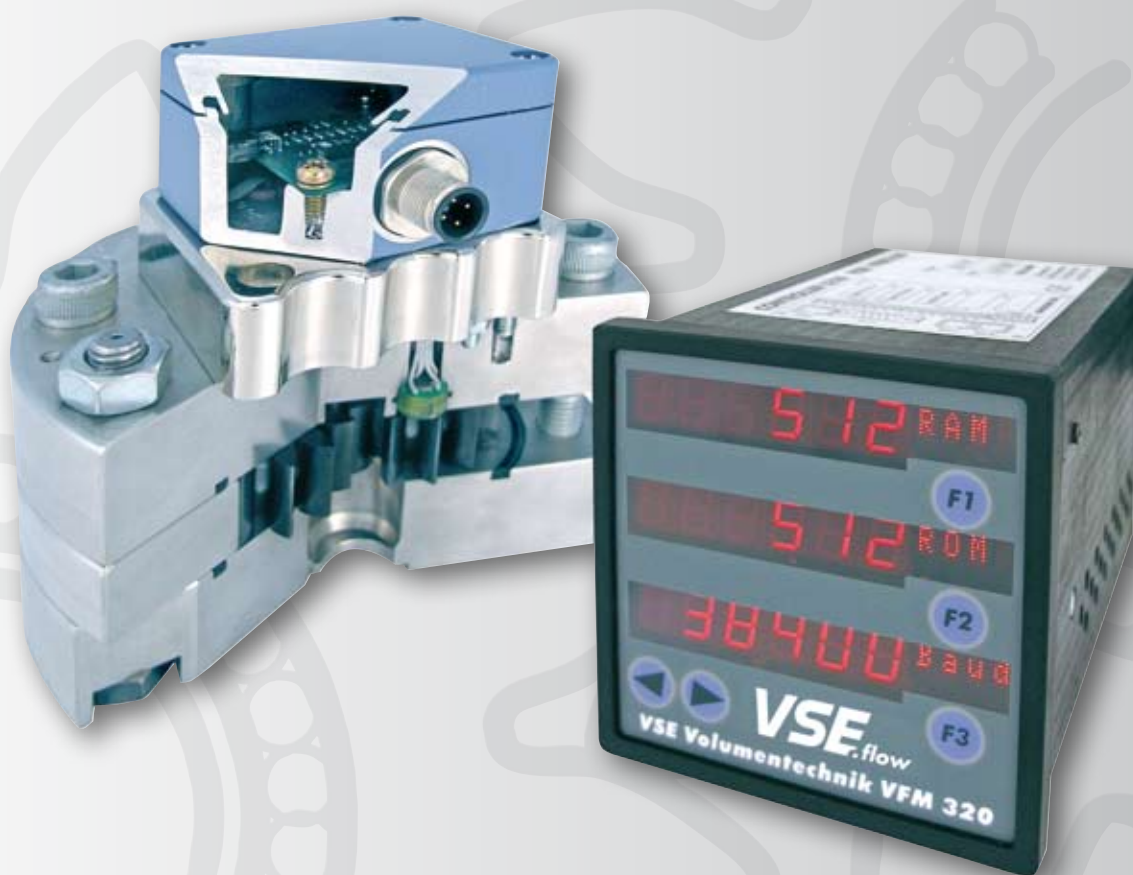


TECNICHE DI MISURA DELLE PORTATE



SERIE VS

► TECHNICAL DATA OVERVIEW

Size	Flow Range*		K-Factor	
	l / min	GPM	Imp./l	Imp./Gal.
VS 0.02	0.002 2	0.0005 0.53	50 000	189272
VS 0.04	0.004 4	0.0011 1.06	25 000	94636
VS 0.1	0.01 10	0.0026 2.64	10 000	37854.4
VS 0.2	0.02 18	0.0053 4.76	5 000	18927.2
VS 0.4	0.03 40	0.0079 10.57	2 500	9463.6
VS 1	0.05 80	0.0132 21.13	1 000	3785.44
VS 2	0.1 120	0.0264 31.70	500	1892.72
VS 4	1 250	0.2642 66.00	250	946.36
VS 10**	1.5 525	0.39 138.00	300	1135
	*at 21 cSt	*at 21 cSt		

