

Clogging Indicators

Absolute and differential pressure indicators



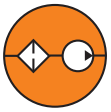
Technical Information

Fluid compatibility(acc. to ISO 2943):

Full with HH-HL-HM-HV-HFAE-HFAS (ISO 6743/4).

For use with other fluid application please contact Filtrtec Customer Service (info@filtrtec.it)

CODE	ALARM		SET VALUE SCALE	CONNECTION	APPLICATION			
	VISUAL	ELECTRICAL			SUCTION	PRESSURE	RETURN	
R2		X	1,3 bar N.O.	1/8"			X	ABSOLUTE
R3		X	1,3 bar N.C.	1/8"			X	
R6	X		1,3 bar	1/8"			X	
R7	X		-1 a 5 bar	1/8"	X		X	
R9	X		4 bar	1/8"			X	
R10	X		4 bar	1/8"			X	
R12	X		16 bar	1/8"		X		
S1	X		0 ÷ -1 bar	1/8"	X			
S2		X	-0,2 bar N.O	1/8"	X			
S3		X	-0,2 bar N.C.	1/8"	X			
S4	X		-0,2 bar	1/8"	X			
Z12	X		5 bar	M20 x 1,5		X		DIFFERENTIAL
Z13	X	X	5 bar	M20 x 1,5		X		
Z17	X		8 bar	M20 x 1,5		X		
Z18	X	X	8 bar	M20 x 1,5		X		
Z30	X		5 bar	M20 x 1,5		X		
Z31	X	X	5 bar	M20 x 1,5		X		
Z32	X		8 bar	M20 x 1,5		X		
Z33	X	X	8 bar	M20 x 1,5		X		
Z34	X		2,7 bar	M18 x 1,5		X		
Z35		X	2,7 bar	M18 x 1,5		X		
Z37	X		2,7 bar	M20 x 1,5		X		
Z38	X	X	2,7 bar	M20 x 1,5		X		



The Pressure Drop (Δp) through the filter increases during the system operation due to the contaminant retained by the filter element.

The filter element must be replaced when the indicator shows and before the Δp reaches the by-pass value setting.

N.B. in cold start conditions a false alarm can be caused by higher oil viscosity due to low temperature; the indicator alarm must be considered at normal working temperature only.

The clogging indicator registers the pressure downstream the filter element:

- in the VISUAL indicator the red area shows the need for element replacement.
- in the ELECTRIC indicator an electrical switch is activated.

CODE	DIMENSIONS	SYMBOL	TECHNICAL INFO
S1			<p>VACUUM GAUGE 0 ÷ -1 bar (0 ÷ -14,5 psi)</p>

CODE	DIMENSIONS	SYMBOL	TECHNICAL INFO
S2			<p>ELECTRIC VACUUM SWITCH -0,2 bar (-2,9 psi)</p> <ul style="list-style-type: none"> • Current: 0,5 A resistive/ 0,2 A inductive • Max voltage: 30-48 V DC • Protection: IP54 as per DIN 40050
S3			

CODE	DIMENSIONS	SYMBOL	TECHNICAL INFO
S4			<p>VISUAL VACUUM SWITCH -0,2 bar (-2,9 psi)</p>



ABSOLUTE INDICATORS for application on return line

NORMALLY USED ON FA-1 (return line) / FA-2 / FR-1 / FR-8 / FCR-7 / FVR-7 series

The Pressure Drop (Δp) through the filter increases during the system operation due to the contaminant retained by the filter element.

The filter element must be replaced when the indicator shows and before the Δp reaches the by-pass value setting.

N.B. in cold start conditions a false alarm can be caused by higher oil viscosity due to low temperature; the indicator alarm must be considered at normal working temperature only.

The clogging indicator registers the pressure upstream the filter element:

- in the VISUAL indicator the red area shows the need for element replacement.
- in the ELECTRIC indicator an electrical switch is activated.

