



ORELL

# CLOGGING INDICATORS



## DESCRIPTION

During the system operation, the pressure drop through the filter increases as the element clogs, due to the contaminant retained. The filter element must be replaced when clogged and anyway before the pressure drop reaches the bypass valve set value. For this reason it **is recommended a clogging indicator on the filter. It gives a visual or electrical indication and must have a set value lower than the bypass valve set value**, to get an exact indication of the right time for filter element replacement.

## PRESSURE FILTERS INDICATORS

- Pressure gauges
- Pressure switches
- Differential, visual
- Differential, electrical
- Differential, el. + LED
- Differential, el. + thermostat
- Differential, el. + visual
- Differential, el. Vandal proof
- Differential, el. ATEX

## RETURN FILTERS INDICATORS

- Pressure gauges
- Pressure switches
- Differential, visual
- Differential, electrical
- Differential, el. + LED
- Differential, el. + thermostat
- Differential, el. + visual
- Differential, el. ATEX

## OFF-LINE FILTERS INDICATORS

- Differential, visual
- Differential, electrical
- Differential, el. + LED
- Differential, el. + thermostat
- Differential, el. + visual
- Differential, el. ATEX

## SUCTION FILTERS INDICATORS


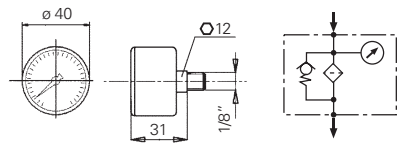

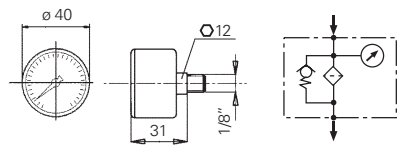

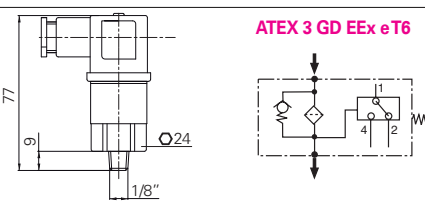

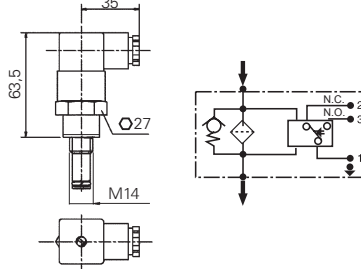

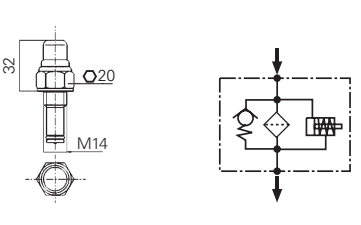

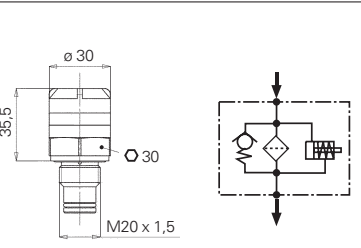
- Vacuum gauges
- Vacuum switches


On **return** and **low pressure filters** the clogging indicator can be a **pressure gauge** or a **pressure switch**, measuring the pressure upstream the filter. On some return filters and on **high pressure filters**, the clogging indicator can be of **differential** type: measuring the pressure upstream and downstream the filter and activating a signal when the differential pressure reaches the set value.

On **suction filters** the clogging indicator is a **vacuum gauge** or a **vacuum switch**, measuring the depressure downstream the filter. All the UFI filters have the port for the indicator as a standard feature; if the filter is ordered without indicator the port is plugged with a removeable plug allowing the indicator to be added easily at any time.

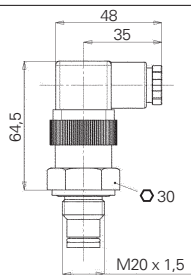
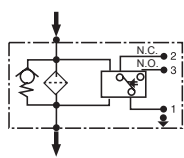
## INDICATORS FOR PRESSURE FILTERS




