



VAF™ FILTRATION SYSTEMS HYDROCYCLONE SEPARATOR

GENERAL INFORMATION

Evoqua's VAF™ brand Hydrocyclone Separators are effective in removing suspended particles from any flow stream of water where the specific gravity (density) of the particle(s) is heavier than the fluid it is in. The more significant the difference in gravity between the water and the particle, the greater the efficiency of the removal process. Depending on the specific gravity of the particle and the viscosity of the flow stream, very small and denser particles can be removed. Particulate removal can be enhanced if multiple passes of the stream can be achieved.

Consider a separator's use where any source of water contains contaminants with a weight of 2.6 specific gravity or higher, such as well water to remove sand. Separators are also excellent for use as a pre-removal device for filters with river or ditch water that contain high levels of sand or other large organic debris.

Applications would include, but not be limited to, wells, industrial processes, water recycling and reuse, river and ditch water intake systems, food processing nozzle systems and irrigation water.

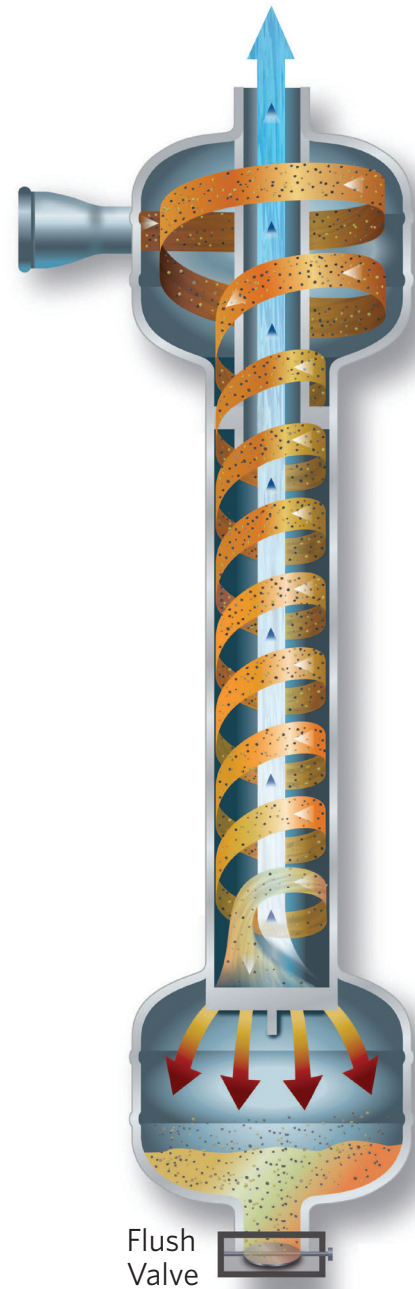
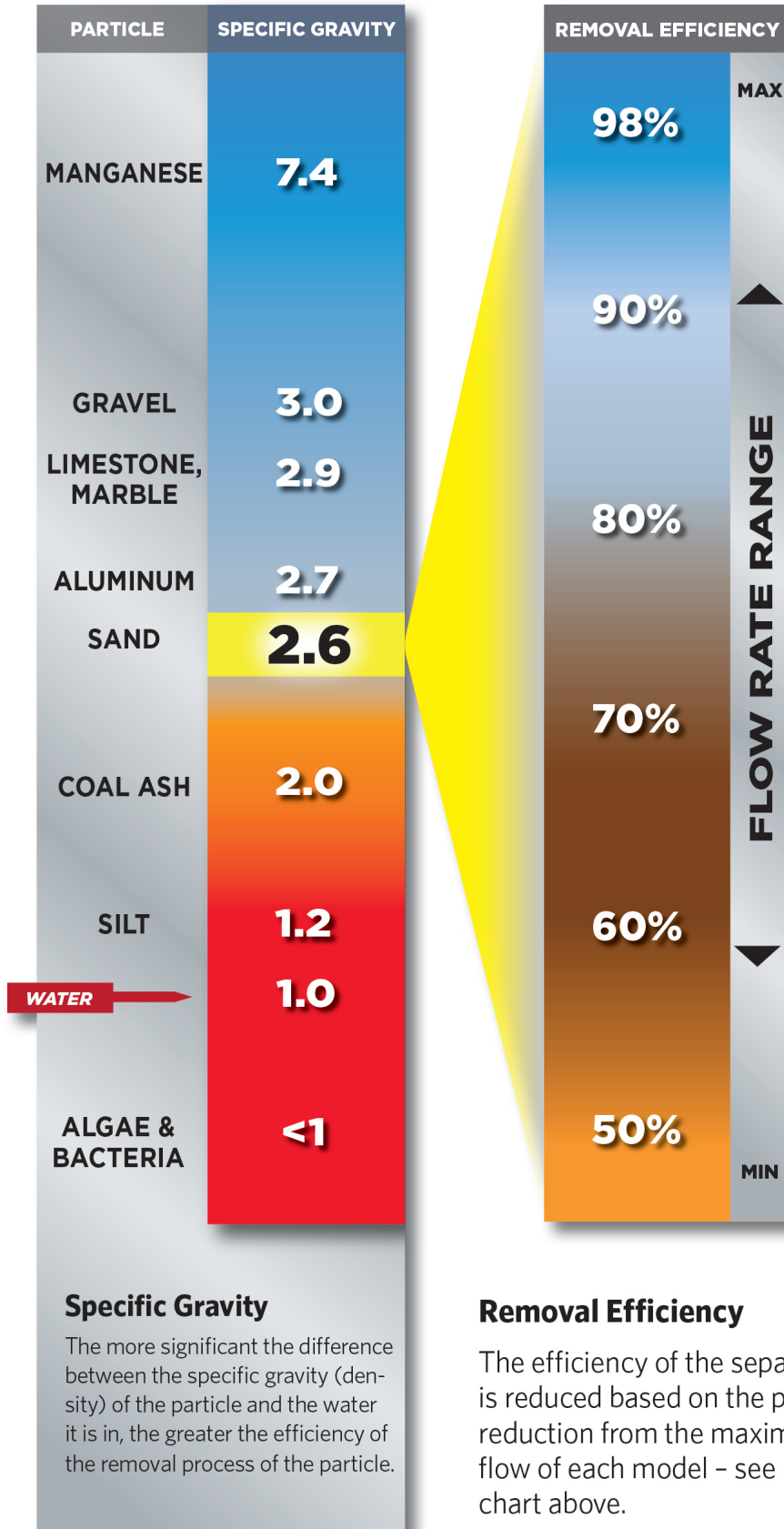
HOW IT WORKS

