



XQP3...

STANDARD CONNECTORS	CH. I PAGE 20
"D15P" PROPORT. SOLENOIDS	CH. VIII PAGE 23
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ORDERING CODE

XQP

Open loop 2/3 way proportional compensated flow regulator

3

CETOP 3/NG6

C

2/3 way compensation with priority function

3

3 way version (standard)
For to obtain 2-way version the P line must be closed on the subplate

Nominal flow rates

F = 6 l/min

G = 12 l/min

H = 22 l/min

I = 32 l/min

L = 40 l/min

S = without decompression
D = with decompression

Max. current to solenoid

E = 2.35 A

F = 1.76 A

G = 0.88 A

Variant (*):

S1 = No variant

P2 = Rotary emergency

R5 = Rotary emergency 180°

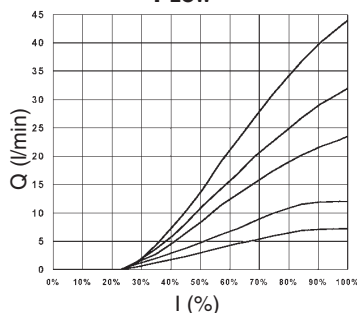
SV = Viton

2

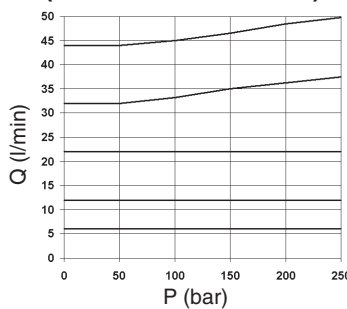
Serial No.

(*) All variants are considered without connectors. The connectors must be order separately. See Ch. I Page 20

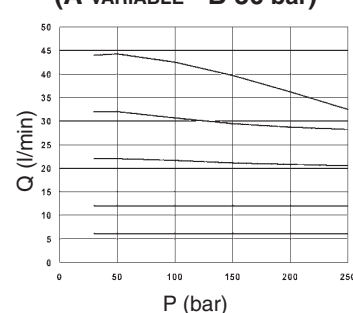
INPUT SIGNAL FLOW



2 WAY COMPENSATION (A 270 bar - B VARIABLE)



2 WAY COMPENSATION (A VARIABLE - B 30 bar)



The fluid used is a mineral based oil with a viscosity of 46 mm²/s at 40°C.
The tests have been carried out at with a fluid of a 40°C.

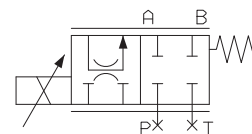
XQP3... OPEN LOOP 2/3 WAY PROPORTIONAL PRESSURE COMPENSATED FLOW REGULATORS



The open loop proportional flow regulator is 2 and 3 way compensated with priority function. It is designed to regulate flow in proportion to an applied electrical current (REM or SE3AN power amplifier). Flow regulation is load independent - B port. Load compensation is achieved by a spool compensator which holds the pressure drop constant across the proportional spool.

Valves are available in the following versions (see hydraulic symbol):

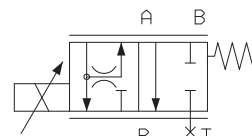
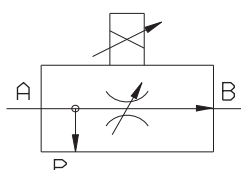
- 2 way pressure compensated - 3 way pressure compensated with priority function.
- 3 way pressure compensated with priority and venting function.



- In order to obtain the 2 way pressure compensated version the cavities P and T have be closed on the subplate.

HYDRAULIC SYMBOLS

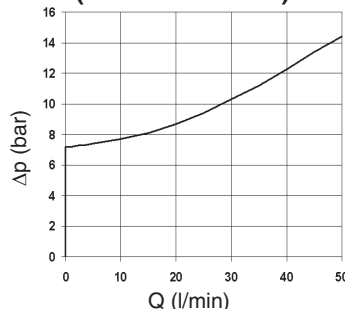
SIMPLIFIED TYPE



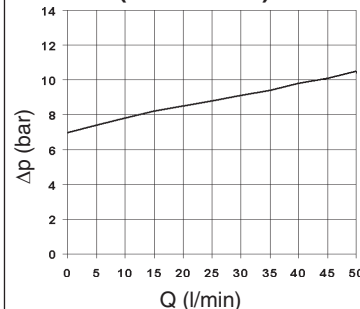
- In order to obtain the 3 way pressure compensated version the cavity T have be closed on the subplate.