INDICATOR SERIES		DESCRIPTION	FOR PRESSURE FILTERS SERIES
NBR	FKM	 <b>Pressure gauge</b>	
<b>31</b>	-	Scale 0÷12 bar (0÷1,2 MPa)	PE - PH 
NBR	FKM	 <b>Pressure gauge stainless steel, glycerine filled</b>	
<b>039.0184.1</b>	-	Scale 0÷12 bar (0÷1,2 MPa)	PE - PH 
NBR	FKM	 <b>Pressure switch</b>	
<b>P1</b>	-	Setting 1,5 bar (150 kPa)	PE - PH 
		SPDT, Max voltage 250V - 50 Hz - Max current 6 A resistive, 1 A inductive - Protection IP65 connector DIN 43650	
NBR	FKM	 <b>Differential VISUAL ELECTRICAL indicator</b>	
<b>N0</b>	<b>S0</b>	Setting 1,3 bar (130 kPa)	for FPE A+, B+ 
		SPDT differential switch. C.C. 14 - 30 V: > max resistive or inductive load 4 - 3 A respectively C.A. 125-250 V: > max resistive or inductive load 1 A - Protection IP65 - Connector DIN 43650	Recommended tightening torque 90 Nm
NBR	FKM	 <b>Differential VISUAL indicator</b>	
<b>U0</b>	<b>W0</b>	Setting 1,3 bar (130 kPa)	for FPE A+, B+ 
			Recommended tightening torque 90 Nm
NBR	FKM	 <b>Differential VISUAL indicators</b>	
<b>5B</b>	<b>AB</b>	Setting 1,3 bar (130 kPa)	PH 
<b>5D</b>	<b>AD</b>	Setting 2,5 bar (250 kPa)	(PA - PB - PD - PL - PM) Recommended tightening torque 90 Nm
<b>5E</b>	<b>AE</b>	Setting 5 bar (500 kPa)	PA - PB - PC - PD - PL - PM
<b>5F</b>	<b>AF</b>	Setting 8 bar (800 kPa)	PA - PB - PC - PD - PL - PM

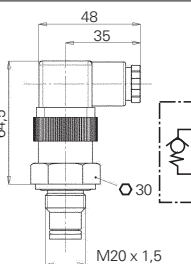
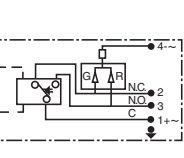
INDICATOR SERIES		DESCRIPTION	FOR PRESSURE FILTERS SERIES
NBR	FKM	 <b>Differential ELECTRICAL indicators</b>	
<b>6B</b>	<b>CB</b>	Setting 1,3 bar (130 kPa)	PH
<b>6D</b>	<b>CD</b>	Setting 2,5 bar (250 kPa)	(PA - PB - PD - PL - PM)
<b>6E</b>	<b>CE</b>	Setting 5 bar (500 kPa)	PA - PB - PC - PD - PL - PM
<b>6F</b>	<b>CF</b>	Setting 8 bar (800 kPa)	PA - PB - PC - PD - PL - PM
		SPDT differential switch. C.C. 14 - 30 V: > max resistive or inductive load 4 - 3 A respectively C.A. 125-250 V: > max resistive or inductive load 1 A - Protection IP65 - Connector DIN 43650	


Recommended tightening torque  
90 Nm

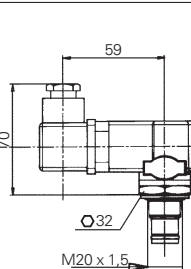
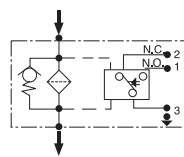
NBR	FKM	 <b>Differential ELECTRICAL indicators with LED (24 V) for visual indication</b>	
<b>7B</b>	<b>EB</b>	Setting 1,3 bar (130 kPa)	PH
<b>7D</b>	<b>ED</b>	Setting 2,5 bar (250 kPa)	(PA - PB - PD - PL - PM)
<b>7E</b>	<b>EE</b>	Setting 5 bar (500 kPa)	PA - PB - PC - PD - PL - PM
<b>7F</b>	<b>EF</b>	Setting 8 bar (800 kPa)	PA - PB - PC - PD - PL - PM
		SPDT differential switch. C.C. 14 - 30 V: > max resistive or inductive load 4 - 3 A respectively C.A. 125-250 V: > max resistive or inductive load 1 A - Protection IP65 - Connector DIN 43650	