Liquids and solids enter the unit and begin travelling in a circular flow. This centrifugal action forces heavier particles downward in a spiral motion to the separation chamber. The particles collect in this separation chamber and are purged from the system on a time interval. The processed water is drawn from the separator's vortex and up through the outlet.

Features/Benefits

- No Moving Parts
- Removal of 98% Solids 2.6 Specific Gravity and Higher at Maximum Flow Rate (see back side)
- Heavy Duty, Corrosion Resistant Construction for a Long Service Life
- No Electricity Required
- Capacities of 1 to 1,771 m³/hr (4 to 7,800 gpm)
- Operating pressure 1.5 to 10 bar (25 psi to 150 psi)
- Simple Installation
- Excellent Pre-removal to Reduce Load on Downstream Filtration Components
- Low Cost
- Made in the USA
- Custom Skids Available

PARTICLE REMOVAL EFFICIENCIES



VERTICAL SEPARATOR SPECIFICATIONS

MODEL	FLOW		LINE SIZE		LENGTH		WEIGHT		FLUSH SIZE	
	M ³ /HR	GPM	CM	IN	CM	IN	KG	LBS	CM	IN
VHS-10	1 - 2	4 - 10	1.3	0.5	54.6	21.5	6	13	2.54	1
VHS-20	2 - 5	10 - 20	1.9	0.75	54.6	21.5	7	15		
VHS-40	4 - 9	18 - 38	2.5	1.0	77.5	30.5	12	26		
VHS-50	6 - 12	26 - 52	3.2	1.25	77.5	30.5	12	26		
VHS-80	9 - 18	38 - 79	3.8	1.5	77.5	30.5	12	26		
VHS-120	14 - 27	63 - 120	5.1	2.0	96.5	38	20	44	5.08	2
VHS-180	23 - 41	100 - 180	6.4	2.5	111.8	44	25	55		
VHS-260	28 - 59	125 - 260	7.6	3.0	121.91	48	34	75		
VHS-340	43 - 78	190 - 345	10.2	4.0	124.5	49	55	120		