CALCULATION FACTOR

- 1 litre = 0.26417 U.S. Gallon
- 1 U.S. Gallon = 3.78544 litre
- 1 bar = 14.503684 psi
- 1 psi = 0.068948 bar

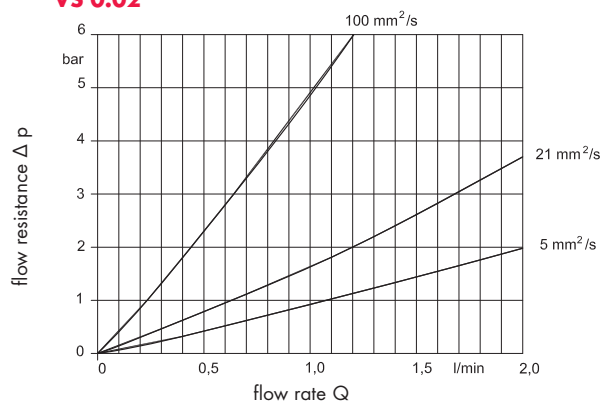
$$^{\circ}\text{C} = \frac{5 \times (^{\circ}\text{F} - 32)}{9} \quad \text{psi} = \text{pound-weight per square inch}$$

$$^{\circ}\text{F} = \frac{9}{5} \times ^{\circ}\text{C} + 32 \quad \text{GPM} = \text{U.S. Gallon per minute}$$

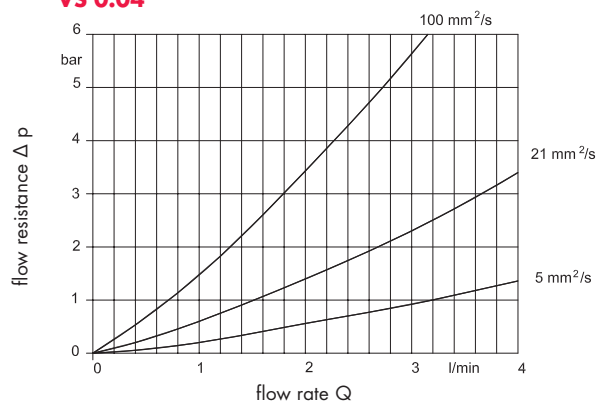
Accuracy	± 0.3 % of measured value at viscosity > 20 cSt (< 20 cSt reduced accuracy)		
Repeatability	± 0.05 % under same operating conditions		
Materials	Body	Bearings	Seals
	EN-GJS-400-15 (EN 1563) Stainless Steel 1.4305	Ball / Plain / Plain (Copper-free) depend on liquid.	FPM (Standard) NBR, PTFE, EPDM
Max. Operating Pressures	Cast Iron	Stainless Steel	
	315 bar/4568 psi	450 bar / 6526 psi	
Medium Temperature	Standard	-40 ≤ ... 120° C	
	Ex-design	-20 ≤ ... 100° C	
	High temperature	-40 ≤ ... 210° C	
Viscosity Ranges	1...100 000 cSt		
Mounting Positions	unrestricted, on subplate with side or bottom connections		
Filtering for ball bearing type	VS 0.02/0.04/0.1	10 µm	Exceptions flow meter with special clearance on request.
	VS 0.2/0.4	20 µm	
	VS 1/2	50 µm	
	VS 4	50 µm	
Noise Level	max. 72 dB(A)		
Preamplifier	10 to 28 Volt (DC)		

