



Proportional Cartridges

Section 16

SECTION 16



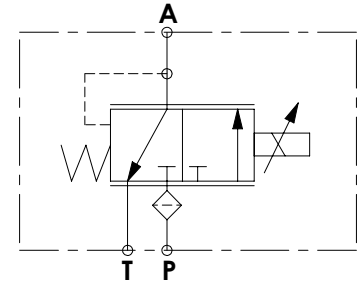
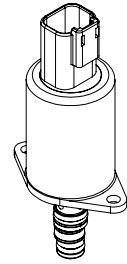
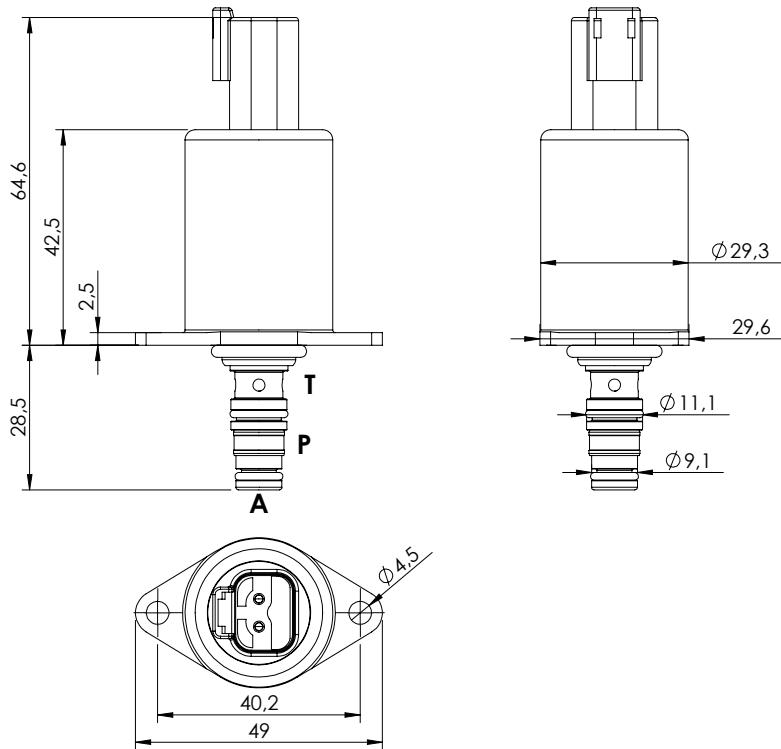
PROPORTIONAL CARTRIDGES

| Hydraulic scheme | Valve description | Valve type | Rated flow (l/min) | Max. pressure (bar) | Installation | Main port size or cavity type | Page |
|------------------|-------------------|--|--------------------|---------------------|--------------|-------------------------------|-----------|
| | CECS-005-PRPN | Proportional, direct operated, pressure reducing | 5 | 50 | DT04-2P | VP000371 | 16.01.010 |
| | CECT-080-PRPS | Proportional, pilot operated, reducing and relieving | 80 | 250 | Cartridge | SAE-10-3N | 16.02.020 |
| | CEBD-005-PLPS | Proportional, poppet type relief | 5 | 350 | Cartridge | SAE-08-2N | 16.03.030 |
| | CEBT-120-PLPS | Proportional, pilot operated, relieving | 120 | 350 | Cartridge | SAE-10-2N | 16.04.040 |
| | CEBT-120-PMPS | Proportional, pilot operated, relieving, for fan drive | 120 | 350 | Cartridge | SAE-10-2N | 16.04.050 |
| | CEBT-300-PLPS | Proportional, pilot operated, relieving | 300 | 350 | Cartridge | SAE-16-2N | 16.04.060 |
| | CEBT-500-PLPS | Proportional, pilot operated, relieving | 500 | 350 | Cartridge | SAE-20-2N | 16.04.070 |
| | CECS-020-FSPS | Proportional, non compensated, flow regulator | 20 | 210 | Cartridge | SAE-10-3N | 16.05.080 |
| | CECS-030-FSPS | Proportional, non compensated, flow regulator | 30 | 210 | Cartridge | SAE-10-3N | 16.05.080 |
| | CECS-040-FSPS | Proportional, non compensated, flow regulator | 40 | 210 | Cartridge | SAE-10-3N | 16.05.080 |
| | CECS-140-FRPV | Proportional, direct operated, flow regulator | 140 | 320 | Cartridge | SAE-16-3N | 16.06.090 |
| | CEBP-070-NCPN | Proportional, non compensated, normally closed | 30 | 350 | Cartridge | VP000057 | 10.07.100 |
| | CEBS-020-PEPS | Proportional, normally closed | 20 | 210 | Cartridge | SAE-08-2N | 10.08.110 |
| | ELPC-030-SCCB | Proportional electronic controller | - | - | DIN 43650 | - | 10.09.120 |

SOLENOID OPERATED CARTRIDGE

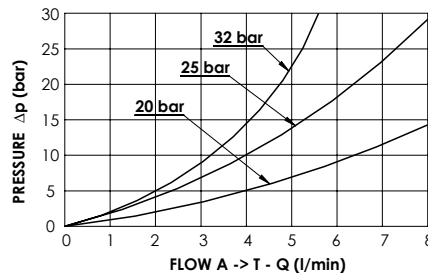
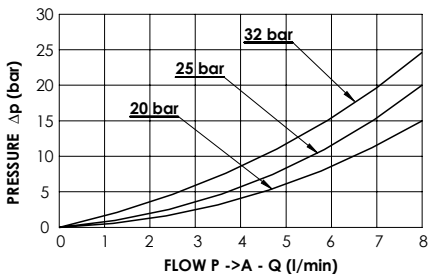
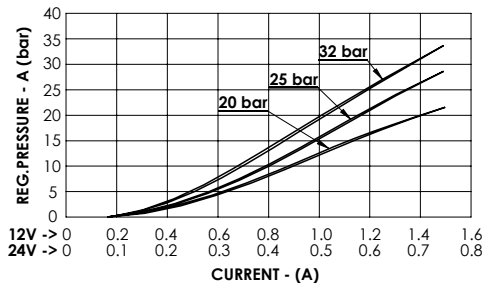
CECS-005-PRPN

