



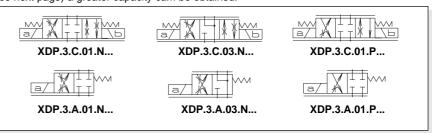
XDP.3		
PROPORTIONAL SOLENOIDS	CH. VIII PAGE 7	
REM.S.RA	CH. IX PAGE 2	
REM.D.RA	CH. IX PAGE 4	
SE.3.AN209	CH. IX PAGE 7	
SE.3.AN204	Ch. IX page 9	
AM.3.H	CH. VIII PAGE 10	
AM.5.H	Ch. VIII PAGE 11	
BC.3.07	Ch. VII page 12	

XDP.3.A... / XDP.3.C ...

Proportional directional valves open loop



The valves of series XDP... control the direction and the volume of the flow according to the feeding current to the proportional solenoid. By using a valve body equipped with increased passage channels it is possible to reach the highest capacity of its dimensions at a parity of pressure drops, (40 l/min with Δp of 10 bar). Each Δp variation on the valve leads to the variation of the capacity which has been set, anyway the valve guarantees an high inner compensation grade and limits the adjustment capacity. For a more accurate capacity control, 2 or 3-way hydrostats for modular plate design are available. The shown flow rates are typical for one line operation (e.g. from P to B). By using the valve with the base for capacity doubling type BC.3.07 (see next page) a greater capacity cam be obtained.



ORDERING CODE

XDP

Proportional directional valve without positional transducer

3

**

A = Single solenoid

CETOP 3/NG6

C = Double solenoid

Type of spool (null position)

Flow path control

(see hydraulic symbols table)

N = symmetrical

P = meter in (only with 01 spool)

Flow rating

 $I/min (\Delta p 10 bar)$

1 = 8 l/min

2 = 15 l/min

3 = 25 l/min

6 = 40 l/min ←

hydrostat. F = 12VDC (1.76 A)G = 24VDC (0.88 A)

00 = No variant

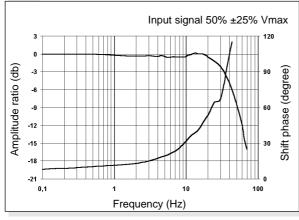
P1 = Rotary emergency

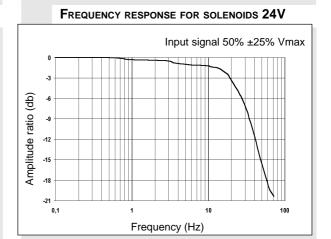
Serial No.

INPUT SIGNAL CURVES - FLOW RATE XDP.3.*.01.N XDP.3.*.01.N (8 I/min $P \rightarrow A/B$) (15 I/min P \rightarrow A/B) $\Delta p = 10 \text{ bar}$ $\Delta p = 10 \text{ bar}$ Q (I/min) Q (I/min) $\Delta p = 5 \text{ bar}$ AM.3.H.3V.P1.08 (∆p »8 bar) I (%) XDP.3.*.01.N XDP.3.*.01.N (25 I/min P \rightarrow A/B) $(40 \text{ I/min P} \rightarrow \text{A/B})$ 45 40 Q (I/min) 30 $\Delta p = 10 \text{ bar}$ (I/min) $\Delta p = 10 \text{ bar}$ 25 In order to reduced the 20 unloading pressure for 10 15 $\Delta p = 5 \text{ bar}$ $\Delta p = 5 \text{ bar}$ setted at 40 l/min flow 10 version we advise to use the ⁴⁰ (%) I (%)

BODE DIAGRAM FOR SOLENOIDS 12V

3 way type AM.5.H.3V...