► FLOW RESPONSE CURVES

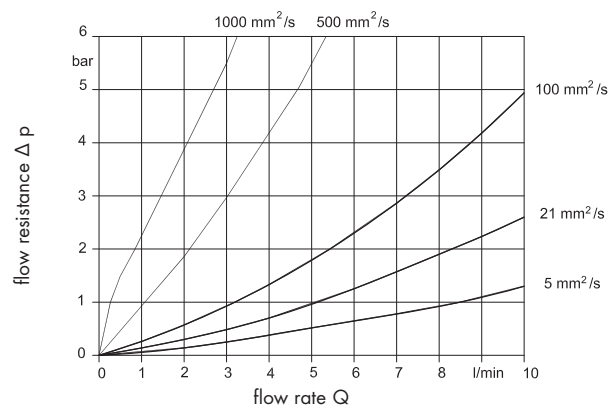
VS 0.02



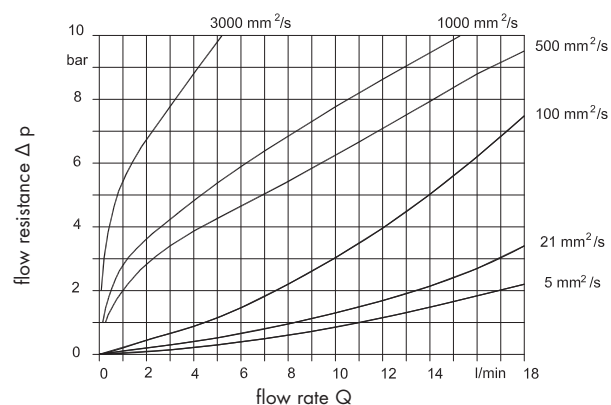
VS 0.04



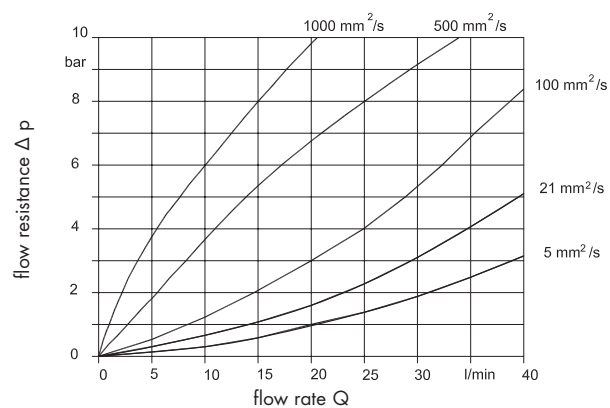
VS 0.1



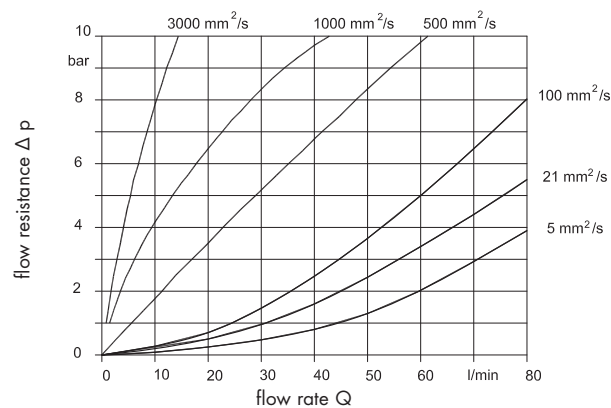
VS 0.2



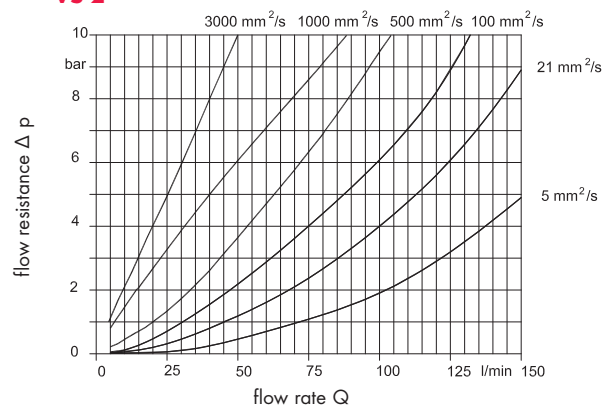
VS 0.4



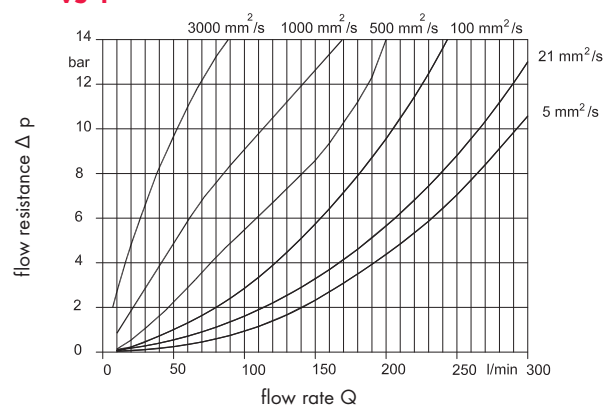
VS 1



VS 2



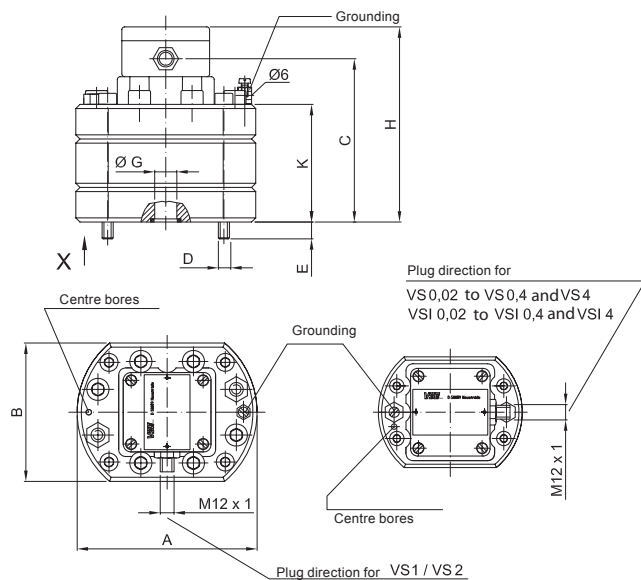
VS 4



► VS FLOW METER DIMENSIONS

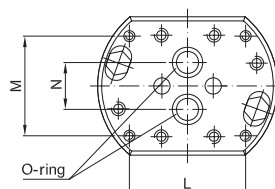
CAST IRON VERSION

- Housing curve mill cutted



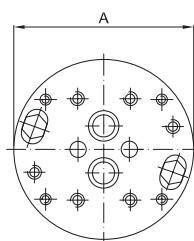
CAST IRON VERSION CONNECTION DRAWING

- View X



STAINLESS STEEL VERSION CONNECTION DRAWING

