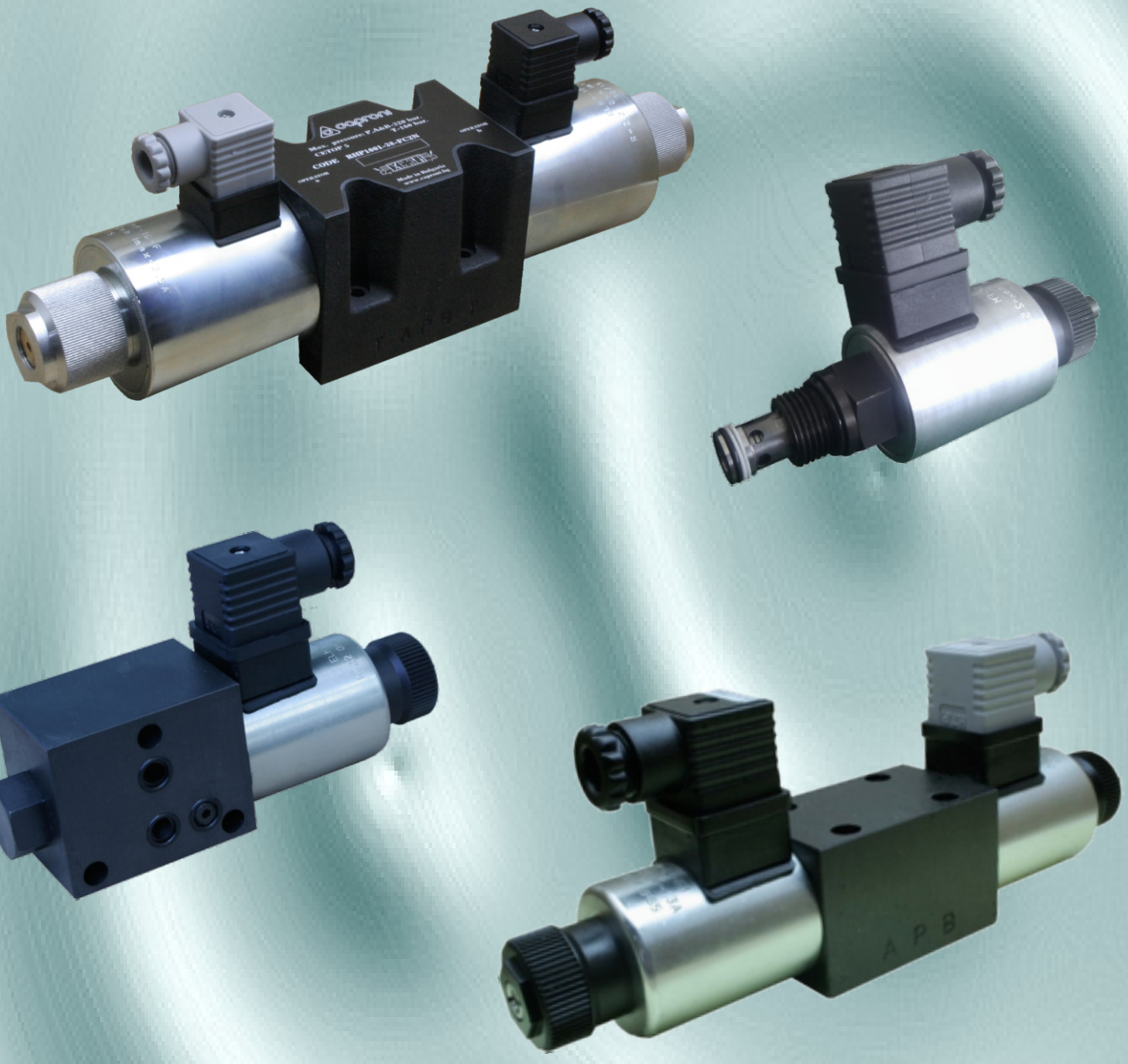
caproni



PROPORTIONAL VALVES

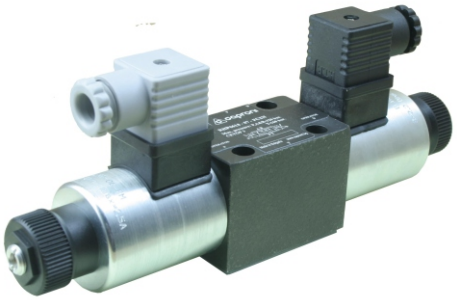
CONTENTS:

	Page
RHP06...	1/20...3/20
RHP10...	4/20...7/20
FRTP06...	8/20...10/20
RVP10...	11/20...12/20
RVPB06...	13/20...14/20
RVPB06P...	15/20...16/20
EDAR1211-1-25	17/20...18/20
EDAR1211-2-25	19/20...20/20

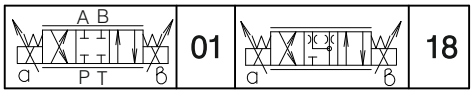
PROPORTIONAL DIRECTIONAL CONTROL VALVES WITHOUT FEEDBACK -CETOP 3

GENERAL DESCRIPTION

The RHP06...-07-F... valve is used to control the speed and direction of hydraulic actuators.



Symbol



- ✓ 4/3- way directional control valves with proportional solenoid operation without feedback
- ✓ Removable coils-quick replacement and rotation in any direction without leakage from the system
- ✓ Manual override option (push button)
- ✓ Mounting surface CETOP3 (NG6)

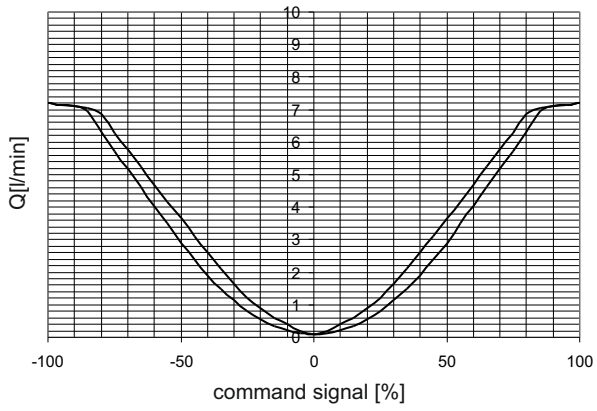
ORDERING CODE

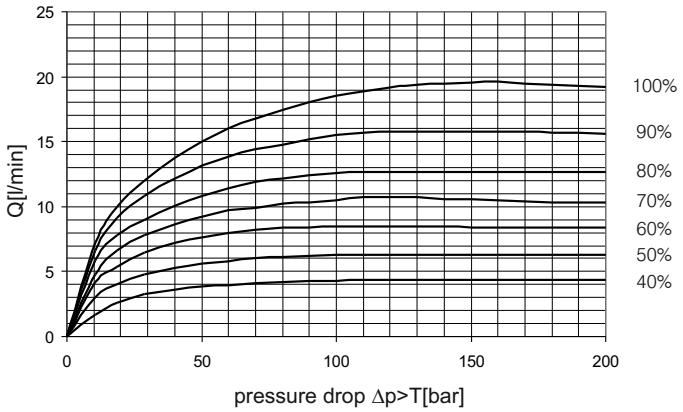
RHP | 06 | ... | - | 07 | - | F | ... | ...