ANGLED SEPARATOR SPECIFICATIONS

MODEL	FLOW		LINE SIZE		LENGTH		SHIPPING LENGTH		WEIGHT		FLUSH SIZE	
	M ³ /HR	GPM	CM	IN	CM	IN	CM	IN	KG	LBS	CM	IN
VHS-400A	45 - 91	200 - 400	10.2	4.0	203.2	80	221	87	127	280	5.08	2
VHS-700A-LF	83 - 159	365 - 700	15.2	6.0	269.9	106.3	293.4	115.5	224	493		
VHS-950A-LF	114 - 216	500 - 950	15.2	6.0	269.9	106.3	293.4	115.5	224	493		
VHS-1600A	182 - 363	800 - 1600	20.3	8.0	289.6	114	316.9	124.8	328	722		
VHS-2300A	295 - 522	1300 - 2300	25.4	10.0	313.7	123.5	342.9	135	382	840		
VHS-3400A	460 - 772	2025 - 3400	30.5	12.0	353.1	139	396.2	156	636	1400		
VHS-5000A	676 - 1136	2975 - 5000	35.6	14.0	387.4	152.5	424.2	167	907	2000		
VHS-6200A	909 - 1408	4000 - 6200	40.6	16.0	406.4	160	462.3	182	1048	2310		
VHS-7800A	1136 - 1772	5000 - 7800	45.7	18.0	449.6	177	487.7	192	1248	2750		

NOTES:

Standard construction material is carbon steel. Other options are available including stainless steel and seawater compatible models.

VHS = VAF™ Hydrocyclone Separator

Unless otherwise noted, ALL models are installed vertically with legs.

A = Mounted 22.5° angle, Supplied with Support Legs

LF = Low Flow

HF = High Flow

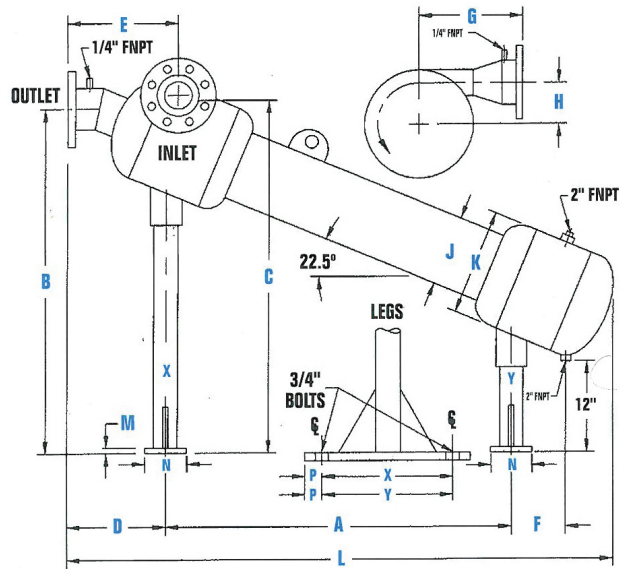
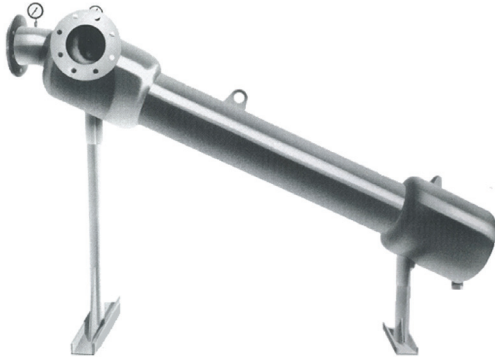
AUTOMATIC-PURGE TIMER CONTROLLER AND MOTORIZED BALL VALVE

Models Available

Model	Description
PVB-1LT-120	1" Auto-Purge Timer
PVB-2LT-120	2" Auto-Purge Timer

Auto-Purge Timer includes 120 VAC controller with LCD display with push button controls and brass ball valve. Other options, voltages and materials available.