- Housing not mill cutted
- View X



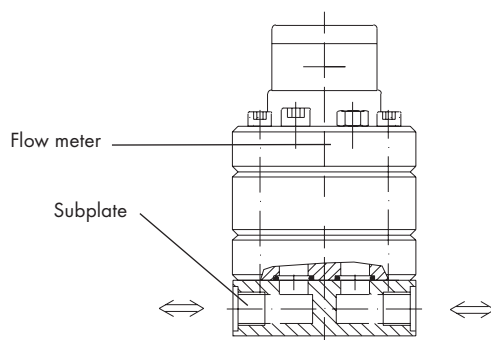
Size VS/VSI	A	B	C	D	E	Ø G	H	K	L	M	N	O-ring	Weight	
													GG*	E*
0.02	100	80	91	M 6	12	Ø 9	114	58	70	40	20	11 x 2	2.8	3.4
0.04	100	80	91.5	M 6	11.5	Ø 9	114.5	58.5	70	40	20	11 x 2	2.8	3.4
0.1	100	80	94	M 6	9	Ø 9	117	61	70	40	20	11 x 2	2.8	3.4
0.2	100	80	93.5	M 6	9.5	Ø 9	116.5	60.5	70	40	20	11 x 2	3.0	3.7
0.4	115	90	96.5	M 8	11.5	Ø 16	119.5	63.5	80	38	34	17.96 x 2.62	4.0	5.0
1	130	100	101	M 8	12	Ø 16	124	68	84	72	34	17.96 x 2.62	5.3	6.8
2	130	100	118	M 8	15	Ø 16	141	85	84	72	34	17.96 x 2.62	6.7	8.4
4	180	140	143	M 12	20	Ø 30	166	110	46	95	45	36.17 x 2.62	14.7	18.4