- RHP — Proportional directional control valve
- 06 — Nominal size
- ... — Functional symbol: 01, 18
- 07 — Nominal flow: 7l/min
- F — Modification
- ... — Connectors:
  - C1 - without connectors
  - C2 - with connectors by DIN24650
  - C3 - with connectors by DIN24650 with light indicator
- ... — Climatic realization:
  - N - normal
  - T - tropical

CHARACTERISTICS

Measured at: PWM 170Hz. , $I_{max.}$=1,8A , $I_{min.}$=0,8A , t=45+5°C





PROPORTIONAL DIRECTIONAL CONTROL VALVES WITHOUT FEEDBACK -CETOP 3

TECHNICAL DATA

GENERAL

DATA	UNIT	VALUE/RANGE
Installation position		optional , preferably horizontal
Ambient temperature range	°C	-20...+50
Weight double solenoid valve	kg	2,200
Hysteresis	%	<6
Repeatability	%	±1,5

HYDRAULIC

Max. pressure port P , A & B port T	MPa MPa	32 16
Rated flow (at Δp 0,5MPa. per metering edge)	l/min	7
Hydraulic fluid-mineral oil: -viscosity -filtration degree to acc. ISO 4406 -temperature	 mm^2/s class °C	 10...400 18/16/13 -20...80

ELECTRICAL

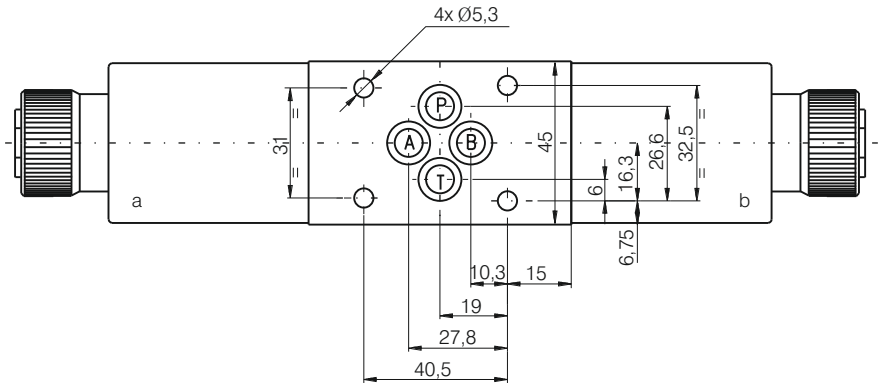
Cyclic duration	%	100
Waterproof		IP65
Heat insulation		H
Coil resistance cold warm	Ω	2,2 3
Max current	A	2,5

AMPLIFIER

EDAR 1211-2-25 - Order separately

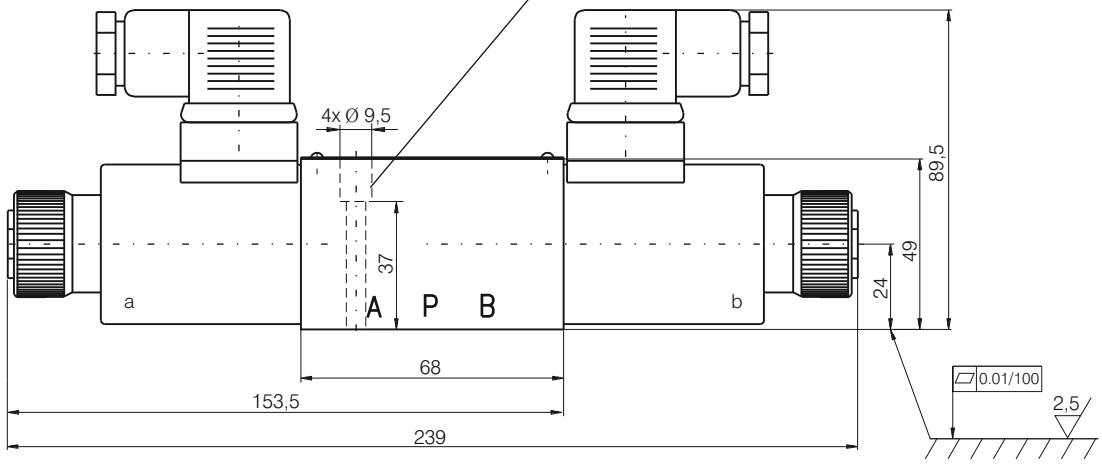
DIMENSIONS

All dimensions are shown in mm.



Gray or white plug connectors
for solenoid “a” , black connectors
for solenoid “b” and transparent
for solenoids with light indicator.

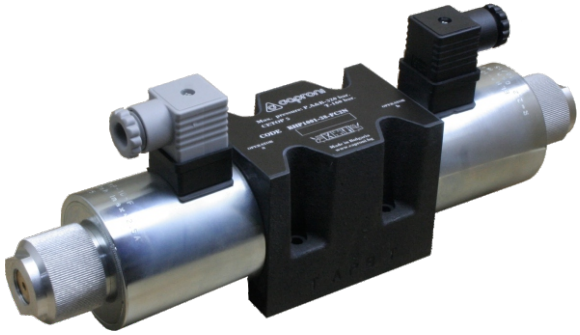
Standard fixing bolts M5x45
(10,9 class recommended).
Torque 6...8 Nm.



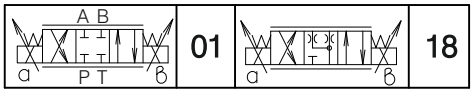
PROPORTIONAL DIRECTIONAL CONTROL VALVES WITHOUT FEEDBACK -CETOP 5

GENERAL DESCRIPTION

The RHP10...-...-F... valve is used to control the speed and direction of hydraulic actuators.



Symbol



- ✓ 4/3- way directional control valves with proportional solenoid operation without feedback
- ✓ Removable coils-quick replacement and rotation in any direction without leakage from the system
- ✓ Manual override option (push button)
- ✓ Mounting surface CETOP5 (NG10)

ORDERING CODE

RHP | 10 | ... | - | ... | - | F | ... | ...

Proportional directional control valve

Nominal size

Functional symbol: **01** **18**

Nominal flow: 38l/min - **38**, 54l/min - **54**

Climatic realization:
N - normal
T - tropical

Connectors:
C1 - without connectors
C2 - with connectors by DIN24650
C3 - with connectors by DIN24650 with light indicator

Modification

PROPORTIONAL DIRECTIONAL CONTROL VALVES WITHOUT FEEDBACK -CETOP 5

TECHNICAL DATA

GENERAL

DATA	UNIT	VALUE/RANGE
Installation position		optional , preferably horizontal
Ambient temperature range	°C	-20...+50
Weight double solenoid valve	kg	6,700
Hysteresis	%	<6
Repeatability	%	±1,5

HYDRAULIC

Max. pressure	port P , A & B port T	MPa MPa	32 16
Rated flow (at Δp 0,5MPa. per metering edge)		l/min	38/54
Hydraulic fluid-mineral oil: -viscosity -filtration degree to acc. ISO 4406 -temperature		mm^2/s class °C	 10...400 18/16/13 -20...80

ELECTRICAL

Cyclic duration		%	100
Waterproof			IP65
Heat insulation			H
Coil resistance	cold warm	Ω	2,2 3
Max current		A	2,5