DIAGRAMS

ΔP - FLOW RATE A → B (WITH 5 l/min TO P)

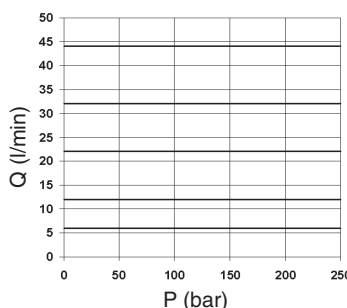


ΔP - SECONDARY LINE FLOW (A → P FREE)



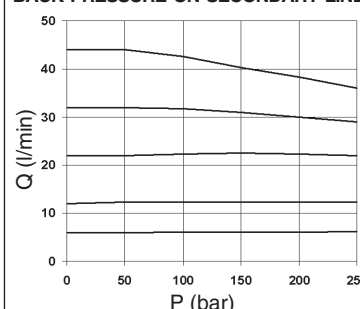
FLOW RATE

BACK PRESSURE ON PRIORITY LINE



FLOW RATE

BACK PRESSURE ON SECONDARY LINE



XQP3... OPEN LOOP 2/3 WAY PROPORTIONAL PRESSURE COMPENSATED FLOW REGULATORS



OPERATING SPECIFICATIONS

Max. operat. pressure ports A/B /P see note (*) With T port blocked on subplate	250 bar
Regulated flow rate	6 / 12 / 22 / 32 / 40 l/min
Decompression drain flow	max 0,7 l/min
Relative duty cycle	Continuous 100% ED
Type of protection (in relation to the connector used)	IP 65
Flow rate gain	See diagram "Input signal flow"
Fluid viscosity	10 ÷ 500 mm ² /s
Fluid temperature	-20°C ÷ 75°C
Ambient temperature	-20°C ÷ 70°C
Max. contamination level	from class 7 to 9 in accordance with NAS 1638 with filter $\beta_{10} \geq 75$
Weight	1,7 Kg

Max. current	2.33A	1.76 A	0.88 A
Solenoid coil resistance at 25°C (77°F)	2.25 Ohm	4.0 Ohm	16.0 Ohm
Hysteresis with Δp 7 bar	$\leq 5\%$	$< 5\%$	$< 8\%$
Response to step Δp = 7 bar			
0 ÷ 100%	32 ms	40 ms	85 ms
100% ÷ 0	33 ms	33 ms	33 ms
Frequency response -3db (Input signal 50% $\pm$ 25% Vmax.)	22Hz	22Hz	12Hz

(*) Pressure dynamic allowed for 2 millions of cycles

Operating specifications are valid for fluids with 46 mm²/s viscosity at 40°C, using specified ARON electronic control units.

Performance data are carried out using the specified Aron power amplifier SE.3.AN... powered to 24V.

AMPLIFIER UNIT AND CONTROL

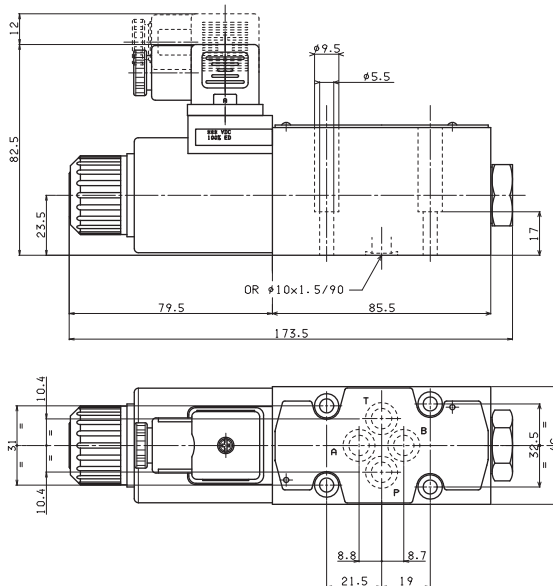
REMSRA.*...

Electronic card for control single proportional solenoid valve.
Recommended dither frequency 100 Hz.

