



DESCRIPTION

Compact **Δp - CONTROL - FILTER - SCANNER DFS-73** qualified by a multitude of functions that can be programmed easily, fulfils all requirements for an economic operation of modern filter-plants.

Examples: JET - Filter - plants, where filters are cleaned by compressed air-pulses through valves.

The filter pollution is measured as a Δp -pressure and indicated on the display. If the Δp -pressure is low, that means the filters are clean, the SCANNER runs with a long **INTERVAL 2**, programmable from 5 s - 60 min and cares for occasional cleaning **PULSES** - separately programmable for each **INTERVAL 1** til 4 - between 20 ms - 5 s, indicated by the LED **CONTROL**. The times of **PULSE** and **INTERVAL** are programmable very precise by the pushbuttons **PAR**, **ENT**, **↓** and **↑**.

When the Δp -pressure increases with the filter pollution and Δp -set point **CONTROL max** is reached, the cleaning process starts with a shorter **INTERVAL 1**, programmable from 5 - 240 s. During the cleaning, the Δp -pressure falls and finally Δp -set point **CONTROL min** is reached, the longer **INTERVAL 2** being activated again. If the Δp -pressure do not falls during cleaning with **INTERVAL 1** because more dust comes in the filter or the programmed time for **INTERVAL 1** is too long so that the Δp -pressure increases to the Δp -set point **CONTROL above-max** the cleaning process changed to a third **INTERVAL 3** programmable from 5 - 240 s. During the cleaning process it will be shown by LEDs with which **INTERVAL** the **CONTROLER** is working.

All Δp -pressure set points - also the set points for activating the **INTERVALS 1 and 2 - CONTROL max and min** - are programmable with the pushbuttons **PAR**, **ENT**, **↓** and **↑**. While working process of the DFS-73, with this pushbuttons the programmed data are recalled quickly. With the programmable **Δp-DAMPING**, the influence of pressure peaks of the filter-bags can be reduced. If the Δp -pressure decreases or increases due to wrong cleaning or a compressed air deficiency, this condition can be indicated by a relay for which two Δp -set points - **ALARM max and min** - are programmable and visualised by the LEDs **ALARM**. A special **Valve-Control-System** gives off an **ALARM** in the case of: line-break, short circuit and no **JET-air** pulses.

Aftercleaning with **INTENSIVE-CLEANING-CYCLE - I-C-C** with **IMPULSE 4** and **INTERVAL 4** - starts, when the process air is disconnected and detected by the Δp -set point **I-C-C**. The number of further cleaning cycles to be carried out can easily be programmed from 1 to 200. At the end of the cleaning cycle, the DFS-73 stops and restarts automatically as soon as the process air is connected again.

The **Δp-CONTROL-FILTER-SCANNER DFS-73** causes a longer service life of the filters and an economic handling of energy. Compressed air is being saved for the cleaning process and an economic operation of the filter plant is made possible.

FEATURES

- 25 filter valve outputs, 24 VDC loadable with 46 W e.g. 50 valves with 23 W. The number of valve outputs is programmable
- Extension function : extension with TFS-73 TRANS-FILTER-SCANNER
- Pressure sensor overload-safe and temperature compensated, with manual zero point calibration function
- Programmable Δp -ranges by the user are possible, within the 3 unit-groups:

- Group 1 :	0 - 2 mbar	to	0 - 10 mbar
- Group 2 :	0 - 20 mbar	to	0 - 100 mbar
- Group 3 :	0 - 200 mbar	to	0 - 1000 mbar
- Δp -Damping, programmable : ca. 0 s to 240 s
- Valve - control : wire break, short circuit, no **JET-air-pulses**
- **PULSE 1 - 4** : 20 ms - 5 s, separately programmable for each **INTERVAL 1 - 4**
- **INTERVAL 1** : 5 s - 240 s
- **INTERVAL 2** : 5 s - 60 min
- **INTERVAL 3** : 5 s - 240 s
- **INTERVAL 4 for I-C-C** : 5 s - 240 s
- 6 Δp -set points are programmable: **CONTROL min**, **CONTROL max**, **CONTROL above-max**, **I-C-C**, **ALARM min** and **ALARM max**
- Programmable minimum signal period from 3 s - 999 s for the Δp -set points
- Programmable delay time from 1 s - 999 s for the Δp -set points
- **INTENSIVE-CLEANING-CYCLE I-C-C**, programmable 1 - 200 cycles
- Signal inputs for remote control: **HAND** , **I-C-C**, **STOP**
- Analogue output 0-10 V, 0-20 mA or 2-10 V, 4-20 mA, short-circuit safe
- **EX-protection** conform **ATEX Zone 22**
- Option: 4 keys in the cover for service from outside
- Option: Analogue input 4-20 mA for external Δp -Transmitter **DMC***
- Fulfils Machine guideline 2006/42/EG, main-power guideline 2006/95/EG and EMV guideline 2004/108/EG
- High reliability due to "burn in-function"
- Marking: Ex II 3D Ex tc IIIB T85°C Dc X. For special operating conditions have a look to Pressure Media