XDP.3.A... / XDP.3.C ... PROPORTIONAL DIRECTIONAL VALVES OPEN LOOP



OPERATING SPECIFICATIONS

$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	OFERATING SPECIFICATIONS		
Static pressure port T	Max. operating pressure ports P/A/B		350 bar
Nominal flow Duty cycle Continuous 100% ED Type of protection (depending on the connector used) Performance curves See diagram Frequency response See Bode diagram Power limits curves transmitted See diagram at side Fluid viscosity 10 ÷ 500 mm²/s Fluid temperature 20°C ÷ 75°C Ambient temperature 20°C ÷ 70°C Max. contamination level from class 7 at 9 in accordance with NAS 1638 with filter $\beta_{10} \ge 75$ Weight XDP.3.A (single solenoid) 1,7 kg Weight XDP.3.C (double solenoid) 2,9 kg Type of voltages 12V 24V Max. current 1.76 A 0.88 A Solenoid coil resistance 20°C (68°F) 4.8 Ohm 18.4 Ohm Solenoid coil resistance when hot 7.34 Ohm 28.1 Ohm Hysteresis P/A/B/T with a pressure compensator AM.3.H.3V <5% <8% Transient function with stepped electrical input signals $\Delta p = 5$ bar (P/A) 0 ÷ 100% 36 ms 60 ms 100% ÷ 0 26 ms 26 ms	Dynamic pressure port T		210 bar
Duty cycle Type of protection (depending on the connector used) IP 65 Performance curves See diagram Frequency response See Bode diagram Power limits curves transmitted See diagram at side Fluid viscosity 10 ÷ 500 mm²/s Fluid temperature -20°C ÷ 75°C Ambient temperature -20°C ÷ 70°C Max. contamination level from class 7 at 9 in accordance with NAS 1638 with filter $\beta_{10} \ge 75$ Weight XDP.3.A (single solenoid) 1,7 Kg Weight XDP.3.C (double solenoid) 2,9 Kg Type of voltages 12V 24V Max. current 1.76 A 0.88 A Solenoid coil resistance 20°C (68°F) 4.8 Ohm 18.4 Ohm Solenoid coil resistance when hot 7.34 Ohm 28.1 Ohm Hysteresis P/A/B/T with a pressure compensator AM.3.H.3V <5% <8% Transient function with stepped electrical input signals $\Delta p = 5$ bar (P/A) 0 ÷ 100% 36 ms 60 ms 100% ÷ 0 26 ms 26 ms	Static pressure port T		210 bar
	Nominal flow	8 / 15 / 25	5 / 40 l/min
Performance curvesSee diagramFrequency responseSee Bode diagramPower limits curves transmittedSee diagram at sideFluid viscosity $10 \div 500 \text{ mm}^2/\text{s}$ Fluid temperature $-20^{\circ}\text{C} \div 75^{\circ}\text{C}$ Ambient temperature $-20^{\circ}\text{C} \div 70^{\circ}\text{C}$ Max. contamination levelfrom class 7 at 9 in accordancewith NAS 1638 with filter $β_{10} \ge 75$ Weight XDP.3.A (single solenoid) $1,7 \text{ Kg}$ Weight XDP.3.C (double solenoid) $2,9 \text{ Kg}$ Type of voltages $12V$ $24V$ Max. current 1.76 A 0.88 A Solenoid coil resistance 20°C (68°F) 4.8 Ohm 18.4 Ohm Solenoid coil resistance when hot 7.34 Ohm 28.1 Ohm Hysteresis P/A/B/T with a pressure compensator AM.3.H.3V $<5\%$ $<8\%$ Transient function with stepped electrical input signals $\Delta p = 5 \text{ bar}$ (P/A) $0 \div 100\%$ 36 ms 60 ms $100\% \div 0$ 26 ms 26 ms 26 ms	Duty cycle	Continuous	100% ED
Frequency response See Bode diagram Power limits curves transmitted See diagram at side Fluid viscosity 10 ÷ 500 mm²/s Fluid temperature -20°C ÷ 75°C Ambient temperature -20°C ÷ 70°C Max. contamination level from class 7 at 9 in accordance with NAS 1638 with filter $\beta_{10} \ge 75$ Weight XDP.3.A (single solenoid) 1,7 Kg Weight XDP.3.C (double solenoid) 2,9 Kg Type of voltages 12V 24V Max. current 1.76 A 0.88 A Solenoid coil resistance 20°C (68°F) 4.8 Ohm 18.4 Ohm Solenoid coil resistance when hot 7.34 Ohm 28.1 Ohm Hysteresis P/A/B/T with a pressure compensator AM.3.H.3V <5% <8% Transient function with stepped electrical input signals $\Delta p = 5$ bar (P/A) 0 ÷ 100% 36 ms 60 ms 100% ÷ 0 26 ms 26 ms	Type of protection (depending on the connector used)		IP 65
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	Performance curves	Se	e diagram
Fluid viscosity $ \begin{array}{c} \text{Fluid viscosity} \\ \text{Fluid temperature} \\ \text{Ambient temperature} \\ \text{Max. contamination level} \\ \text{Max. contamination level} \\ \text{Weight XDP.3.A (single solenoid)} \\ \text{Weight XDP.3.C (double solenoid)} \\ \text{Type of voltages} \\ \text{Max. current} \\ \text{Solenoid coil resistance 20°C (68°F)} \\ \text{Solenoid coil resistance when hot} \\ \text{Hysteresis P/A/B/T with a pressure compensator AM.3.H.3V} \\ \text{Transient function with stepped electrical input signals} \\ \Delta p = 5 \text{ bar (P/A)} \\ \text{Denoid coil resistance viscosity} \\ \text{Denoid coil resistance viscosity} \\ \text{Denoid coil resistance of the compensator AM.3.H.3V} \\ Comparison of the compensator of the co$	Frequency response	See Bod	le diagram