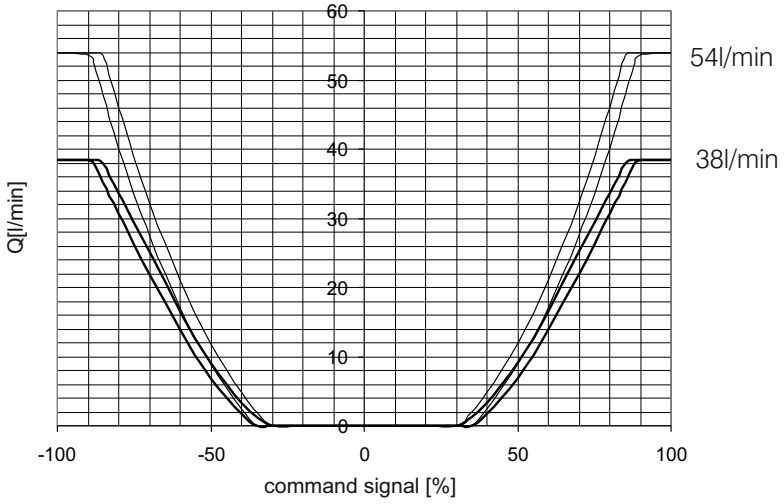
AMPLIFIER

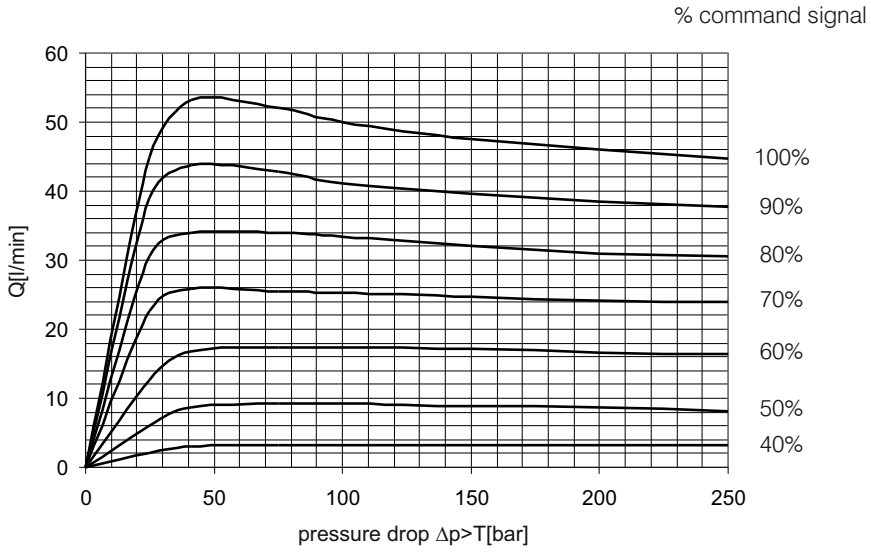
EDAR 1211-2-25 - Order separately

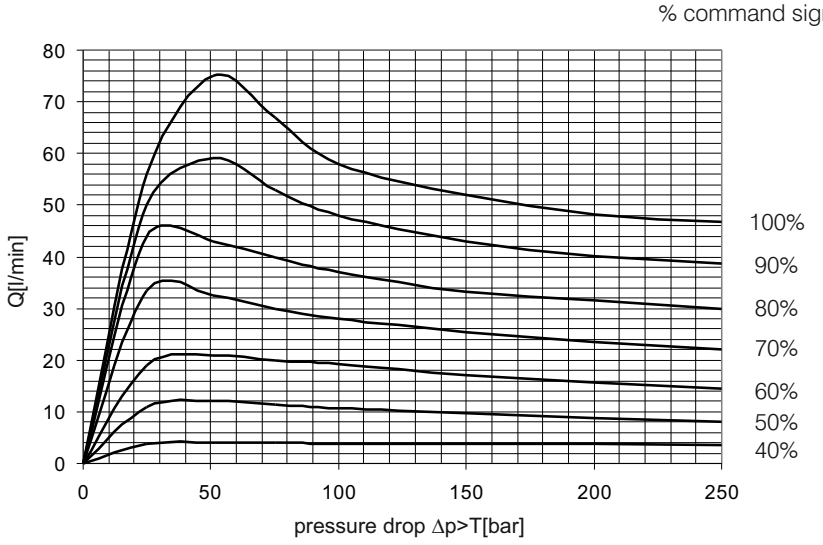
These digital amplifier EDAR 1211-2-25 is designed to control direct operated proportional directional control valves without feedback - see “List: EDAR1211-2-25” and “OI:EDAR1211-...”.

CHARACTERISTICS

Measured at: PWM 100Hz. , $I_{max.}$=2,5A , $I_{min.}$=0A , t=45+5°C

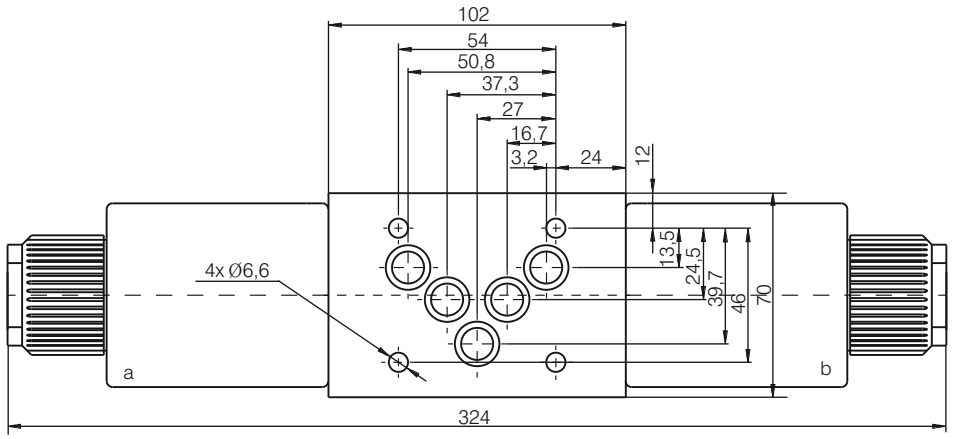






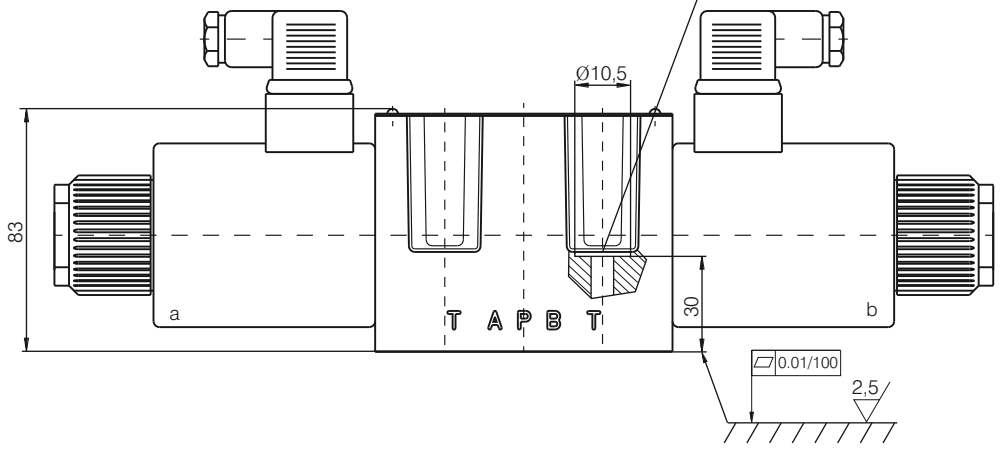
DIMENSIONS

All dimensions are shown in mm.



Gray or white plug connectors
for solenoid “a” , black connectors
for solenoid “b” and transparent
for solenoids with light indicator.

Standard fixing bolts M6x40
(10,9 class recommended).
Torque 11...14 Nm.

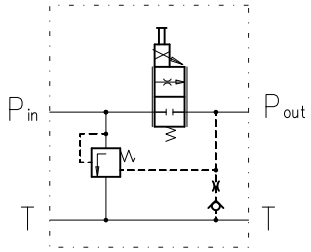


PROPORTIONAL FLOW REGULATOR 3-WAY STACKABLE WITHOUT FEEDBACK

GENERAL DESCRIPTION

The FRTP06... valve is used to control the speed of hydraulic actuators. This valve is designed for assembling with other valves for stackable control blocks.