ANGLED SEPARATOR DIMENSIONS (CM)

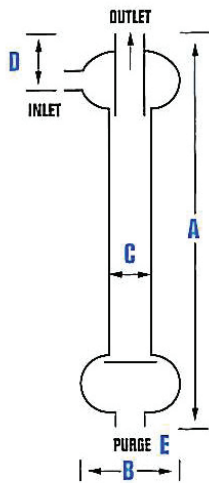


INLET/ OUTLET	4"	LF6"	HF6"	8"	10"	12"	14"	16"	18"
	CM								
A	123.2	160.0	160.0	180.3	198.1	259.1	260.4	274.3	301.0
B	118.1	151.1	151.1	165.1	180.3	191.3	216.9	226.8	249.7
C	118.1	153.4	149.4	167.6	184.9	194.3	220.0	228.6	254.8
D	40.6	52.1	52.1	55.4	53.3	60.5	62.2	62.0	68.6
E	48.3	52.8	52.8	57.4	62.2	67.6	70.6	73.7	85.3
F	19.1	26.7	26.7	30.5	33.0	36.3	30.5	30.5	38.1
G	48.3	55.9	55.9	62.2	73.7	81.3	85.1	85.1	87.6
H	10.2	14.7	13.5	14.2	17.8	20.6	22.9	22.9	27.9
J	16.8	27.4	27.4	32.5	40.6	45.7	50.8	61.0	71.1
K	30.5	40.6	40.6	45.7	55.9	66.0	71.1	76.2	91.4
L	203.2	269.9	269.9	289.6	313.7	353.1	387.4	406.4	449.6
M	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
N	12.7	12.7	12.7	12.7	12.7	12.7	15.2	15.2	15.2
P	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
X	55.9	76.2	76.2	86.4	106.7	127.0	127.0	137.2	146.7
Y	35.6	35.6	35.6	40.6	50.8	61.0	66.0	71.1	75.6

ANGLED SEPARATOR DIMENSIONS CONTINUED (IN)

INLET/ OUTLET	4"	LF6"	HF6"	8"	10"	12"	14"	16"	18"
	IN								
A	48.5	63.0	63.0	71.0	78.0	102.0	102.5	108.0	118.5
B	46.5	59.5	59.5	65.0	71.0	75.3	85.4	89.3	98.3
C	46.5	60.4	58.8	66.0	72.8	76.5	86.6	90.0	100.3
D	16.0	20.5	20.5	21.8	21.0	23.8	24.5	24.4	27.0
E	19.0	20.8	20.8	22.6	24.5	26.6	27.8	29.0	33.6
F	7.5	10.5	10.5	12.0	13.0	14.3	12.0	12.0	15.0
G	19.0	22.0	22.0	24.5	29.0	32.0	33.5	33.5	34.5
H	4.0	5.8	5.3	5.6	7.0	8.1	9.0	9.0	11.0
J	6.6	10.8	10.8	12.8	16.0	18.0	20.0	24.0	28.0
K	12.0	16.0	16.0	18.0	22.0	26.0	28.0	30.0	36.0
L	80.0	106.3	106.3	114.0	123.5	139.0	152.5	160.0	177.0
M	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
N	5.0	5.0	5.0	5.0	5.0	5.0	6.0	6.0	6.0
P	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
X	22.0	30.0	30.0	34.0	42.0	50.0	50.0	54.0	57.8
Y	14.0	14.0	14.0	16.0	20.0	26.0	26.0	28.0	29.8

