Tank-Mounted Filter ART

Features and Benefits

- Compact, lightweight, low pressure tank mounted filter ideal for mobile applications
- Lightweight plastic bowl
- ART aluminum alloy is designed to be water tolerant - anodization is not required for use with water based fluids (HWCF).
- Special filter element design provides aftermarket benefits.
- Various Dirt Alarm® options

225 *gpm*
850 L/min
145 psi
10 bar

Model No. of filter in photograph is ART85Z10F43.

Filter Housing Specifications

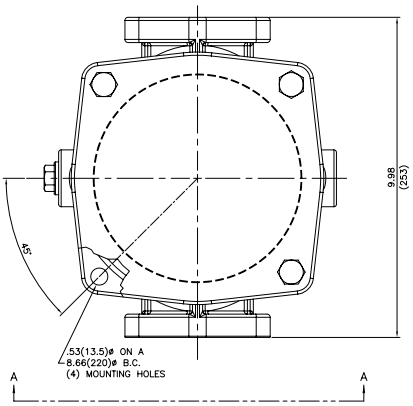
Flow Rating:	Up to 225 gpm (850 L/min) for 150 SUS (32 cSt) fluids
Max. Operating Pressure:	145 psi (10 bar)
Min. Yield Pressure:	535 psi (37 bar), per NFPA T2.6.1
Rated Fatigue Pressure:	145 psi (10 bar), per NFPA T2.6.1
Temp. Range:	-20°F to 225°F (-29°C to 107°C)
Bypass Setting:	Cracking: 43 psi (3 bar) Full Flow: 69 psi (4.75 bar)
Porting Head & Cap: Element Case:	Aluminum Plastic
Weight of ART:	15 lbs. (7 kg)
Element Change Clearance:	16.39" (340 mm)

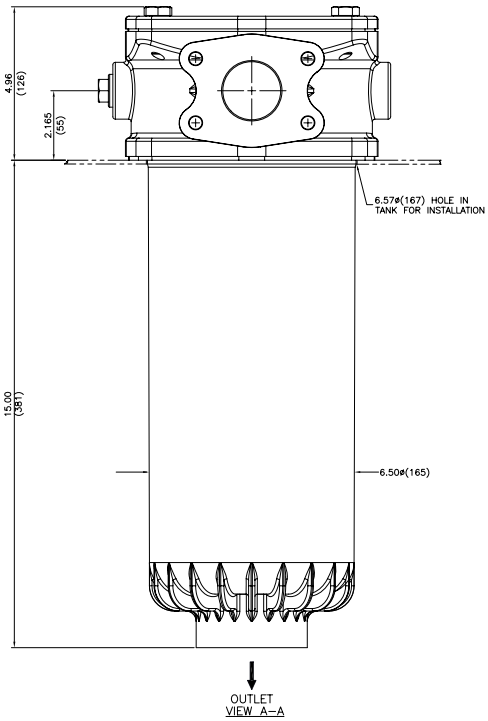
Fluid Compatibility

Type Fluid	Appropriate Schroeder Media
Petroleum Based Fluids	All Z-Media® (synthetic)
High Water Content	All Z-Media® (synthetic)

IRF
TF1
KF3
KL3
LF1
MLF1
RLD
GRTB
MTA
MTB
ZT
KFT
RT
RTI
LRT
ART
BFT
QT
KTK
LTK
MRT
Accessories For Tank-Mounted Filters
PAF1
MAF1
MF2

ART Tank-Mounted Filter





Metric dimensions in ( ).

Element Performance Information & Dirt Holding Capacity

Element	Filtration Ratio per ISO 16889 Using APC calibrated per ISO 11171 $\beta_{x(c)} \geq 200$	$\beta_{x(c)} \geq 1000$
85Z1	<4.0	4.2
85Z3	<4.0	4.8
85Z5	4.8	6.3
85Z10	8.0	10.0
85Z25	19.0	24.0

Element	DHC (gm)
85Z1	185
85Z3	147
85Z5	206
85Z10	164
85Z25	167

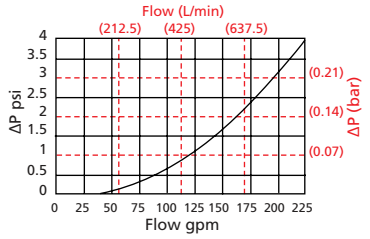
Element Collapse Rating: 150 psid (10 bar)