* GG = Cast Iron EN-GJS-400-15 (EN 1563)

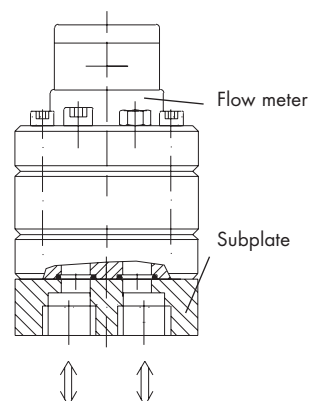
* E = Stainless Steel 1.4305

Dimensions are specified in mm

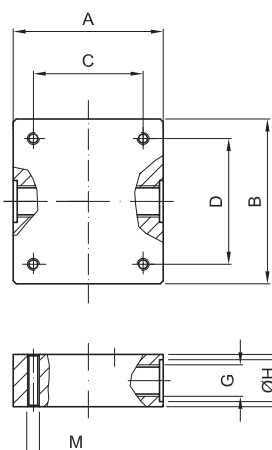
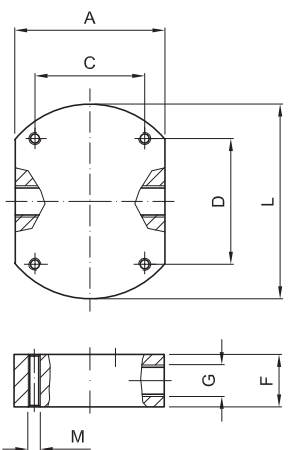
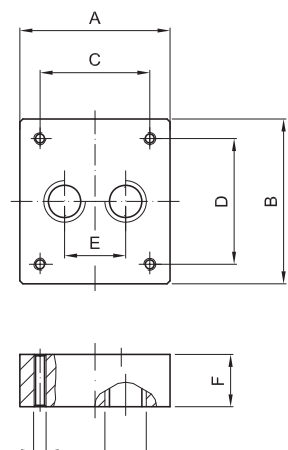
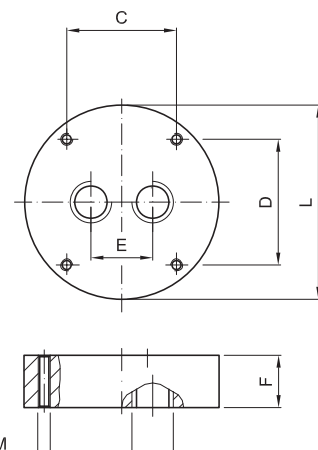
SIDE PORTS



BOTTOM PORTS



► AP SUBPLATE DIMENSIONS

SIDE PORTS		BOTTOM PORTS *	
Cast Iron / APG.S.../.	Stainless Steel / APE.S.../.	Cast Iron / APG.U.../.	Stainless Steel / APE.U.../.
			

* Both bottom ports (G) for size APG 4 U and APE 4 U have a displacement of 90° to the shown drawings.

AFFILIATED SIZE	VS / VSI	G PIPE THREAD CLASSIFICATION	G	F	Ø H	E ①
	0.02 / 0.04		G 1 / 4	35	Ø 20	26
	0.1 / 0.2					
	0.02 / 0.04		G 3 / 8	35	Ø 23	30
	0.1 / 0.2					
	0.02 / 0.04		G 1 / 2	35	Ø 28	38
	0.1 / 0.2					
	0.4 / 1 / 2		G 1 / 2	35	Ø 28	46
	0.4 / 1 / 2		G 3 / 4	40	Ø 33	52
	1 / 2		G 1"	55	Ø 41	55
4	4		G 1 1 / 4	70	Ø 51	60
	4		G 1 1 / 2	AP..U=70	Ø 56	72
	4		G 1 1 / 2	AP..S=80	Ø 56	72

Size							Depth	Weight
VS / VSI	AP	A	B	C	D	L ②	M	kg
0.02/0.04	AP.02	80	90	40	70	100	M6/12	1.8
0.1/0.2								
0.4	AP.04	90	100	38	80	115	M8/15	2.7
1/2	AP.1	100	110	72	84	130	M8/15	3.6
4	APG4	120	130	100	110	-	M8/15	7.4
	APG4 UG	140	120	120	100	-	M8/15	7.4
	APE.4	140	-	100	110	180	M8/15	12

① Only for APG.U .../ . ; APE.U .../ .