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TECHNISCHE DATEN / TECHNICAL DATA

		Gruppe - Messbereich: / Group - range:	1 - 10.....mbar.....ORDER-INDE: -group-mbar-
Messbereiche Δp :	0-2 - 0-10 Messspanne / measuring range	2 - 100...mbar.....ORDER-INDE: -group-mbar-	
Pressure ranges Δp :	0-20 - 0-100 Messspanne / measuring range	3 - 1000..mbar.....ORDER-INDE: -group-mbar-	
	0-200 - 0-1000 Messspanne / measuring range	4 - x.....mbar.....ORDER-INDE: -group-mbar-	
	0-2.00 - 0-1000 Anzeigebereich / Display-range		
	Gruppe 4 gilt nur, wenn der Strom-Messbereich 4 - 20 mA ORDER-INDE: -420- gewählt wird.		
	Group 4 is only valid by chosen current-input 4 - 20 mA ORDER-INDE: -420-		
	Wählen Sie e i n e Gruppe aus für die Messbereiche, die im Gerät verfügbar sein sollen.		
	Please choose out of o n e group for the ranges, which should be integrated in the unit.		
Anzeige, Display :	Digital 3-stellig, 7-Segment-LED rot, 14 mm hoch. Digital, 3-digit, 7-segment - LED, red, 14 mm high		
Δp-Dämpfung, Damping :	Programmierbar / programmabel: ca. 0 s bis / til 240 s		
Überlastbarkeit :	Statischer Gleichdruck einseitig / Static balanced pressure on one side:		
Overload capacity :	Messbereich / range, bis / up to: 2 - 10 mbar: pmax = 250 mbar		
	Messbereich / range, bis / up to: 20 - 100 mbar: pmax = 1 bar		
	Messbereich / range, bis / up to: 200 - 1000 mbar: pmax = 2 bar		
	Statischer Gleichdruck beidseitig / Static balanced pressure on two sides:		
	Messbereich / range, bis / up to: 2 - 10 mbar: pmax = 600 mbar		
	Messbereich / range, bis / up to: 20 - 100 mbar: pmax = 5 bar		
	Messbereich / range, bis / up to: 200 - 1000 mbar: pmax = 5 bar		
Gesamtfehler :	Linearität + Hysterese + Reproduzierbarkeit : \pm 2% F.S. bis / up to \leq 2 mbar Messbereich / range		
Total error :	Linearity + hysteresis + reproducibility : \pm 1% F.S. ab / from \geq 3 mbar Messbereich / range		
Langzeitstabilität :	0,1 % F.S. / Jahr (F.S. = vom Messbereich / Full Scale) Long term stability : 0,1% F.S. / year		
Temperaturfehler :	+10°C bis +50°C : 0,025 % F.S. / K (K = Kelvin) Betriebstemperatur : -20°C bis +40°C.		
Temperature error :	+50°F up to +122°F : 0.025 % F.S. / K Operating temperature : -4°F to +104°F.		
Lagertemperatur :	-20°C bis +50°C bei Geräten für den Einsatz in Ex-Zonen. Sondergeräte: -40°C bis +50°C		
Storage temperature :	-4°F to +122°F for units installed in Ex-Zones. Special units : -40°F to +122°F		
Druckmedium :	Staubhaltige Luft mit einer Zündenergie von \geq 10 mJ wie sie z.B. auch in Ex-Zone 20 / 21 bzw. 22 vorkommt, die Acetalharz, Polyamid, Polyetherimide, POM, PVC, Silizium, Silicon, Aluminium, Messing, Nickel, Edelstahl und Gold nicht angreifen.		
Pressure Media :	Dusty air with an inflame energy \geq 10 mJ as it occur in e.g. Ex-Zone 20 / 21 resp. 22 - , not corroding acetal resins, polyamide, polyetherimide, POM, PVC, gold, silicon, aluminium, brass, nickel, stainless steel and silicone.		
Zeitbereiche :	IMPULS 1-4 / PULSE 1-4: 20 ms - 5 s PAUSE 1 / INTERVAL 1 : 5 s - 240 s für Schaltpunkt / for set point CONTROL max		