VERTICAL SEPARATOR DIMENSIONS

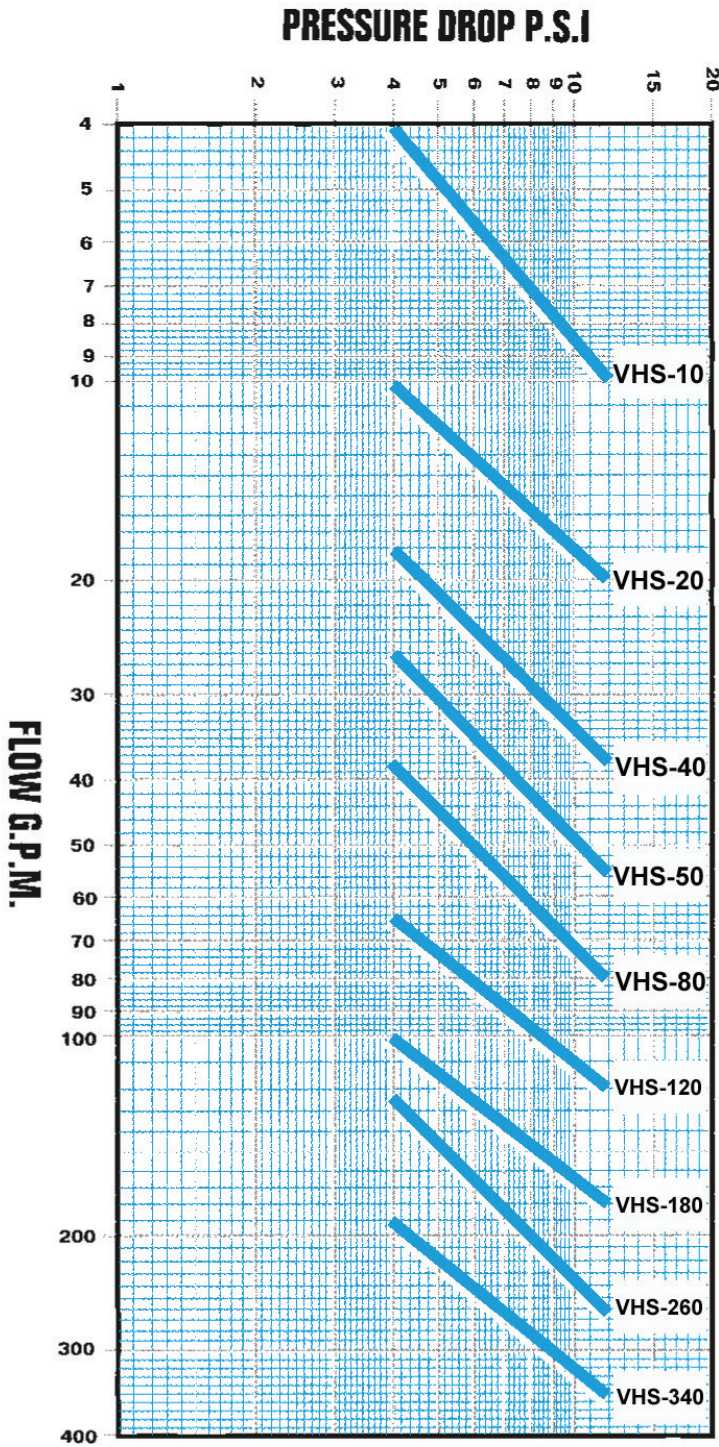


INLET/ OUTLET	1/2"	3/4"	1"	1-1/4"	1-1/2"	2"	2-1/2"	3"	4"
	CM								
A	54.6	54.6	77.5	77.5	77.5	96.5	111.8	122	124.5
B	15.2	15.2	15.2	15.2	15.2	20.3	25.4	25.4	30.5
C	6.1	6.1	8.6	8.6	8.6	11.4	11.4	14	16.8
D	6.4	6.4	6.4	7.1	7.1	8.4	11.4	12.5	16.5
E	2.5	2.5	2.5	2.5	2.5	5.1	5.1	5.1	5.1