SE3AN2100...

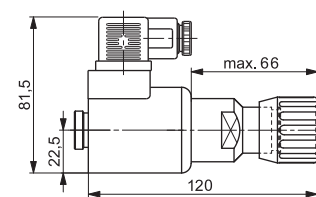
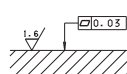
Electronic card format EUROCARD for control single proportional solenoid valve

OVERALL DIMENSIONS

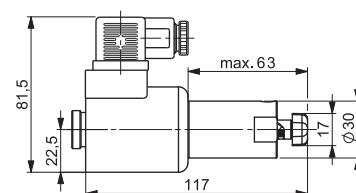


Fixing screws UNI 5931 M5x25
(min. 8.8 material screws are recommended)
Tightening torque 4 ÷ 5 Nm / 0.4 ÷ 0.5 Kgm

Support plane
specifications



P2 Rotary emergency (1)

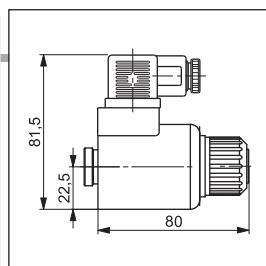


R5 Rotary emergency 180° (2)

(1) **P2** - Adjustable hand emergency.

(2) **R5** - Two positions hand emergency. The regulated flow with emergency actuated can be less than nominal value.

8

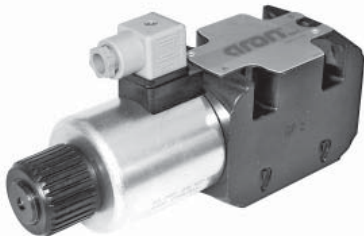


"D15P" PROPORTIONAL SOLENOIDS



Type of protection (in relation to connector used)	IP 66
Duty cycle	100% ED
Insulation class wire	H
Weight (coil)	0,354 Kg
Weight (solenoid)	0,608 Kg

ETD15P - 01/2002/e



XQP5...

STANDARD CONNECTORS	CH. I PAGE 20
"D19P" PROPORT. SOLENOIDS	CH. VIII PAGE 25
REMSRA...	CH. IX PAGE 4

ORDERING CODE

XQP

Open loop 2/3 way
proportional compensated
flow regulator

5

CETOP 5/NG10

C

2/3 way compensation
with priority function

3

3 way version (standard)
For to obtain 2-way version the P line
must be closed on the subplate

Nominal flow rates

E = 45 l/min

F = 75 l/min

G = 105 l/min

S = without decompression
D = with decompression

Voltage

F = 12V DC

G = 24V DC

Variant (*):

S1 = No variant (without connectors)

SV = Viton

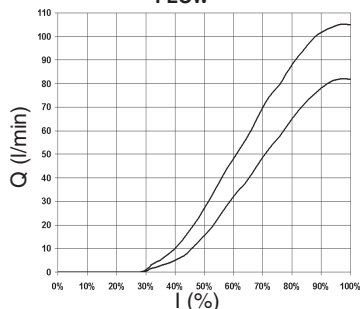
P2 = Rotary emergency

1

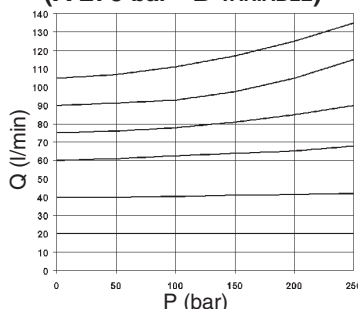
Serial No.

(*) All variants
are considered
without connec-
tors. The connec-
tors must be order
separately.
See Ch. I Page 20

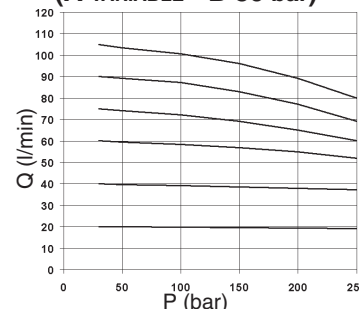
**INPUT SIGNAL
FLOW**



**2 WAY PRESSURE COMPENSATED
(A 270 bar - B VARIABLE)**



**2 WAY PRESSURE COMPENSATED
(A VARIABLE - B 30 bar)**



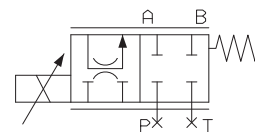
XQP5 OPEN LOOP 2/3 WAY PROPORTIONAL

PRESSURE COMPENSATED FLOW REGULATORS CETOP 5

The open loop proportional flow regulator is 2 and 3 way compensated with priority function. It is designed to regulate flow in proportion to an applied electrical current (REM power amplifier). Flow regulation is load independent - B port. Load compensation is achieved by a spool compensator which holds the pressure drop constant across the proportional spool.