Time ranges :	für jede PAUSE 1-4 programmierbar / programmable for each INTERVAL 1-4. PAUSE 2 / INTERVAL 2 : 5 s - 60 min für Schaltpunkt / for set point CONTROL min		
	PAUSE 3 / INTERVAL 3 : 5 s - 240 s für Schaltpunkt / for set point CONTROL above-max		
	PAUSE 4 / INTERVAL 4 : 5 s - 240 s für Schaltpunkt / for set point I-C-C		
Druck-Schaltpunkte Δp :	CONTROL max : Schaltet um von PAUSE 2 auf PAUSE 1 / switches between INTERVAL 2 and INTERVAL 1		
Pressure set points Δp :	CONTROL min : Schaltet um von PAUSE 1 auf PAUSE 2 / switches between INTERVAL 1 and INTERVAL 2		
	CONTROL above-max : Schaltet um von PAUSE 1 auf PAUSE 3 / switches between INTERVAL 1 and INTERVAL 3		
	I-C-C : Startet Intensiv-Reinigungs-Zyklus I-C-C mit PAUSE 4 START, Intensive Cleaning Cycle I-C-C starts with INTERVAL 4		
	ALARM max : Differenzdruck zu hoch, Filter verunreinigt / diff.-pressure too high, filters are not clean.		
	ALARM min : Differenzdruck zu niedrig, Filter-Absaugung defekt, / diff.-pressure too low.		
Programmierbarkeit :	Ohne Ventilweiterung: Normalfunktion / Normal function. Mit Ventilweiterung für externe TRANS-FILTER-SCANNER TFS-73:		
Programmability :	Expanderfunktion / Extension function: more valve-output with external TRANS-FILTER-SCANNER TFS-73		
	Ventile / Valves : 2 bis / to 25. Intensiv-Reinigungs-Zyklen I-C-C: 0 - 255 Zyklen / Intensive-Cleaning-Cycle I-C-C: 1 - 200 cycles		
Signaleingänge :	Analogue : - Strom-Messbereich : 4-20 mA Eingang für externen Δp -SENSOR-TRANSMITTER DMC*..... ORDER-INDE: -420- Wenn das Gerät mit Stromeingang ausgerüstet ist, entfällt die interne Δp -Messung. Das Gerät hat dann keine Druckanschlüsse.		
	Digital : - I-C-C Nachreinigung mit IMPULS 3 und PAUSE 3, Display zeigt: ICC - HAND = Dauerabreinigung mit IMPULS 1 und PAUSE 1, Display zeigt: In1 - STOP Ventilansteuerung dauerhaft verriegelt, Display zeigt: Stp.		
Signal inputs :	Aktivierung durch externen Kontakt, der 5 mA bei 5 VDC schalten kann oder durch eine externe Spannung 24 VDC, 10 mA. Analogue : - Current-range input : 4-20 mA input for external Δp -SENSOR-TRANSMITTER DMC* ORDER-INDE: -420- If the unit has a current-input 4-20 mA, the internal Δp -measurement system is not installed. The unit has no pressure connectors.		
	Digital : - I-C-C Aftercleaning with Intensive-Cleaning-Cycle, display shows: ICC - HAND, continues cleaning with PULSE and INTERVAL 1, display shows: In1 - STOP = valve activity is blocked, display shows: Stp		
	Activation with external switches which can switch 5 mA, 5 VDC , dependable or with external voltage 24 VDC, 10 mA.		
Signalausgänge :	Digital :		
Signal output :	2 - 25 Ventilausgänge, 24 V-, 46 Watt, kurzschlussfest. Anzahl der Ausgänge angeben..... ORDER-INDE: -VENT- 2 - 25 valves, 24 V-, 46 Watt, short circuit safe. Indicate the number of valves..... ORDER-INDE: -VALV- Zwei programmierbare Grenzwerte ALARM min + max, auf ein Relais wirkend, 1x Öffnerkontakt. Two adjustable set points, ALARM min + max, acting on one relay-output, 1x NC contact. 1x I-C-C Relaischliesserkontakt, während I-C-C geschlossen / 1x I-C-C-switch, NO, closed during I-C-C. Belastung für alle Relais-Kontakte / load for all relay-switches: min 100 mA, max 2 A cos phi = 1, 24 - 255 V, 50 - 60 Hz, \geq 24 VDC. LED: CONTROL, ALARM, I-C-C, Ventile /Valves, IMPULS / PULSE, PAUSE / INTERVAL. Analogue : linear, programmierbar / Analogue : linear, programmable: 0 - 10 V, Bürde / load = min. 10 k Ω , 0-20 mA, Bürde / load = max. 500 Ω . 2 - 10 V, Bürde / load = min. 10 k Ω , 4-20 mA, Bürde / load = max. 500 Ω .		