Symbol



- ✓ 3- way flow regulator with proportional solenoid operation without feedback
- ✓ Removable coils-quick replacement and rotation in any direction without leakage from the system
- ✓ Manual override option (push button)

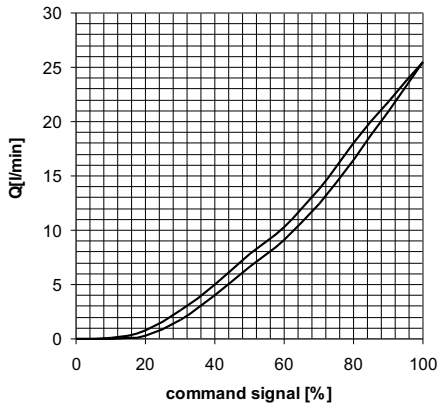
ORDERING CODE

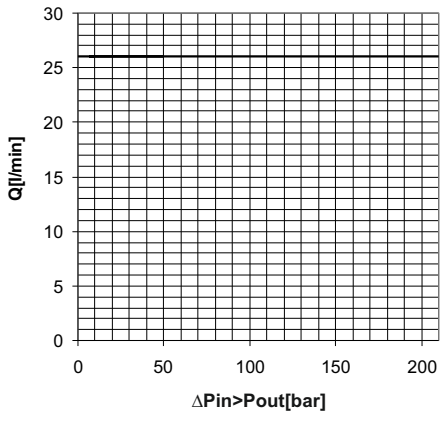
FRTP | 06 | - | 25 | - | GF | ... | ...

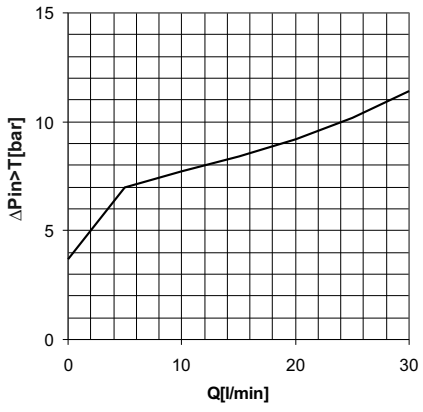
- FRTP — Proportional flow regulator
- 06 — Nominal size
- 25 — Nominal flow: 25l/min
- GF... — Modification
- ... — Climatic realization:
  - **N** - normal
  - **T** - tropical
- ... — Connector:
  - **C1** - without connector
  - **C2** - with connector by DIN24650
  - **C3** - with connector by DIN24650 with light indicator

CHARACTERISTICS

Measured at: PWM 120Hz. , $I_{max.}$=2,5A , $I_{min.}$=1A , t=45°C







PROPORTIONAL FLOW REGULATOR 3-WAY STACKABLE WITHOUT FEEDBACK

TECHNICAL DATA

GENERAL

DATA	UNIT	VALUE/RANGE
Installation position		optional , preferably horizontal
Ambient temperature range	°C	-20...+50
Weight	kg	1,600
Hysteresis	%	<6
Repeatability	%	±1,5

HYDRAULIC

Max. operating pressure	MPa	21
Regulated flow Max. inlet flow	l/min	25 40
Hydraulic fluid-mineral oil: -viscosity -filtration degree to acc. ISO 4406 -temperature	 mm^2/s class °C	 10...400 18/16/13 -20...80

ELECTRICAL

Cyclic duration	%	100
Waterproof		IP65
Heat insulation		H
Coil resistance cold warm	Ω	2,2 3
Max current	A	2,5

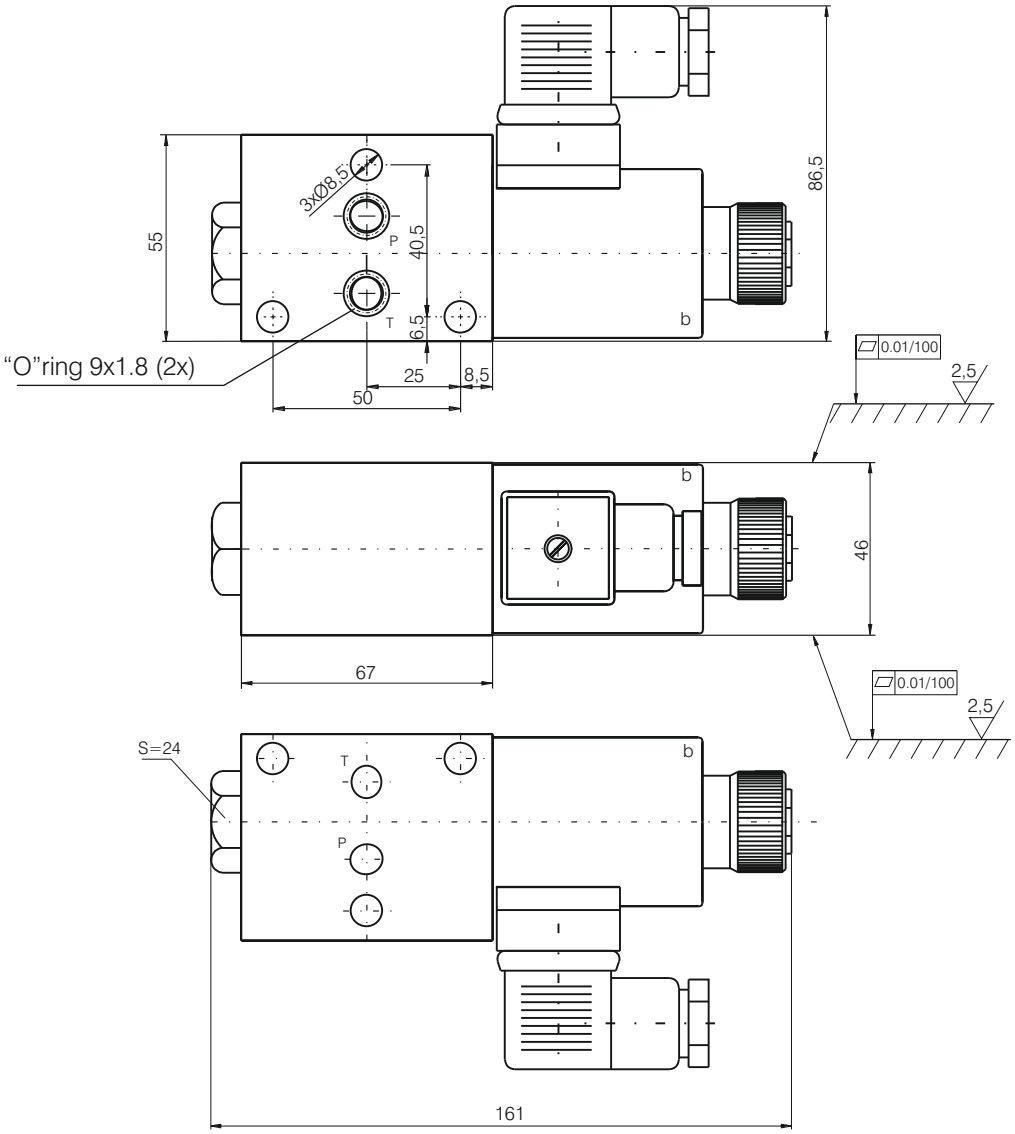
AMPLIFIER

EDAR 1211-1 -25 Order separately

PROPORTIONAL FLOW REGULATOR 3-WAY STACKABLE WITHOUT FEEDBACK

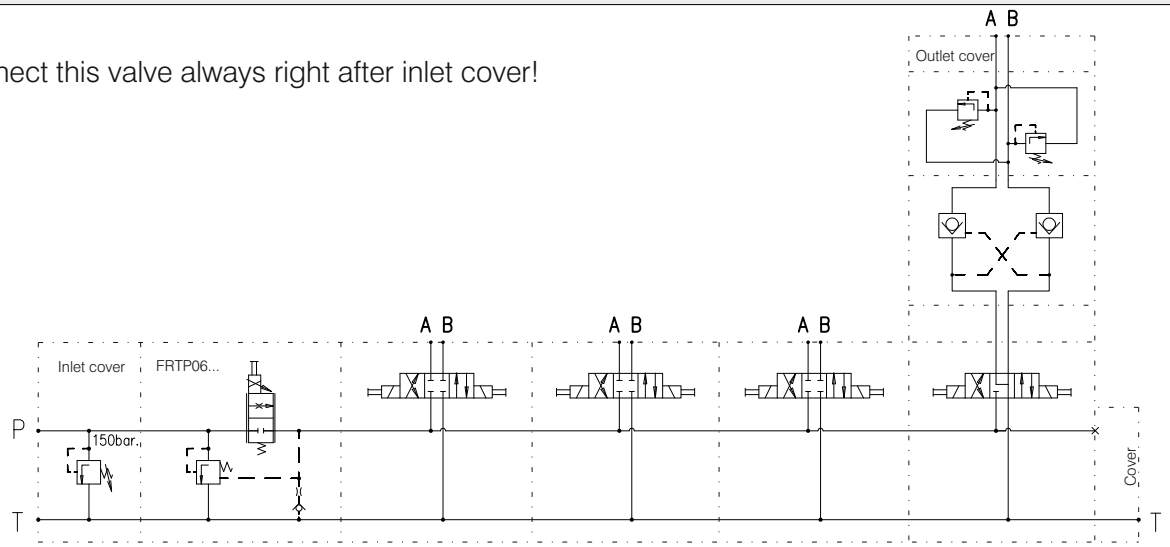
DIMENSIONS

All dimensions are shown in mm.