Flow Direction: Outside In

Element Nominal Dimensions: 4.5" (114.3 mm) O.D. x 13.8" (350.52 mm) long

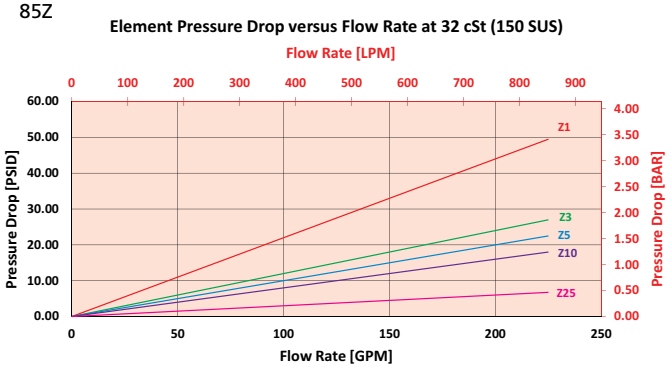
$\Delta P_{housing}$

ART $\Delta P_{housing}$ for fluids with sp gr (specific gravity) = 0.86:



$\Delta P_{element}$

85Z



$$\Delta P_{filter} = \Delta P_{housing} + (\Delta P_{element} * V_f)$$

Exercise:

Determine ΔP_{filter} at 120 gpm (379 L/min) for ART85Z10F43Y2 using 160 SUS (34 cSt) fluid.

Use the housing pressure curve to determine $\Delta P_{housing}$ at 120 gpm. In this case, $\Delta P_{housing}$ is 1 psi (.07 bar) on the graph for the ART housing.

Use the element pressure curve to determine $\Delta P_{element}$ at 120 gpm. In this case, $\Delta P_{element}$ is 10 psi (.69 bar) according to the graph for the 85Z10 element.

Because the viscosity in this sample is 160 SUS (34 cSt), we determine the **Viscosity Factor (V_f)** by dividing the **Operating Fluid Viscosity** with the **Standard Viscosity** of 150 SUS (32 cSt). To best determine your Operating Fluid Viscosity, please reference the chart in Appendix D.

Finally, the overall filter pressure differential, ΔP_{filter} , is calculated by adding $\Delta P_{housing}$ with the true element pressure differential, ($\Delta P_{element} * V_f$). The $\Delta P_{element}$ from the graph has to be multiplied by the viscosity factor to get the true pressure differential across the element.

Solution:

$\Delta P_{housing}$ = 1 psi [.07 bar] | $\Delta P_{element}$ = 10 psi [.69 bar]

V_f = 160 SUS (34 cSt) / 150 SUS (32 cSt) = 1.1

ΔP_{filter} = 1 psi + (10 psi * 1.1) = 12 psi

OR

ΔP_{filter} = .07 bar + (.69 bar * 1.1) = .83 bar

ART Tank-Mounted Filter

Filter Model Number Selection

How to Build a Valid Model Number for a Schroeder ART:

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5	BOX 6	BOX 7
ART						

Example: *NOTE: One option per box*

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5	BOX 6	BOX 7	
ART	85Z10		F	43		Y2	**= ART85Z10F43Y2**

BOX 1

Filter Series
ART

BOX 2

Element Size and Media
85Z1 = 1 µ Excellement® Z-Media® (synthetic)
85Z3 = 3 µ Excellement® Z-Media® (synthetic)
85Z5 = 5 µ Excellement® Z-Media® (synthetic)
85Z10 = 10 µ Excellement® Z-Media® (synthetic)
85Z25 = 25 µ Excellement® Z-Media® (synthetic)

BOX 3

Seal Material
Omit = Buna N
H = EPR

BOX 4

Porting
F = 2½" SAE-40 4-bolt flange Code 61
FF = Dual 2½" SAE-40 4-bolt flange Code 61
S = SAE-32
SS = Dual SAE-32

BOX 5

Bypass Setting
43 = 43 psi Bypass

BOX 6

Outlet Options
Omit = 2" ISO 228 G thread

BOX 7

Dirt Alarm® Options		
	Omit =	None
Visual	Y2 =	Back-mounted tri-color gauge
	Y2R =	Back-mounted gauge mounted on opposite side of standard location
Electrical	ES =	Electric switch (normally open)
	ESR =	Electric switch mounted on opposite side of standard location
	ES1 =	Heavy-duty electric switch with conduit connector
	ES1R =	Heavy-duty electric switch with conduit connector mounted on opposite side of standard location
	ES2 =	Super duty electric switch with Thermal Lockout and 2 pin Deutsche connector (DT04-2P, SPST, normally closed)

NOTES:

Box 2. Replacement element part numbers are identical to contents of Boxes 2 and 3.

Box 3. For option H, all aluminum parts are anodized.