Recommended tightening torque  
90 Nm

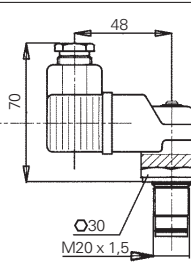
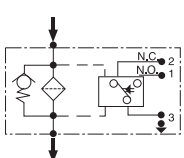
NBR	FKM	 <b>Differential ELECTRICAL indicators with THERMOSTAT 30° C</b>	
<b>T0</b>	<b>DB</b>	Setting 1,3 bar (130 kPa)	PH
<b>T2</b>	<b>DE</b>	Setting 5 bar (500 kPa)	PA - PB - PC - PD - PL - PM
<b>T3</b>	<b>DF</b>	Setting 8 bar (800 kPa)	PA - PB - PC - PD - PL - PM
<b>T6</b>	<b>DD</b>	Setting 2,5 bar (250 kPa)	(PA - PB - PD - PL - PM)
		SPDT differential switch. C.C. 14 - 30 V: > max resistive or inductive load 4 - 3 A respectively C.A. 125-250 V: > max resistive or inductive load 1 A - Protection IP65 - Connector DIN 43650	


Recommended tightening torque  
90 Nm

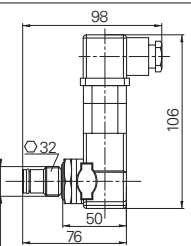
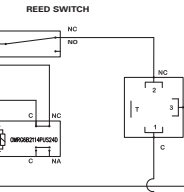
NBR	FKM	 <b>Differential VISUAL ELECTRICAL indicators</b>	
<b>70</b>	<b>E0</b>	Setting 1,3 bar (130 kPa)	PH
<b>76</b>	<b>E6</b>	Setting 2,5 bar (250 kPa)	(PA - PB - PD - PL - PM)
<b>72</b>	<b>E2</b>	Setting 5 bar (500 kPa)	PA - PB - PC - PD - PL - PM
<b>73</b>	<b>E3</b>	Setting 8 bar (800 kPa)	PA - PB - PC - PD - PL - PM
		SPDT differential switch. C.C. 14 - 30 V: > max resistive or inductive load 4 - 3 A respectively C.A. 125-250 V: > max resistive or inductive load 1 A - Protection IP65 - Connector DIN 43650	


Recommended tightening torque  
90 Nm

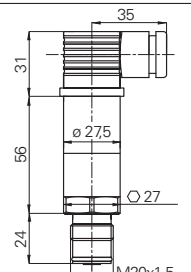
NBR	FKM	 <b>Differential ELECTRICAL indicators VANDAL PROOF</b>	
<b>M2</b>	-	Setting 5 bar (500 kPa)	PA - PB - PC - PD - PL - PM
<b>M3</b>	-	Setting 8 bar (800 kPa)	PA - PB - PC - PD - PL - PM
<b>M6</b>	-	Setting 2,5 bar (250 kPa)	(PA - PB - PD - PL - PM)
		SPDT differential switch. C.C. 14 - 30 V: > max resistive or inductive load 4 - 3 A respectively C.A. 125-250 V: > max resistive or inductive load 1 A - Protection IP65 - Connector DIN 43650	

Recommended tightening torque  
90 Nm

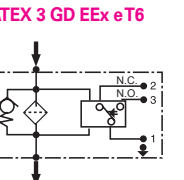



NBR	FKM	 <b>Differential ELECTRICAL indicators ATEX</b>	
<b>008.0239.2</b>	-	Setting 1,3 bar (130 kPa)	PA - PB - PD - PL - PM
<b>008.0240.2</b>	-	Setting 2,5 bar (250 kPa)	(PA - PB - PD - PL - PM)
<b>008.0235.2</b>	-	Setting 5 bar (500 kPa)	PA - PB - PC - PD - PL - PM
<b>008.0212.2</b>	-	Setting 8 bar (800 kPa)	PA - PB - PC - PD - PL - PM
		SPDT differential switch. C.C. 14 - 30 V: > max resistive or inductive load 4 - 3 A respectively C.A. 125-250 V: > max resistive or inductive load 1 A - Protection IP65 - Connector DIN 43650	