Valves are available in the following versions (see hydraulic symbol):

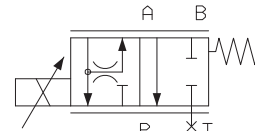
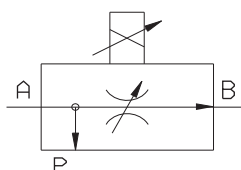
- 2 way pressure compensated
- 3 way pressure compensated with priority function.
- 3 way pressure compensated with priority and venting function.



• In order to obtain the 2 way pressure compensated version the cavities P and T have be closed on the subplate.

SYMBOLS HYDRAULIC

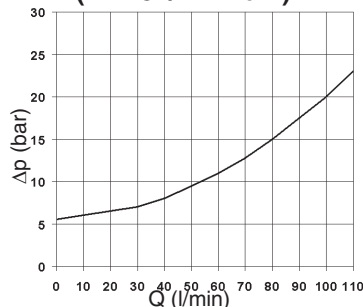
SIMPLIFIED TYPE



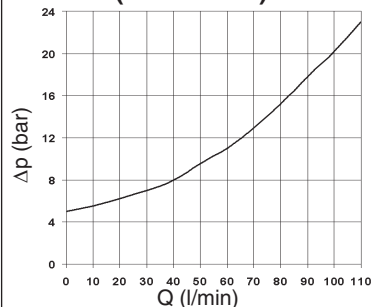
• In order to obtain the 3 way pressure compensated version the cavities T have be closed on the subplate.

DIAGRAMS

**ΔP - FLOW RATE A $\rightarrow$ B
(WITH 5 l/min TO P)**

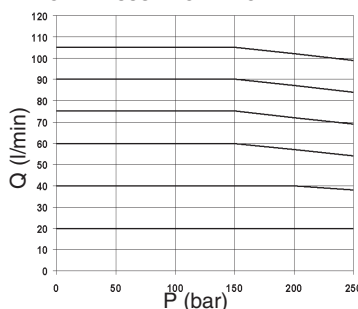


**ΔP - SECONDARY LINE FLOW
(A $\rightarrow$ P FREE)**



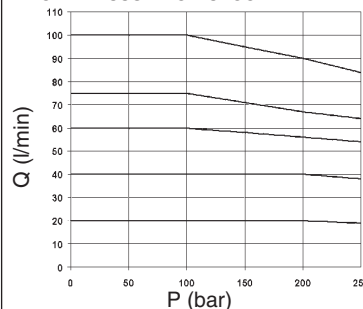
FLOW RATE

BACK PRESSURE ON PRIORITY LINE



FLOW RATE

BACK PRESSURE ON SECONDARY LINE



The fluid used is a mineral based oil with a viscosity of 46 mm²/s at 40°C.
The tests have been carried out at with a fluid of a 40°C.

XQP5 OPEN LOOP 2/3 WAY PROPORTIONAL PRESSURE COMPENSATED FLOW REGULATORS CETOP 5



OPERATING SPECIFICATIONS

Max. operating pressure ports A/B / P (*)	250 bar
Regulated flow rate	75 / 105 l/min
Decompression drain flow	max 0,7 l/min
Relative duty cycle	Continuous 100% ED
Type of protection (in relation to the connector used)	IP 65
Flow rate gain	See diagram "Input signal flow"
Fluid viscosity	10 ÷ 500 mm ² /s
Fluid temperature	-20°C ÷ 75°C
Ambient temperature	-20°C ÷ 60°C
Max. contamination level	from class 7 to 9 in accordance with NAS 1638 with filter $\beta_{10} \geq 75$
Weight	4,97 Kg

Type of voltage	12V	24V
Max. current	2.5 A	1.25 A
Solenoid coil resistance at 20°C (68°F)	2.85 Ohm	11.4 Ohm
Hysteresis with Δp 7 bar	<5%	<8%
Response to step $\Delta p = 7$ bar (P/A)		
0 ÷ 100%	~ 65 ms	-
100% ÷ 0	~ 30 ms	-
Frequency response -3db (Input signal 50% ± 25% Vmax.)	7Hz	-

AMPLIFIER UNIT AND CONTROL

REMSRA.*...