Fluid temperature $ -20^{\circ}\text{C} \div 75^{\circ}\text{C} $ Ambient temperature $ -20^{\circ}\text{C} \div 75^{\circ}\text{C} $ Ambient temperature $ -20^{\circ}\text{C} \div 70^{\circ}\text{C} $ Max. contamination level $ \text{from class 7 at 9 in accordance} $ with NAS 1638 with filter $\beta_{10} \ge 75$ Weight XDP.3.A (single solenoid) $ 1,7 \text{ Kg} $ Weight XDP.3.C (double solenoid) $ 2,9 \text{ Kg} $ Type of voltages $ 12V \qquad 24V $ Max. current $ 1.76 \text{ A} \qquad 0.88 \text{ A} $ Solenoid coil resistance 20°C (68°F) $ 4.8 \text{ Ohm} \qquad 18.4 \text{ Ohm} $ Solenoid coil resistance when hot $ 7.34 \text{ Ohm} \qquad 28.1 \text{ Ohm} $ Hysteresis P/A/B/T with a pressure compensator AM.3.H.3V $<5\% \qquad <8\% $ Transient function with stepped electrical input signals $ \Delta p = 5 \text{ bar (P/A)} \qquad 0 \div 100\% \qquad 36 \text{ ms} \qquad 60 \text{ ms} $ $ 100\% \div 0 \qquad 26 \text{ ms} \qquad 26 \text{ ms} $	Power limits curves transmitted	See diagra	am at side
Ambient temperature $ -20^{\circ}\text{C} \div 70^{\circ}\text{C} $ Max. contamination level $ \text{from class 7 at 9 in accordance} $ with NAS 1638 with filter $\beta_{10} \ge 75$ Weight XDP.3.A (single solenoid) $ 1,7 \text{ Kg} $ Weight XDP.3.C (double solenoid) $ 2,9 \text{ Kg} $ Type of voltages $ 12V \qquad 24V $ Max. current $ 1.76 \text{ A} \qquad 0.88 \text{ A} $ Solenoid coil resistance 20°C (68°F) $ 4.8 \text{ Ohm} \qquad 18.4 \text{ Ohm} $ Solenoid coil resistance when hot $ 7.34 \text{ Ohm} \qquad 28.1 \text{ Ohm} $ Hysteresis P/A/B/T with a pressure compensator AM.3.H.3V $<5\% \qquad <8\% $ Transient function with stepped electrical input signals $ \Delta p = 5 \text{ bar (P/A)} \qquad 0 \div 100\% \qquad 36 \text{ ms} \qquad 60 \text{ ms} $ $ 100\% \div 0 \qquad 26 \text{ ms} \qquad 26 \text{ ms} $	Fluid viscosity	10 ÷ 5	500 mm²/s
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	Fluid temperature	-20	°C ÷ 75°C
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	Ambient temperature	-20	°C ÷ 70°C
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	Max. contamination level	from class 7 at 9 in a	ccordance
		with NAS 1638 with fi	lter ß ₁₀ ≥75
	Weight XDP.3.A (single solenoid)		1,7 Kg
Max. current1.76 A0.88 ASolenoid coil resistance 20°C (68°F)4.8 Ohm18.4 OhmSolenoid coil resistance when hot7.34 Ohm28.1 OhmHysteresis P/A/B/T with a pressure compensator AM.3.H.3V $<5\%$ $<8\%$ Transient function with stepped electrical input signals $\Delta p = 5$ bar (P/A) $0 \div 100\%$ 36 ms60 ms $100\% \div 0$ 26 ms26 ms	Weight XDP.3.C (double solenoid)		2,9 Kg
Solenoid coil resistance 20°C (68°F) 4.8 Ohm 7.34 Ohm Solenoid coil resistance when hot 7.34 Ohm 4.8 Ohm 4.8 Ohm 7.34 Ohm 4.8 Ohm 7.34 Ohm 4.8 Ohm 7.34 Ohm 4.8 Ohm 7.34 Ohm 7.34 Ohm 4.8 Ohm 7.34 Ohm 9.8 Oh	Type of voltages	12V	24V
Solenoid coil resistance when hot Hysteresis P/A/B/T with a pressure compensator AM.3.H.3V $<5\%$ $<8\%$ Transient function with stepped electrical input signals $\Delta p = 5$ bar (P/A) $0 \div 100\%$ 36 ms 60 ms $100\% \div 0$ 26 ms	Max. current	1.76 A	0.88 A
Hysteresis P/A/B/T with a pressure compensator AM.3.H.3V <5% <8% Transient function with stepped electrical input signals $\Delta p = 5 \text{ bar (P/A)} \qquad 0 \div 100\% \qquad 36 \text{ ms} \qquad 60 \text{ ms} \\ 100\% \div 0 \qquad 26 \text{ ms} \qquad 26 \text{ ms}$	Solenoid coil resistance 20°C (68°F)	4.8 Ohm	18.4 Ohm
Transient function with stepped electrical input signals $\Delta p = 5 \text{ bar (P/A)} \qquad \qquad 0 \div 100\% \qquad \qquad 36 \text{ ms} \qquad \qquad 60 \text{ ms} \\ 100\% \div 0 \qquad \qquad 26 \text{ ms} \qquad \qquad 26 \text{ ms}$	Solenoid coil resistance when hot	7.34 Ohm	28.1 Ohm
$\Delta p = 5 \text{ bar (P/A)}$ $0 \div 100\%$ 36 ms 60 ms $100\% \div 0$ 26 ms 26 ms	Hysteresis P/A/B/T with a pressure compensator AM.3.	H.3V <5%	<8%
100% ÷ 0 26 ms 26 ms	Transient function with stepped electrical input signals		
1 2 11		36 ms	60 ms
Frequency response -3db (Input signal 50% ±25% Vmax) 28Hz 13Hz	100% ÷ 0	26 ms	26 ms
	Frequency response -3db (Input signal 50% ±25% Vma	ax) 28Hz	13Hz