Recommended tightening torque  
90 Nm


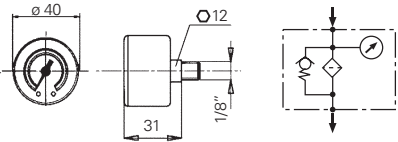

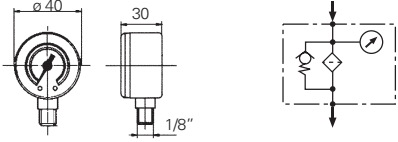

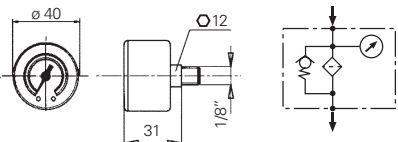

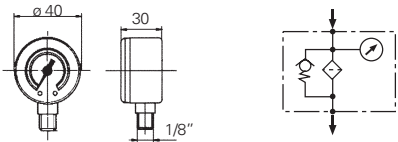

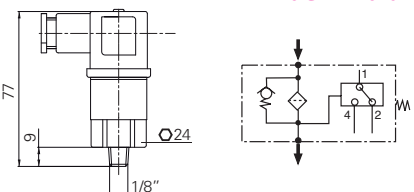



ATEX 3 GD EEx e T6



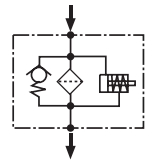
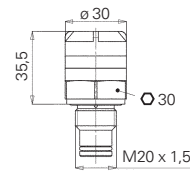
# INDICATORS FOR RETURN FILTERS




INDICATOR SERIES		DESCRIPTION	FOR RETURN FILTERS SERIES
NBR	FKM	 <b>Pressure gauge</b>	
<b>30</b>	-	Scale 0÷6 bar (0÷600 kPa)	RA - RB - RC - RF - RH
			
NBR	FKM	 <b>Pressure gauge</b>	
<b>32</b>	-	Scale 0÷6 bar (0÷600 kPa)	RA - RB - RC - RF - RH
			
NBR	FKM	 <b>Pressure gauge stainless steel, glycerine filled</b>	
<b>039.0178.1</b>	-	Scale 0÷6 bar (0÷600 kPa)	RA - RB - RC - RF - RH
			
NBR	FKM	 <b>Pressure gauge stainless steel, glycerine filled</b>	
<b>039.0183.1</b>	-	Scale 0÷6 bar (0÷600 kPa)	RA - RB - RC - RF - RH
			
NBR	FKM	 <b>Pressure switch</b>	
<b>P1</b>	-	Setting 1,5 bar (150 kPa) - SPDT	RA - RB - RC - RH
<b>P2</b>	-	Setting 3 bar (300 kPa) - SPDT	RF - W execution
<b>P4</b>	-	Setting 1,3 bar (130 kPa) - SPDT	RF
<b>P6</b>	-	Setting 2 bar (200 kPa) - SPDT	RB
		SPDT, Max voltage 250V - 50 Hz - Max current 6 A resistive, 1 A inductive - Protection IP65 connector DIN 43650	
			

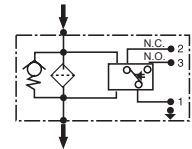
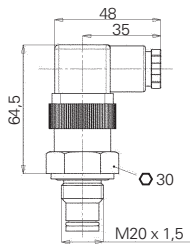
INDICATOR SERIES		DESCRIPTION	FOR RETURN FILTERS SERIES
NBR	FKM	 <b>Differential VISUAL indicators</b>	
<b>5B</b>	<b>AB</b>	Setting 1,3 bar (130 kPa)	RF
<b>5C</b>	<b>AC</b>	Setting 2 bar (200 kPa)	RD
		SPDT differential switch. C.C. 14 - 30 V: > max resistive or inductive load 4 - 3 A respectively C.A. 125-250 V: > max resistive or inductive load 1 A - Protection IP65 - Connector DIN 43650	


Recommended tightening torque  
90 Nm



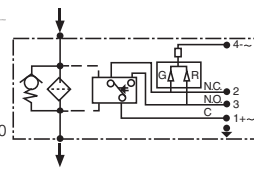
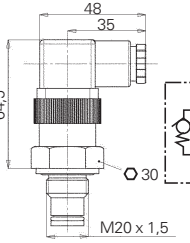
NBR	FKM	 <b>Differential ELECTRICAL indicators</b>	
<b>6B</b>	<b>CB</b>	Setting 1,3 bar (130 kPa)	RF
<b>6C</b>	<b>CC</b>	Setting 2 bar (200 kPa)	RD
		SPDT differential switch. C.C. 14 - 30 V: > max resistive or inductive load 4 - 3 A respectively C.A. 125-250 V: > max resistive or inductive load 1 A - Protection IP65 - Connector DIN 43650	