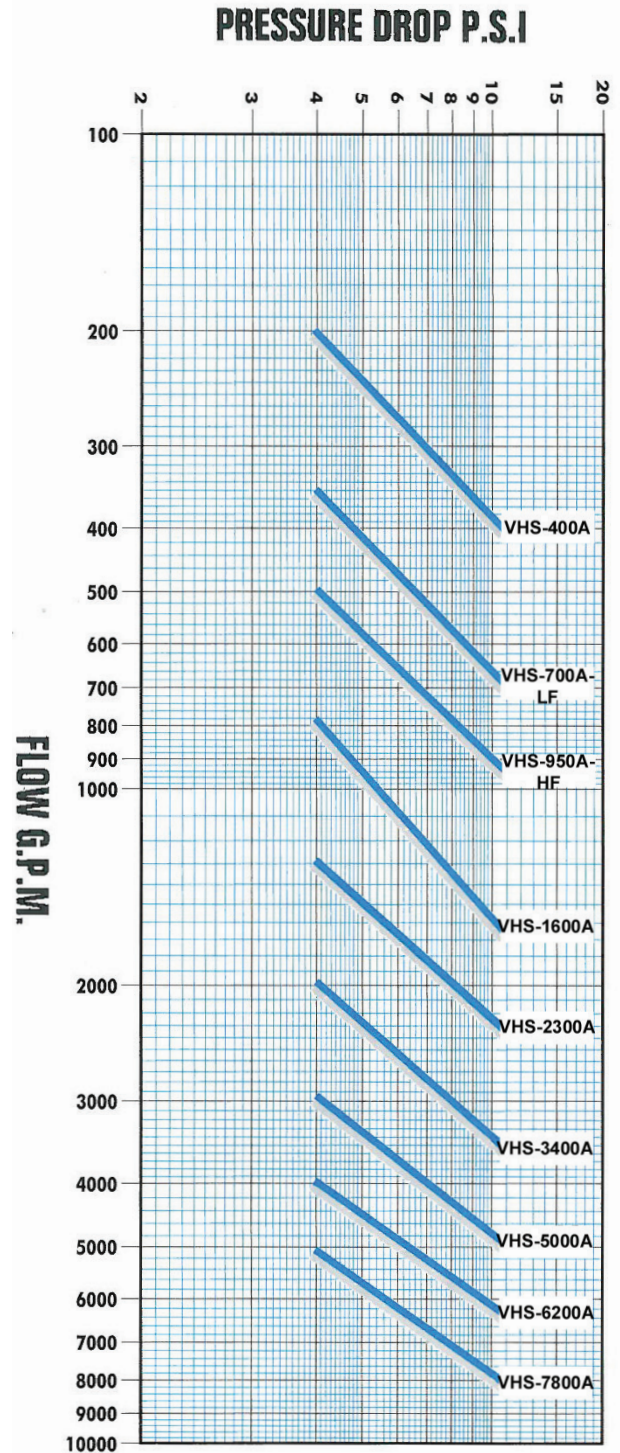
INLET/ OUTLET	1/2"	3/4"	1"	1-1/4"	1-1/2"	2"	2-1/2"	3"	4"
	IN								
A	21.5	21.5	30.5	30.5	30.5	38	44	48	49
B	6	6	6	6	6	8	10	10	12
C	2.4	2.4	3.4	3.4	3.4	4.5	4.5	5.5	6.6
D	2.5	2.5	2.5	2.8	2.8	3.3	4.5	4.9	6.5
E	1	1	1	1	1	2	2	2	2

FLOW AND PRESSURE LOSS CHARTS

Smaller Separators



Larger Separators



AUTO-PURGE CONTROL SPECIFICATIONS

An automatic purge controller and valve can be used on all applications. This eliminates the need for manual flushing, turning the separator into an automatic system.

SPECIFICATIONS

- 115 VAC 50/60 hz
- 3 m (10 ft) power cord with plug
- Two-piece brass ball valve
- 1" or 2" NPT connection
- Thermosplastic top cover
- Epoxy powder coated metal base
- NEMA 1 enclosure
- Ambient Temperature Range:
 - 12° C (10° F) to 49° C (120° F)
- Maximum Working Pressure:
 - Brass: 41 bar (600 psi)
 - Stainless Steel (optional): 62 bar (900 psi)

MODEL PVB-LT

- LCD cycle status display
- Demand draining capability
- External test button
- External keypad timing adjustment
- Cycle Time: 1 min to 99 hrs 59 min
- Open Time: 1 sec to 99 min 59 sec

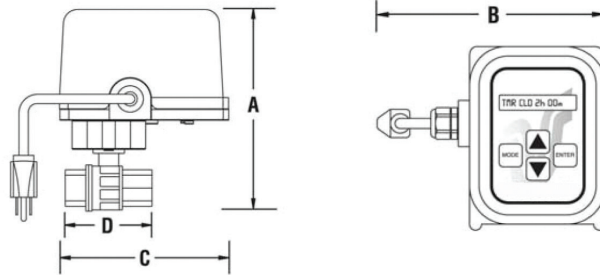


OPTIONS AND ACCESSORIES

- 12 VDC, 24 VDC, 230 VAC
- Stainless steel ball valve
- Alarm contact for remote indication of fault mode

Actuator with standardized ISO mounting pad sold separately.

AUTO-PURGE CONTROL DIMENSIONS AND WEIGHTS



DIMENSION AND WEIGHTS (WITH STANDARD BRASS BALL VALVE)

VALVE CONNECTION SIZE		A	B	C	D	WEIGHT	
						KG	LB
1" NPT	CM	21.1	17.3	16.0	10.9	5.0	11.0
	IN	8.3	6.8	6.3	4.3		
2" NPT	CM	22.6	17.3	16.8	12.2	6.0	13.0
	IN	8.9	6.8	6.6	4.8		



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