② Only for APE.S .../ . ; APE.U .../ .

Special designs on request

► VS 10 FLOW METER

TECHNICAL DATA

Size	Flow range l/min	GPM	K-Factor Imp./l	Imp./Gal.
VS 10	1.5 ... 525	0.3963 ... 138.69	300	1135.63

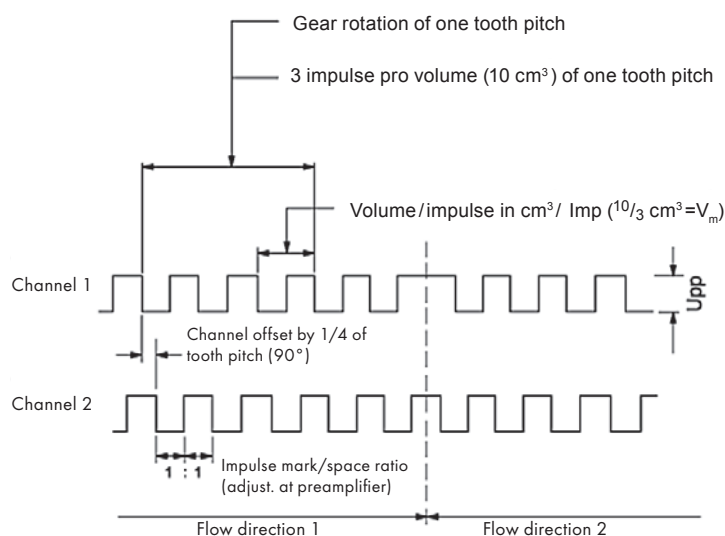
Accuracy	± 0.3 % of measured value at viscosity > 20 cSt (< 20 cSt reduced accuracy)		
Repeatability	± 0.05 % under same operating conditions		
Materials	Body	Bearings	Seals
	EN-GJS-600-3 EN 1563	Ball/Plain gearings depend on liquid.	FPM (Standard) NBR, PTFE, EPDM
Max. Operating Pressure	400 bar / 6000 psi		
Medium Temperature	Standard	-40 ≤ ... 120° C	
	Ex-design	-20 ≤ ... 100° C	
	High temperature	not available	
Viscosity Range	1 ... 100 000 mm²/s		
Mounting Positions	unrestricted, on subplate with side or bottom connections		
Filtering	50 µm		
Preamplifier	short circuit proof and reverse polarity proof 10 ... 28 V DC / 45 mA, additional current on signal output max. 20 mA		