Recommended tightening torque  
90 Nm



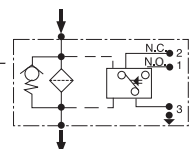
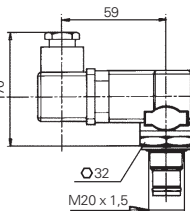
NBR	FKM	 <b>Differential ELECTRICAL indicators with LED (24 V) for visual indication</b>	
<b>7B</b>	<b>EB</b>	Setting 1,3 bar (130 kPa)	RF
<b>7C</b>	<b>EC</b>	Setting 2 bar (200 kPa)	RD
		SPDT differential switch. C.C. 14 - 30 V: > max resistive or inductive load 4 - 3 A respectively C.A. 125-250 V: > max resistive or inductive load 1 A - Protection IP65 - Connector DIN 43650	


Recommended tightening torque  
90 Nm



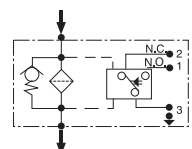
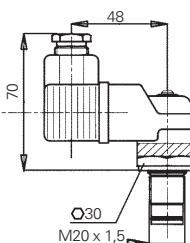
NBR	FKM	 <b>Differential ELECTRICAL indicators with THERMOSTAT 30° C</b>	
<b>T0</b>	<b>DB</b>	Setting 1,3 bar (130 kPa)	RF
<b>T1</b>	<b>DC</b>	Setting 2 bar (200 kPa)	RD
		SPDT differential switch. C.C. 14 - 30 V: > max resistive or inductive load 4 - 3 A respectively C.A. 125-250 V: > max resistive or inductive load 1 A - Protection IP65 - Connector DIN 43650	


Recommended tightening torque  
90 Nm



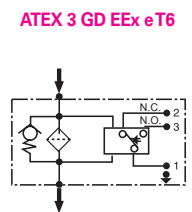
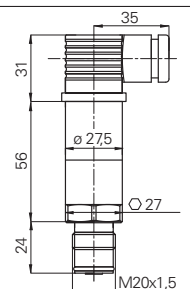
NBR	FKM	 <b>Differential VISUAL ELECTRICAL indicators</b>	
<b>70</b>	<b>E0</b>	Setting 1,3 bar (130 kPa)	RF
<b>71</b>	<b>E1</b>	Setting 2 bar (200 kPa)	RD
		SPDT differential switch. C.C. 14 - 30 V: > max resistive or inductive load 4 - 3 A respectively C.A. 125-250 V: > max resistive or inductive load 1 A - Protection IP65 - Connector DIN 43650	

Recommended tightening torque  
90 Nm



NBR	FKM	 <b>Differential ELECTRICAL indicators ATEX</b>	
<b>008.0239.2</b>	-	Setting 1,3 bar (130 kPa)	RF
<b>008.0234.2</b>	-	Setting 2 bar (200 kPa)	RD
		SPDT differential switch. C.C. 14 - 30 V: > max resistive or inductive load 4 - 3 A respectively C.A. 125-250 V: > max resistive or inductive load 1 A - Protection IP65 - Connector DIN 43650	


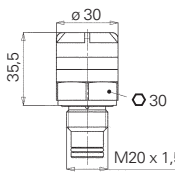
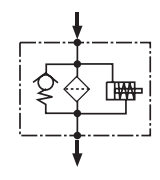

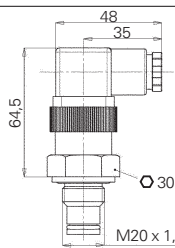
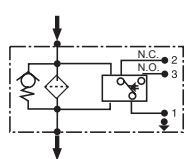

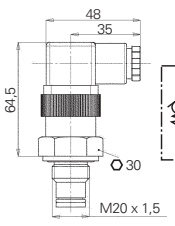
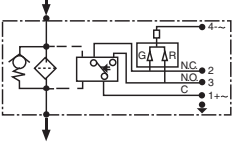

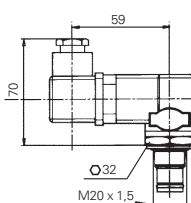
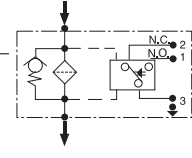

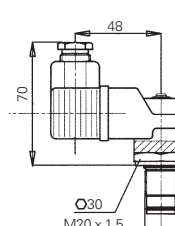
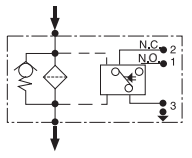

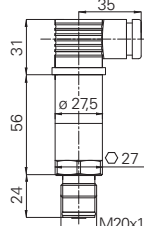
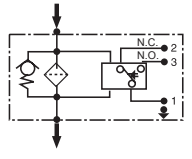
Recommended tightening torque  
90 Nm