Stromversorgung :	240 V \approx , 50 - 60 Hz umschaltbar auf / changeable to: 120 V \approx , 50 - 60 Hz:..... ORDER-INDE: -VAC-		
Power supply :	24 VDC: ORDER-INDE: -VDC-		
Nennleistung/Nom.power :	60 VA		
Elektr. Anschluss :	Schraubklemmen, max. Drahtquerschnitt 2,5 mm 2		
Electric connection :	Screw terminal, max cross section of wire AWG 14		
Druckanschluss :	2x MS-Schlauchverschraubungen mit Überwurfmutter / 2x brass-tube connector with connector nut:		
Pressure connection :	Schlauchgrößen: Da/OD = 6 mm, Di/ID = 4 mm :..... ORDER-INDE: -64MS- size of tube Da/OD = 8 mm, Di/ID = 6 mm :..... ORDER-INDE: -86MS-		
Gehäuse für Ex-Zone 22 :	Abmessungen / dimensions: 360 x 160 x 90 mm, B x H x T (Width x Height x Depth). Schutzart / protection class : IP 65.		
Housing for Ex-Zone 22 :	Material / material : Aluminium . Farbe / colour: grau / grey. Gewicht / weight : 3300 g mit Herstellerbescheinigung / with Manufacturer Certificate.		
Kabelverschraubungen und Taster / Cable-connectors and push-buttons :	1. ohne Taster im Deckel / without pushbuttons in the cover. Schutzart / protection class : IP 65 : 1.1. Kabelverschraubungen zur Sammelverdrahtung der Ventilleitungen / Cable-connectors for a common wiring of the valve-lines:2x M32..... ORDER-INDE: -AL22-EEx-tD-II-T6 1.2. Kabelverschraubungen zur Einzelverdrahtung der Ventilleitungen, geben Sie bitte die Anzahl xx an 2 - 12 x M20 z.B. AL22-12 / Cable-connectors for a separate wiring of the valve-cables, please order the right number xx of cable-connectors: 2 - 12 x M20 e.g. AL22-12..... ORDER-INDE: -AL22-xx-EEx-tD-II-T6 2. mit Taster im Deckel / with pushbuttons in the cover. Schutzart / protection class : IP 65 : 2.1. Kabelverschraubungen zur Sammelverdrahtung der Ventilleitungen / Cable-connectors for a common wiring of the valve-lines: 2x M32..... ORDER-INDE: -AL22-PB-EEx-tD-II-T6 2.2. Kabelverschraubungen zur Einzelverdrahtung der Ventilleitungen, geben Sie bitte die Anzahl xx an 2 - 12 x M20 z.B. AL22-12-PB / Cable-connectors for a separate wiring of the valve-cables, please order the right number xx of cable-connectors: 2 - 12 x M20 e.g. AL22-12-PB ORDER-INDE: -AL22-xx-PB-EEx-tD-II-T6		
Vorschriften / Rules :	EN 60 204-1, EN 61010, EN 61326-1, EN 61326-2-3, EN 60079-31. BGV A2.		
Bestell-Nr. :	DFS-73Q Gruppe-Messbereich - Strom - Volt - AC - Ventile - Anschluss -Gehäuse -CE group - mbar - Input - - DC - VENT -		
ORDER-INDE :	DFS-73Q Group-range of group - Current - Volt - AC - Valves - Connection -Housing -CE		
Beispiel 1 / example 1 :	DFS-73Q - 2 - 100 - 0 - 240 - AC - 12 - 64MS -AL22-12-PB-EEx-tD-II-T6 -CE		
Beispiel 2 / example 2 :	DFS-73Q - 4 - x - 420 - 24 - DC - 25 - 0 -AL22-EEx-tD-II-T6 -CE		