HOW TO CONNECT

Connect this valve always right after inlet cover!

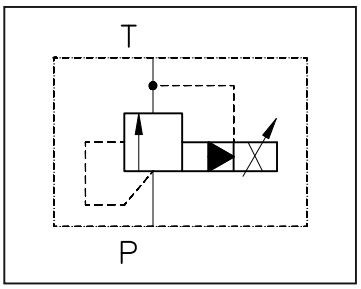


PROPORTIONAL PILOT OPERATED PRESSURE RELIEF VALVE

GENERAL DESCRIPTION

The RVP10... valve is designed to limit the pressure in a hydraulic system in proportion to the applied electrical input. The valve is normally open , cartridge type and increases the system pressure by increasing control input signal.

Symbol



- ✓ Removable coils for quick replacement and rotation in any direction without leakage from the system
- ✓ Standard industrial common cavity CC10-2 - see “Cavities and bodies” brochure
- ✓ External electronics

ORDERING CODE

RVP | 10 | - | ... | - | F | ... | ...

Proportional pressure relief valve

Nominal size

Max. regulating pressure:
up to 350bar - **350**
up to 205bar - **205**

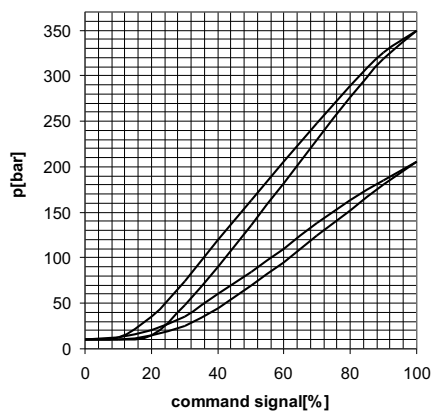
Climatic realization:
N - normal
T - tropical

Connector:
C1 - without connector
C2 - with connector by DIN24650
C3 - with connector by DIN24650 with light indicator

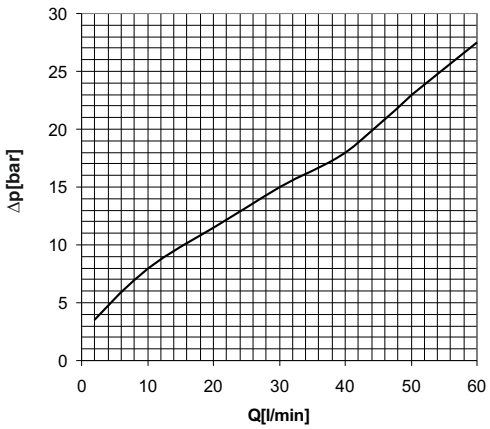
Modification

CHARACTERISTICS

Measured at: PWM 150Hz. , $I_{max.}$=1,6A , $I_{min.}$=0A , Q_{in}=10l/min , t=45°C



Measured at: t=45°C , without command signal



PROPORTIONAL PILOT OPERATED PRESSURE RELIEF VALVE

TECHNICAL DATA

GENERAL

DATA	UNIT	VALUE/RANGE
Installation position		optional , preferably horizontal
Ambient temperature range	°C	-20...+50
Weight	kg	0,700
Hysteresis	%	<8
Repeatability	%	±1,5

HYDRAULIC

Max. operating pressure	MPa	35
Max. inlet flow	l/min	60
Hydraulic fluid-mineral oil: -viscosity -filtration degree to acc. ISO 4406 -temperature	 mm^2/s class °C	 10...400 18/16/13 -20...80

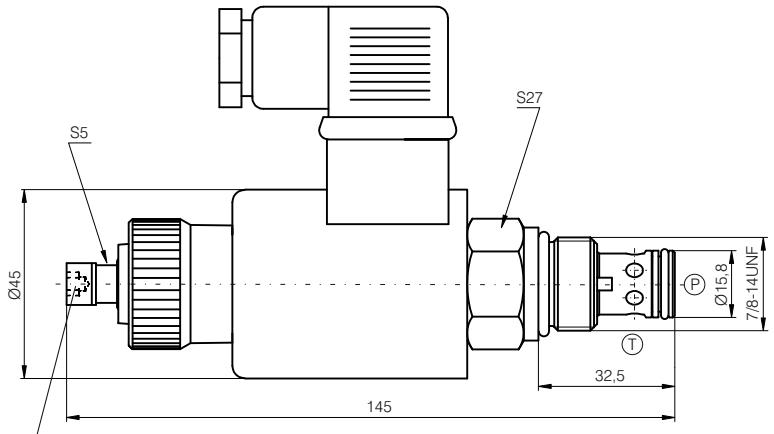
ELECTRICAL

Cyclic duration	%	100
Waterproof		IP65
Heat insulation		H
Coil resistance cold warm	Ω	2,2 3
Max. coil current	A	2,5

AMPLIFIER

EDAR 1211-1-25 - Order separately

DIMENSIONS



Unscrew partially for air bleeding then screw to stop

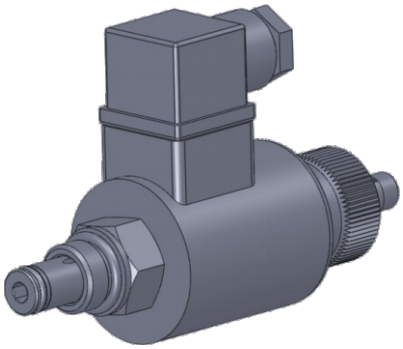
All dimensions are shown in mm.

Air bleeding is obligatory for best performance characteristics.

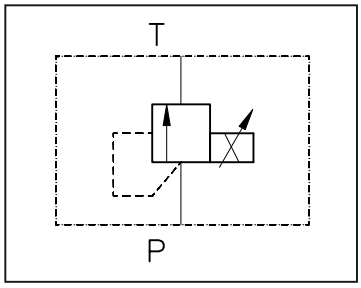
PROPORTIONAL DIRECT OPERATED PRESSURE RELIEF VALVE

GENERAL DESCRIPTION

The RVPB06... valve is designed to limit the pressure in a hydraulic system in proportion to the applied electrical input. The valve is normally open , cartridge type and increases the system pressure by increasing control input signal.