**ATEX 3 GD EEx eT6**


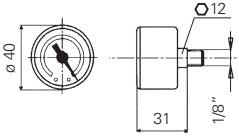
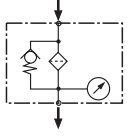

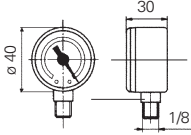
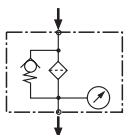

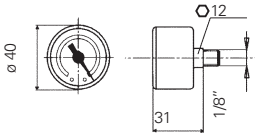
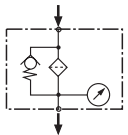

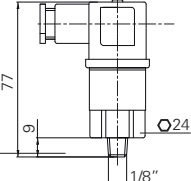
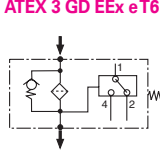
# INDICATORS FOR OFF-LINE FILTERS



INDICATOR SERIES		DESCRIPTION	FOR RETURN OFF-LINE SERIES
NBR	FKM	 <b>Differential VISUAL indicators</b>	
<b>5B</b>	<b>AB</b>	Setting 1,3 bar (130 kPa)	OF - UOW  Recommended tightening torque 90 Nm  
NBR	FKM	 <b>Differential ELECTRICAL indicators</b>	
<b>6B</b>	<b>CB</b>	Setting 1,3 bar (130 kPa)	OF - UOW  Recommended tightening torque 90 Nm  
		SPDT differential switch. C.C. 14 - 30 V: > max resistive or inductive load 4 - 3 A respectively C.A. 125-250 V: > max resistive or inductive load 1 A - Protection IP65 - Connector DIN 43650	
NBR	FKM	 <b>Differential ELECTRICAL indicators with LED (24V) for visual indication</b>	
<b>7B</b>	<b>EB</b>	Setting 1,3 bar (130 kPa)	OF - UOW  Recommended tightening torque 90 Nm  
		SPDT differential switch. C.C. 14 - 30 V: > max resistive or inductive load 4 - 3 A respectively C.A. 125-250 V: > max resistive or inductive load 1 A - Protection IP65 - Connector DIN 43650	
NBR	FKM	 <b>Differential ELECTRICAL indicators with THERMOSTAT 30° C</b>	
<b>T0</b>	<b>DB</b>	Setting 1,3 bar (130 kPa)	OF - UOW  Recommended tightening torque 90 Nm  
		SPDT differential switch. C.C. 14 - 30 V: > max resistive or inductive load 4 - 3 A respectively C.A. 125-250 V: > max resistive or inductive load 1 A - Protection IP65 - Connector DIN 43650	
NBR	FKM	 <b>Differential VISUAL ELECTRICAL indicators</b>	
<b>70</b>	<b>E0</b>	Setting 1,3 bar (130 kPa)	OF - UOW  Recommended tightening torque 90 Nm  
		SPDT differential switch. C.C. 14 - 30 V: > max resistive or inductive load 4 - 3 A respectively C.A. 125-250 V: > max resistive or inductive load 1 A - Protection IP65 - Connector DIN 43650	
NBR	FKM	 <b>Differential ELECTRICAL indicators ATEX</b>	
<b>008.0239.2</b>	-	Setting 1,3 bar (130 kPa)	OF - UOW  Recommended tightening torque 90 Nm  <b>ATEX 3 GD EEx eT6</b> 
		SPDT differential switch. C.C. 14 - 30 V: > max resistive or inductive load 4 - 3 A respectively C.A. 125-250 V: > max resistive or inductive load 1 A - Protection IP65 - Connector DIN 43650	

**INDICATORS FOR SUCTION FILTERS**



INDICATOR SERIES		DESCRIPTION	FOR SUCTION FILTERS SERIES
NBR	FKM		
10	-	 <b>Vacuum gauge</b>	SC - SD - SE  
11	-	 <b>Vacuum gauge</b>	SC - SD  
008.0111.2	-	 <b>Vacuum gauge</b> Glycerine filled - 2 Scales	SC - SD - SE  
91	-	 <b>Vacuum switch</b> Setting 0,2 bar (20 kPa) SPDT	SC - SD - SE  
		SPDT, Max voltage 250V - 50 Hz - Max current 6 A resistive, 1 A inductive - Protection IP65 connector DIN 43650	