CODE	DIMENSIONS	SYMBOL	TECHNICAL INFO
R2			<p>PRESSURE SWITCH 1,3 bar (18,9 psi)</p> <ul style="list-style-type: none"> • Current: 0,5 A resistive/ 0,2 A inductive • Max voltage: 30-48 V DC • Protection: IP54 as per DIN 40050
R3			

CODE	DIMENSIONS	SYMBOL	TECHNICAL INFO
R6			<p>VISUAL PRESSURE GAUGE 1,3 bar (18,9 psi)</p>

CODE	DIMENSIONS	SYMBOL	TECHNICAL INFO
R9	<p>REAR connection</p>		<p>PRESSURE GAUGE</p> <ul style="list-style-type: none"> ■ 0 ÷ 1 bar (0 ÷ 14,5 psi) ■ 1 ÷ 1,5 bar (14,5 ÷ 22 psi) ■ 1,5 ÷ 4 bar (22 ÷ 58 psi)
R10	<p>RADIAL connection</p>		



ABSOLUTE INDICATORS MULTIPURPOSE for application on suction and return line



It can be used on FS-7 / FA-1(suction line) or FA-1(return line) / FA-2 / FR-1/ FR-8 / FCR-7 / FVR-7 series

The Pressure Drop (Δp) through the filter increases during the system operation due to the contaminant retained by the filter element.

The filter element must be replaced when the indicator shows and before the Δp reaches the by-pass value setting.

N.B. in cold start conditions a false alarm can be caused by higher oil viscosity due to low temperature; the indicator alarm must be considered at normal working temperature only.

CODE	DIMENSIONS	SYMBOL	TECHNICAL INFO
R7			<p>PRESSURE / VACUUM GAUGE</p> <ul style="list-style-type: none"> ■ -1 ÷ -0,2 bar (-14,5 ÷ -2,9 psi) ■ -0,2 ÷ 1,4 bar (-2,9 ÷ 20 psi) ■ 1,4 ÷ 5 bar (20 ÷ 72,5 psi)



ABSOLUTE INDICATORS for application on low pressure line

NORMALLY USED ON FA-1 (low pressure line) series

CODE	DIMENSIONS	SYMBOL	TECHNICAL INFO
R12			<p>PRESSURE GAUGE</p> <p>0 ÷ 16 bar (0 ÷ 232psi)</p>



DIFFERENTIAL CLOGGING INDICATORS

Z30 / Z31 NORMALLY USED ON F040-DMD / F100-XD / F160-XD / F280-D1 / F420-D1 series

Z32 / Z33 NORMALLY USED ON F100-XD / F160-XD / F280-D1 / F420-D1 series

Z37 / Z38 NORMALLY USED ON F040-DMD series

The differential clogging indicator registers the pressure upstream and downstream the filter element and activates a signal when the differential pressure reaches the set value:

- in the VISUAL indicator the signal is given by a green sector switching into red.
- in the ELECTRIC VISUAL indicator, further to the green to red visual indication, an electrical switch is activated.

CODE	DIMENSIONS	SYMBOL	TECHNICAL INFO
Z37			DIFFERENTIAL VISUAL 2,7 bar (40 psi)
Z30			DIFFERENTIAL VISUAL 5 bar (72,5 psi)
Z32			DIFFERENTIAL VISUAL 8 bar (120 psi)

Visual indicator:

- GREEN: clean element
- RED : dirty element

CODE	DIMENSIONS	SYMBOL	TECHNICAL INFO
Z38			DIFFERENTIAL ELECTRIC VISUAL 2,7 bar (40 psi)
Z31			DIFFERENTIAL ELECTRIC VISUAL 5 bar (72,5 psi)
Z33			DIFFERENTIAL ELECTRIC VISUAL 8 bar (120 psi)

Visual indicator:

- GREEN: clean element
- RED : dirty element

- Electric plug connection as per DIN 43650
- Protection: IP65 acc. to DIN 40050
- Max current: 5A resistive 1A inductive
- Max voltage: 250V AC - 30V DC



DIFFERENTIAL CLOGGING INDICATORS

Z12 / Z13 NORMALLY USED ON FD-3 / FDM-D1 series

Z17 / Z18 NORMALLY USED ON FDM-D1 series

The differential clogging indicator registers the pressure upstream and downstream the filter element and activates a signal when the differential pressure reaches the set value:

- in the VISUAL indicator the signal is given by a green sector switching into red.
- in the ELECTRIC VISUAL indicator, further to the green to red visual indication, an electrical switch is activated.