Symbol



- ✓ Removable coils for quick replacement and rotation in any direction without leakage from the system
- ✓ Standard industrial common cavity CC06-2 - see “Cavities and bodies” brochure
- ✓ External electronics

ORDERING CODE

RVPB	06	-	…	-	F	…	…

Proportional pressure relief valve

Nominal size

Max. regulating pressure:
up to 350bar - **350**
up to 250bar - **250**

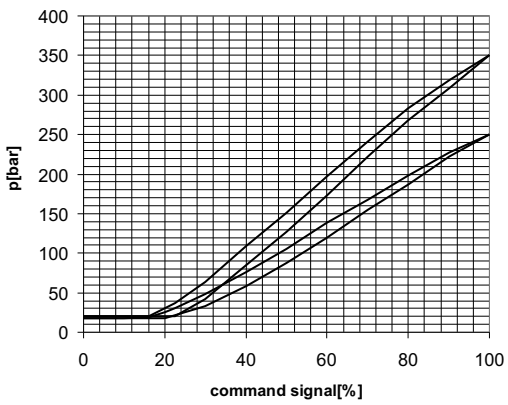
Climatic realization:
N - normal
T - tropical

Connector:
C1 - without connector
C2 - with connector by DIN24650
C3 - with connector by DIN24650 with light indicator

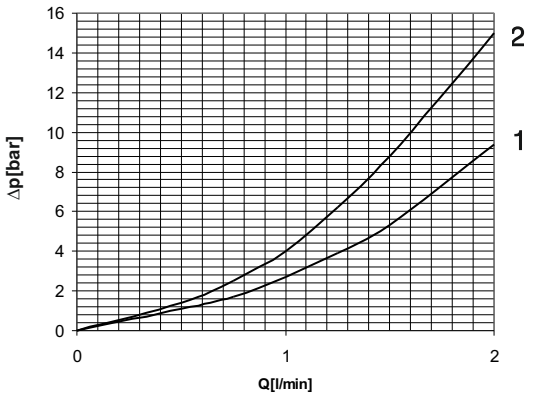
Modification

CHARACTERISTICS

Measured at: PWM 150Hz. , $I_{max.}$=2A , $I_{min.}$=0A , Q_{in}=1,5l/min , t=45°C



Measured at: t=45°C , without command signal
1 - RVPB06-250... ; **2** - RVPB06-350...



PROPORTIONAL DIRECT OPERATED PRESSURE RELIEF VALVE

TECHNICAL DATA

GENERAL

DATA	UNIT	VALUE/RANGE
Installation position		optional , preferably horizontal
Ambient temperature range	°C	-20...+50
Weight	kg	0,600
Hysteresis	%	<8
Repeatability	%	±1,5

HYDRAULIC

Max. operating pressure	MPa	35
Max. inlet flow	l/min	2
Hydraulic fluid-mineral oil: -viscosity -filtration degree to acc. ISO 4406 -temperature	 mm^2/s class °C	 10...400 18/16/13 -20...80

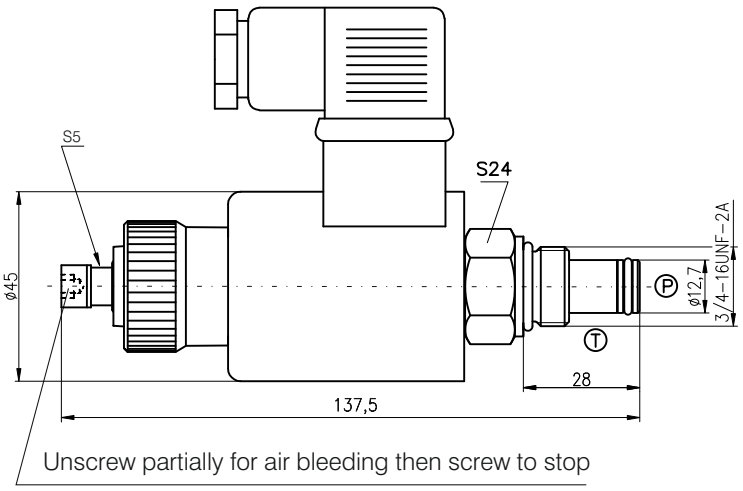
ELECTRICAL

Cyclic duration	%	100
Waterproof		IP65
Heat insulation		H
Coil resistance cold warm	Ω	2,2 3
Max. coil current	A	2,5

AMPLIFIER

EDAR 1211-1-25 - Order separately

DIMENSIONS



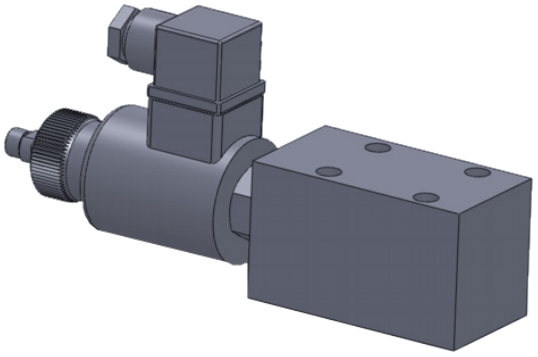
All dimensions are shown in mm.

Air bleeding is obligatory for best performance characteristics.

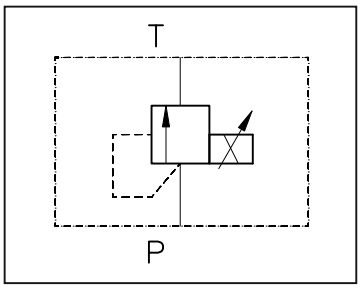
PROPORTIONAL DIRECT OPERATED PRESSURE RELIEF VALVE

GENERAL DESCRIPTION

The RVPB06P... valve is designed to limit the pressure in a hydraulic system in proportion to the applied electrical input. The valve is normally open , for plate mounting and increases the system pressure by increasing control input signal.



Symbol



- ✓ Removable coils for quick replacement and rotation in any direction without leakage from the system
- ✓ Plate mounting connection CETOP3
- ✓ External electronics

ORDERING CODE

RVPB | 06 | P | - | ... | - | F | ... | ...

Proportional pressure relief valve

Nominal size

For plate mounting

Max. regulating pressure:
up to 350bar - **350**
up to 250bar - **250**

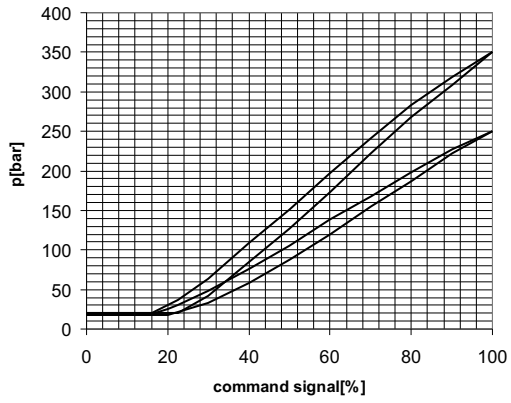
Climatic realization:
N - normal
T - tropical

Connector:
C1 - without connector
C2 - with connector by DIN24650
C3 - with connector by DIN24650 with light indicator

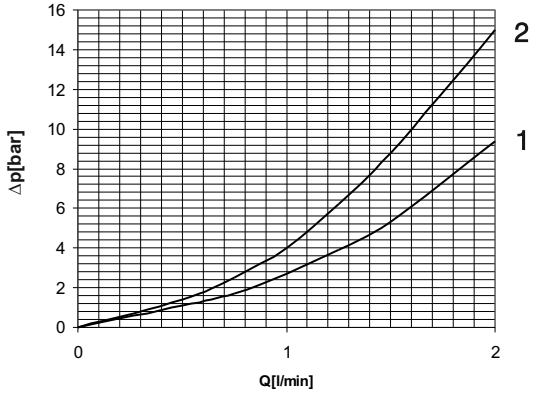
Modification

CHARACTERISTICS

Measured at: PWM 150Hz. , $I_{max.}$=2A , $I_{min.}$=0A , Q_{in}=1,5l/min , t=45°C



Measured at: t=45°C , without command signal
1 - RVPB06P-250... ; **2** - RVPB06P-350...