Operating specifications are valid for fluids with 46 mm²/s viscosity at 40°C, using the

AMPLIFIER UNIT AND CONTROL

REM.S.RA.*.*. and REM.D.RA.*.*.

Electronic card control single and double proportional solenoid valve.

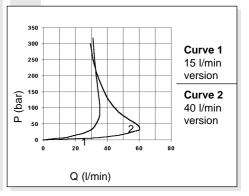
SE.3.AN.209.16... and SE.3.AN.204.16...

Electronic card format EUROCARD for control and double proportional solenoid valve

AM.3.H.2V.P1, AM.3.H.3V.P1 and AM.5.H.3V.P1

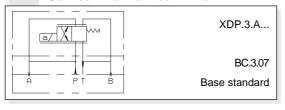
Hydrostats 2 or 3 way.

POWER LIMITS TRANSMITTED



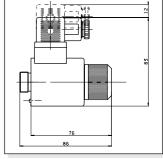
CONFIGURATION FOR DOUBLE FLOW RATE

specified ARON electronic control units.

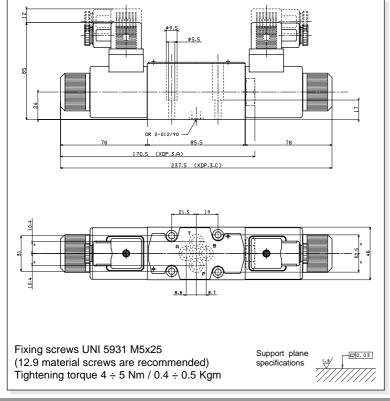


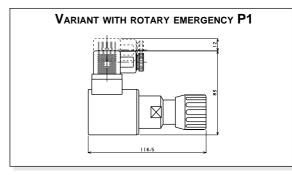


Proportional solenoids



OVERALL DIMENSIONS





Type of protection	
(in relation to connector used)	IP 65
Duty of cycle	100% ED
Max. static pressure	210 bar
Insulation class	H
Weight	0,6 Kg
	- 1

File: ETM83140001 00/2000/e

File: EXDP3001 VIII • 7 01/2000/e