CODE	DIMENSIONS	SYMBOL	TECHNICAL INFO
Z12			DIFFERENTIAL VISUAL 5 bar (72,5 psi)
Z17			DIFFERENTIAL VISUAL 8 bar (120 psi)

Visual indicator:

- GREEN: clean element
- RED : dirty element

CODE	DIMENSIONS	SYMBOL	TECHNICAL INFO
Z13			DIFFERENTIAL ELECTRIC VISUAL 5 bar (72,5 psi)
Z18			DIFFERENTIAL ELECTRIC VISUAL 8 bar (120 psi)

Visual indicator:

- GREEN: clean element
- RED : dirty element

- Electric plug connection as per DIN 43650
- Protection: IP65 acc. to DIN 40050
- Max current: 5A resistive 1A inductive
- Max voltage: 250V AC - 30V DC



DIFFERENTIAL CLOGGING INDICATORS

Z34 / Z35 NORMALLY USED ON FA-4 series

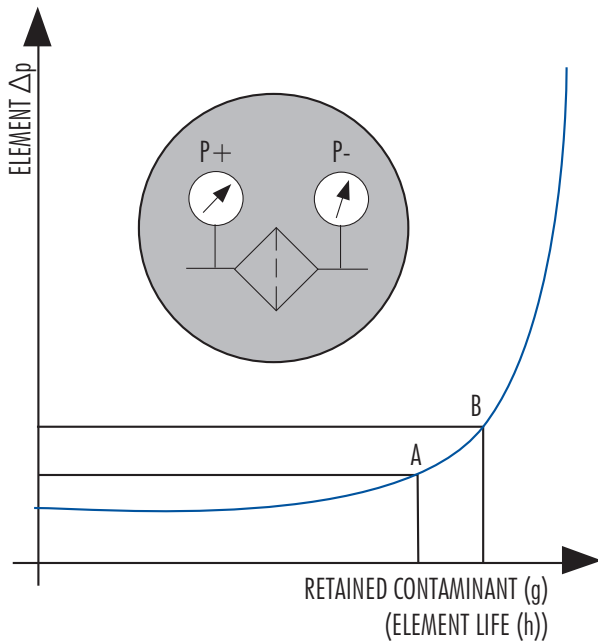
The differential clogging indicator registers the pressure upstream and downstream the filter element and activates a signal when the differential pressure reaches the set value:

- in the VISUAL indicator the signal is given by a green sector switching into red.
- in the ELECTRIC VISUAL indicator, further to the green to red visual indication, an electrical switch is activated.

CODE	DIMENSIONS	SYMBOL	TECHNICAL INFO
Z34			<p>DIFFERENTIAL VISUAL SWITCH 2,7 bar (39 psi)</p> <p>Visual indicator: ■ GREEN: clean element ■ RED : dirty element</p>

CODE	DIMENSIONS	SYMBOL	TECHNICAL INFO
Z35			<p>DIFFERENTIAL ELECTRIC SWITCH 2,7 bar (39 psi)</p> <ul style="list-style-type: none"> • Max current: 0,5A resistive 0,2A inductive • Max voltage: 36 VDC • Protection: IP54 as per DIN 40050

User Tips



The Pressure Drop (Δp = differential pressure) through the filter increases during the system operation due to the contaminant retained by the filter element. The filter element must be replaced when the indicator shows an alarm and before the Δp reaches the by-pass set value (i.e. the set value A of the clogging indicator must always be lower than the set value B of the by-pass valve).

WARNING: in cold start conditions a false alarm can be caused by higher oil viscosity due to low temperature; the indicator alarm must be considered at normal working temperature only.

The Absolute indicator measures the pressure in one point only:

- for suction application it must be located downstream the filter element (P-)
- for return application it must be located upstream the filter element (P+)

The Differential indicator measures exactly the Δp between upstream and downstream of the filter element, i.e. it is the ideal indicator for pressure application.