PROPORTIONAL DIRECT OPERATED PRESSURE RELIEF VALVE

TECHNICAL DATA

GENERAL

DATA	UNIT	VALUE/RANGE
Installation position		optional , preferably horizontal
Ambient temperature range	°C	-20...+50
Weight	kg	1,600
Hysteresis	%	<8
Repeatability	%	±1,5

HYDRAULIC

Max. operating pressure	MPa	35
Max. inlet flow	l/min	2
Hydraulic fluid-mineral oil: -viscosity -filtration degree to acc. ISO 4406 -temperature	 mm^2/s class °C	 10...400 18/16/13 -20...80

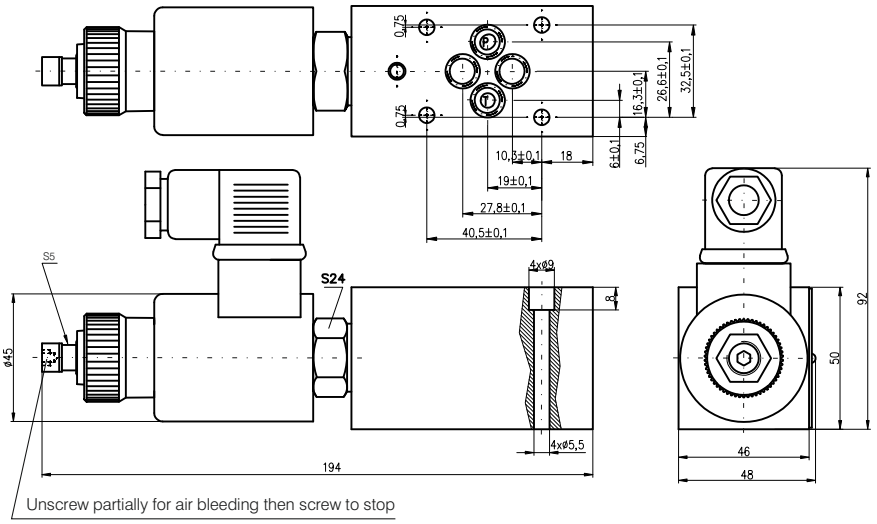
ELECTRICAL

Cyclic duration	%	100
Waterproof		IP65
Heat insulation		H
Coil resistance cold warm	Ω	2,2 3
Max. coil current	A	2,5

AMPLIFIER

EDAR 1211-1-25 - Order separately

DIMENSIONS



All dimensions are shown in mm.

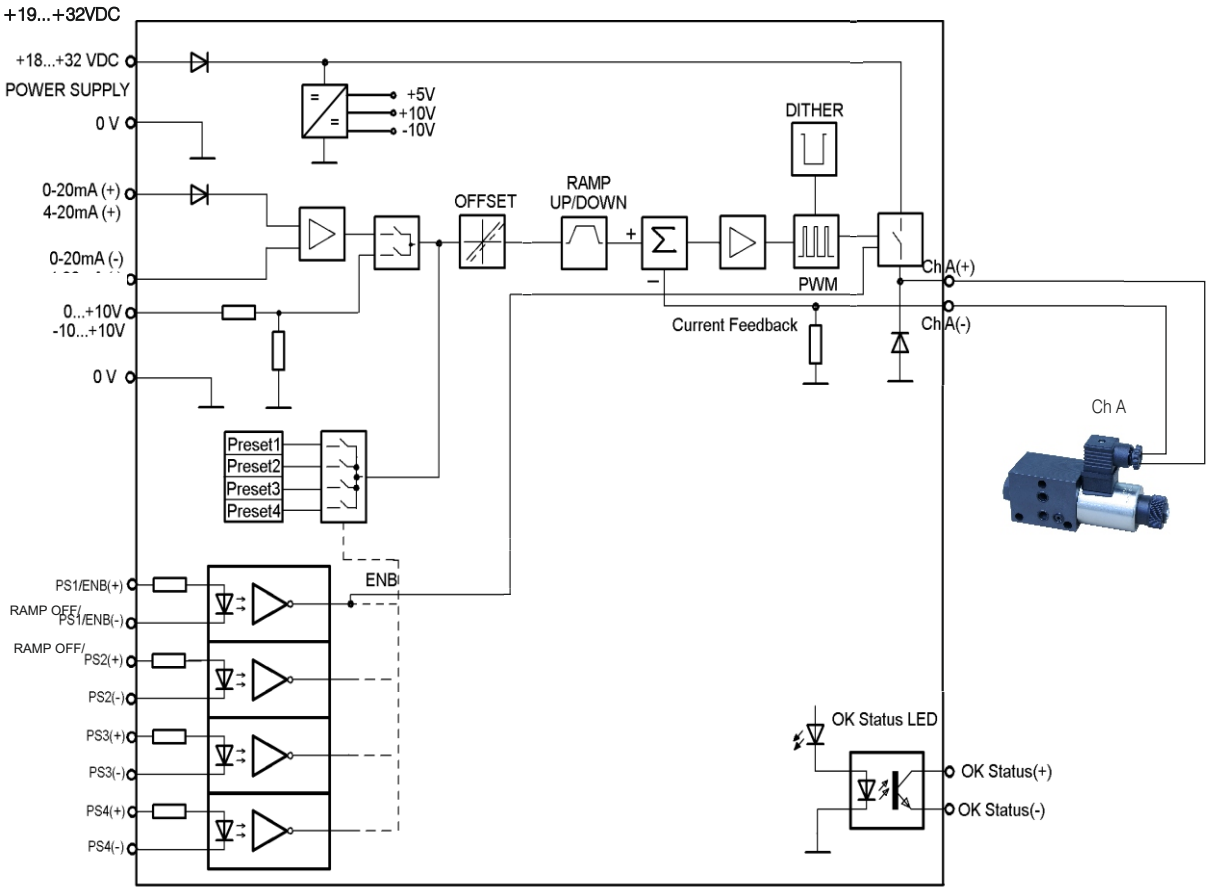
Air bleeding is obligatory for best performance characteristics.

DIGITAL AMPLIFIER FOR PROPORTIONAL VALVES WITHOUT FEEDBACK

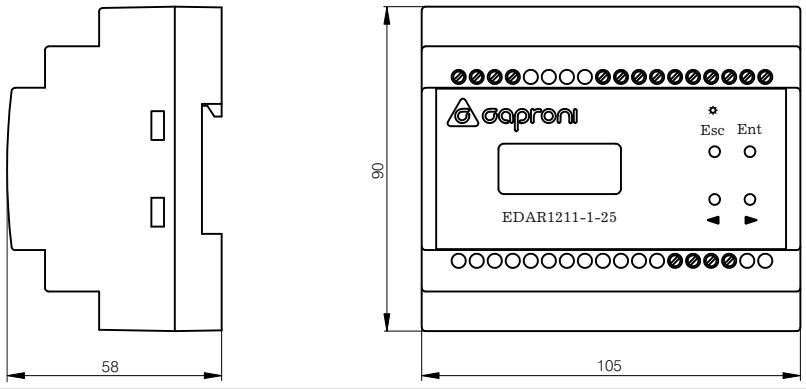
GENERAL DESCRIPTION

This digital amplifier EDAR 1211-1-25 is designed to control direct operated proportional directional control valves and proportional flow regulators with one solenoid without feedback.
There are few adjustments for base parameters:
-Imax. to control the maximum current to the solenoid
-Imin. to correct the positive overlap (dead band elimination)
-Ramps to set increasing/decreasing time on channel “a”
-PWM to regulate hysteresis and stability (accuracy) of the valve -
high frequency - high accuracy , high hysteresys
low frequency - low accuracy , low hysteresys.
The adjustment sets realized by 4 push buttons on the front cover.
The amplifier is designed for rail mounting type DIN EN 50022.