Electronic regulator for control single proportional solenoid valve.
Recommended dither frequency 100 Hz.

(*) Pressure dynamic allowed for 2 millions of cycles. T ports closed on the subplate.

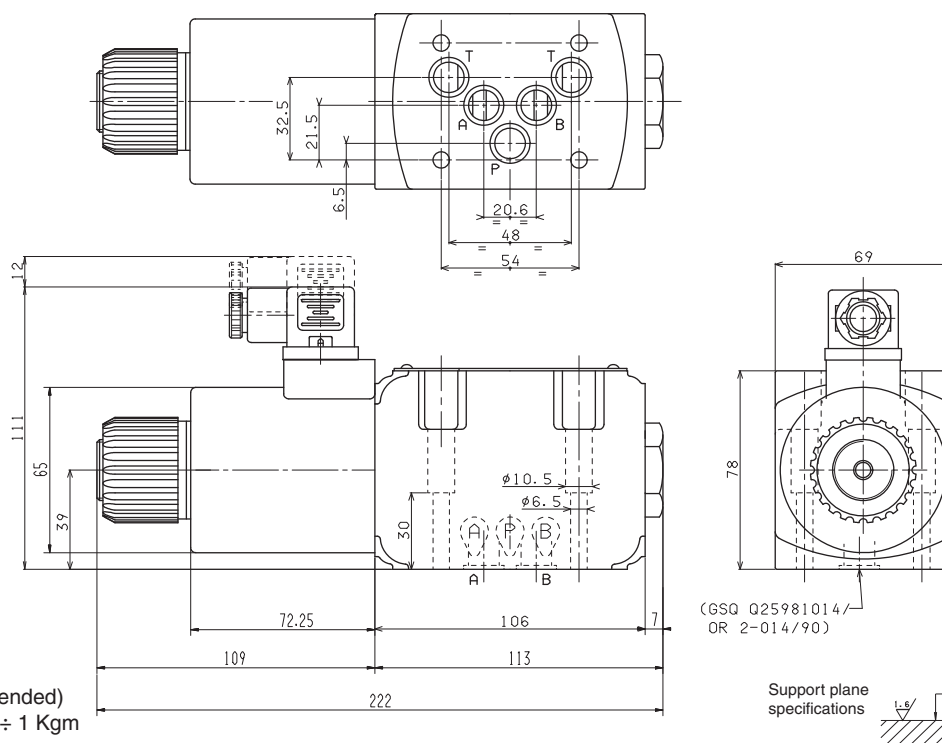
Operating specifications are valid for fluids with 46 mm²/s viscosity at 40°C, using specified ARON electronic control units.

Performance data are carried out using the specified Aron power amplifier type REM.S.RA... power supplied at 24V.

OVERALL DIMENSIONS

E = Manual override

GSQ = Square section seal

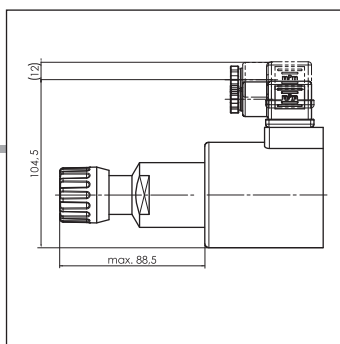


Fixing screws UNI 5931 M6x40
(12.9 material screws are recommended)
Tightening torque 8 ÷ 10 Nm / 0.8 ÷ 1 Kgm

(GSQ Q25981014/
OR 2-014/90)

Support plane
specifications

8



"D19P" PROPORTIONAL SOLENOIDS



Type of protection (in relation to connector used)	IP 65
Ambient temperature	-54°C ÷ 60°C
Duty cycle	100% ED
Insulation class wire	H
Weight	1,58 Kg

ETD19P - 01/2002/e