OUTPUT SIGNALS OF PREAMPLIFIER

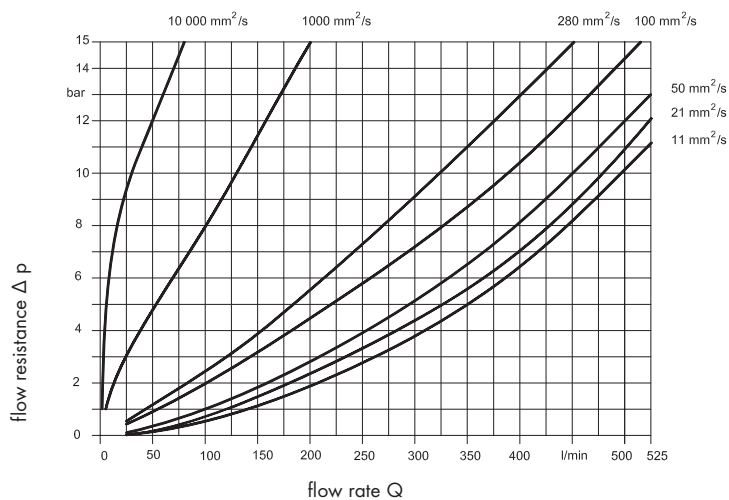
VOLTAGE RANGES

Supply voltages: $U_v = 10 \dots 28 \text{ V DC}$

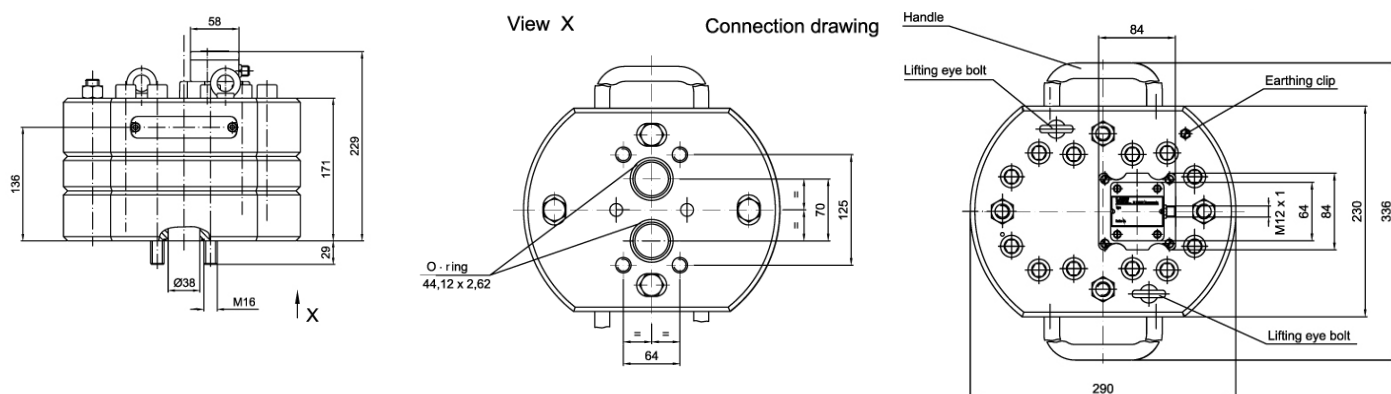
Impulse voltages: $U_{pp} = U_v - 1 \text{ V}$



FLOW RESPONSE CURVES



DIMENSIONS

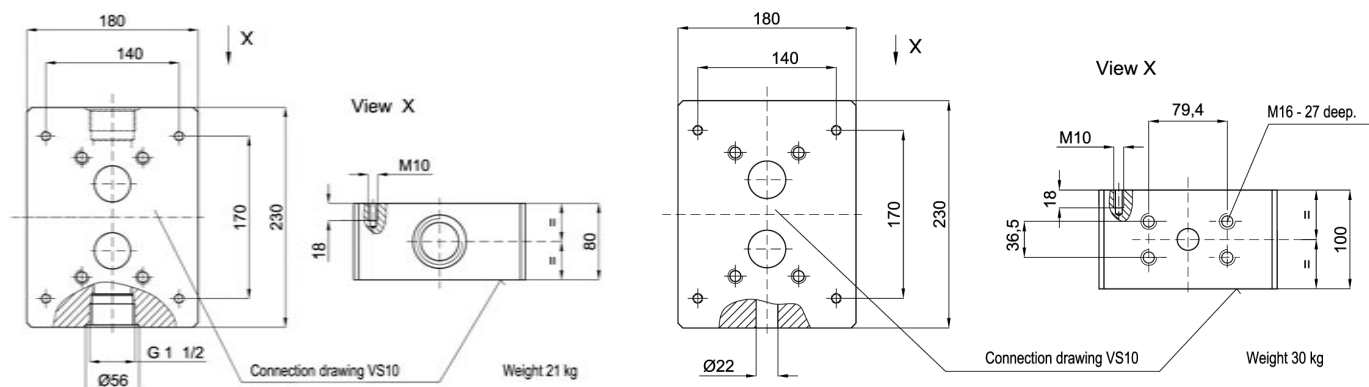


Dimensions are specified in mm

SUBPLATE DIMENSIONS

APG 10 S GON / 1

APG 10 S WON / 1



Dimensions are specified in mm