BLOCK DIAGRAM



DIMENSIONS



DIGITAL AMPLIFIER FOR PROPORTIONAL VALVES WITHOUT FEEDBACK

TECHNICAL DATA

GENERAL

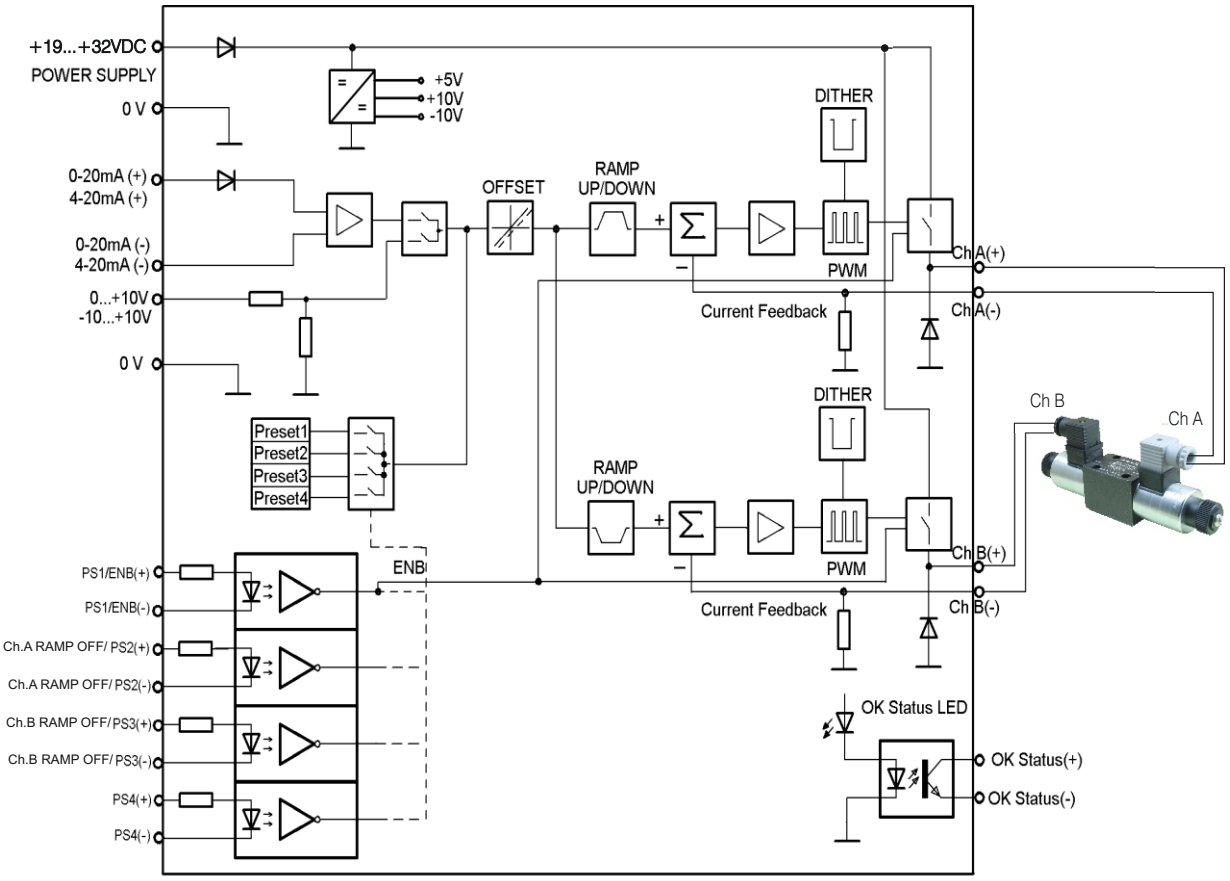
DATA	UNIT	VALUE/RANGE
Power supply	V DC	24 (19...32)
Max. power consumption	W	35
Max. output current	A	2,7
Power supply polarity protection		
Output short-circuit protection		
Available reference signals	V	0...+10
	mA	0...20 4...20
		4 preset values selected by 4 discrete inputs
Ramps		Two ramps according to rising and falling reference signal
Ramps (duration)	sec	0,01...9,99
Opto isulated output signal - “OK”	mA V DC	$I_{max.}$=50 $U_{max.}$=35
Opto isulated input signal - “ENABLE”	V DC	24
4 opto isulated input signal for preset values selection	V DC	24
PWM frequency	Hz	80...500
Reference signal offset correction	%	-9,99...+9,99
Mounting		Rail type DIN EN 50022
Ambient temperature	°C	0...50
Storage temperature	°C	-20...+50
Dimensions	mm	105x90x60

DIGITAL AMPLIFIER FOR PROPORTIONAL VALVES WITHOUT FEEDBACK

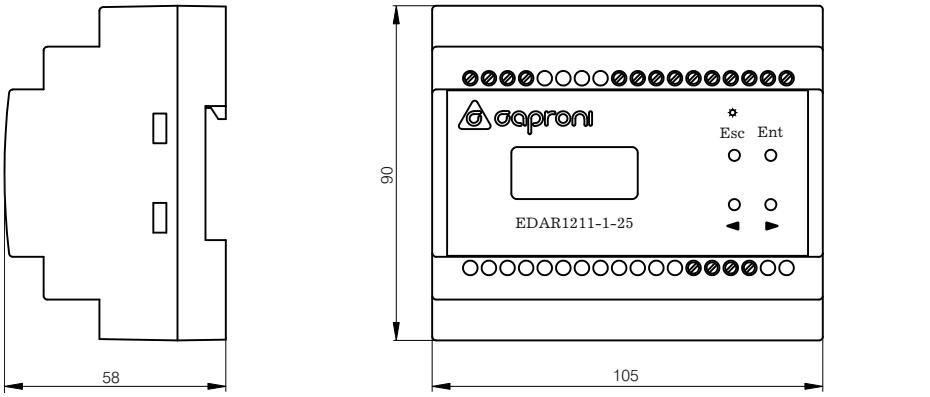
GENERAL DESCRIPTION

This digital amplifier EDAR 1211-2-25 is designed to control direct operated proportional directional control valves with two solenoids without feedback.
There are few adjustments for base parameters:
-Imax. to control the maximum current to the solenoid
-Imin. to correct the positive overlap (dead band elimination)
-Ramps to set increasing/decreasing time on channels “a” or “b”
-PWM to regulate hysteresis and stability (accuracy) of the valve -
high frequency - high accuracy , high hysteresys
low frequency - low accuracy , low hysteresys.
The adjustment sets realized by 4 push buttons on the front cover.
The amplifier is designed for rail mounting type DIN EN 50022.

BLOCK DIAGRAM



DIMENSIONS

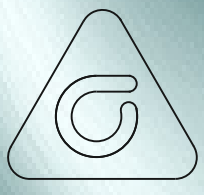


DIGITAL AMPLIFIER FOR PROPORTIONAL VALVES WITHOUT FEEDBACK

TECHNICAL DATA

GENERAL

DATA	UNIT	VALUE/RANGE
Power supply	V DC	24 (19...32)
Max. power consumption	W	35
Max. output current	A	2,7
Power supply polarity protection		
Output short-circuit protection		
Available reference signals	V	0...+10 -10...+10
	mA	0...20 4...20
		4 preset values selected by 4 discrete inputs
Ramps		Two ramps for each direction according to rising and falling reference signal
Ramps (duration)	sec	0,01...9,99
Opto isulated output signal - “OK”	mA V DC	$I_{max.}$=50 $U_{max.}$=35
Opto isulated input signal - “ENABLE”	V DC	24
4 opto isulated input signal for preset values selection	V DC	24
PWM frequency	Hz	80...500
Reference signal offset correction	%	-9,99...+9,99
Mounting		Rail type DIN EN 50022
Ambient temperature	°C	0...50
Storage temperature	°C	-20...+50
Dimensions	mm	105x90x60



caproni

BULGARIA JOINT-STOCK COMPANY

BULGARIA , 6100 KAZANLAK , 45 STOLETOV STR.
TEL.:+359/431/62 229 , +359/431/6132 ,
FAX:+359/431/62 230 , +359/431/63 134
E-MAIL:CAPRONI@CAPRONI.BG , WEB:HTTP://WWW.CAPRONI.BG