**PROPORTIONAL VALVES
DIRECT OPERATED
PRESSURE REDUCING**



SPECIFICATIONS

| | |
|-----------------------------|------------------------------|
| Max. P pressure: | 50 bar |
| Max. T pressure: | 30 bar |
| Rated flow: | 5 l/min |
| Cavity: | VP000371 |
| Weight: | 0.3 kg |
| Connector type: | Deutsch DT04-2P |
| Internal leakage: | 15 cc/min (@ 25 bar, 46 cSt) |
| Protection class: | Up to IP6K6 / IPX9K |
| PWM range recommended: | 100 Hz |
| Filter on P port: | 125 µm |
| Mounting screw: | 2 x M4x10 class 8.8 |
| Mounting screw torque: | 3.5 Nm |
| Mounting screw not included | |
| Seal kit: | RC700371 |



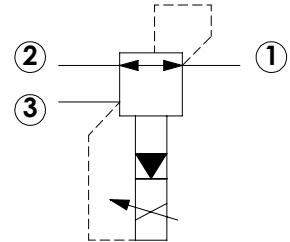
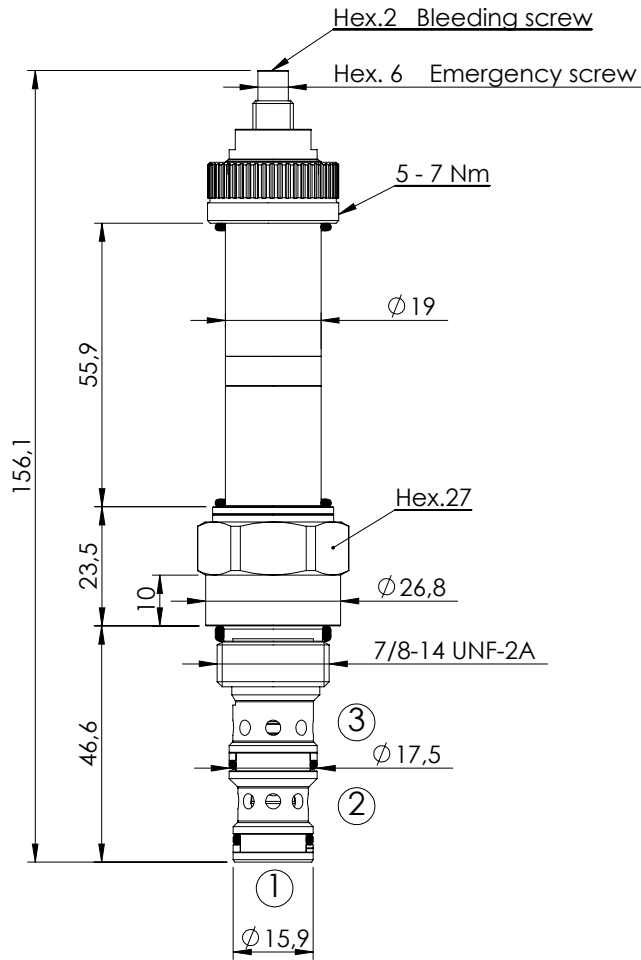
ORDERING CODES

| Quick code | Description | Regulated pressure range (bar) | Voltage (V) | Current (mA) | Resistance (Ω) ± 5% | Hysteresis (bar) pA |
|------------|--------------------------------|--------------------------------|-------------|--------------|---------------------|---------------------|
| CE000850 | CECS-005-PRPN-95-371-N020-12DT | 0-20 | 12 | 1500 | 4.72 | < 0.4 |
| CE000851 | CECS-005-PRPN-95-371-N020-24DT | 0-20 | 24 | 750 | 20.8 | < 0.4 |
| CE000852 | CECS-005-PRPN-95-371-N025-12DT | 0-25 | 12 | 1500 | 4.72 | < 0.5 |
| CE000853 | CECS-005-PRPN-95-371-N025-24DT | 0-25 | 24 | 750 | 20.8 | < 0.5 |
| CE000893 | CECS-005-PRPN-95-371-N032-12DT | 0-32 | 12 | 1500 | 4.72 | < 0.7 |
| CE000862 | CECS-005-PRPN-95-371-N032-24DT | 0-32 | 24 | 750 | 20.8 | < 0.7 |

SOLENOID OPERATED CARTRIDGE

CECT-080-PRPS

**PROPORTIONAL VALVES
PILOTED OPERATED PRESSURE
REDUCING AND RELIEVING**

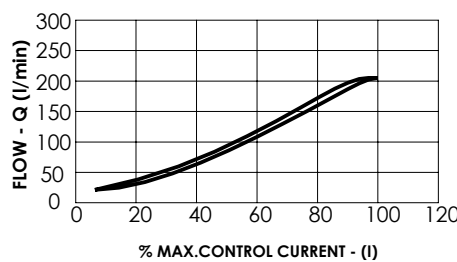
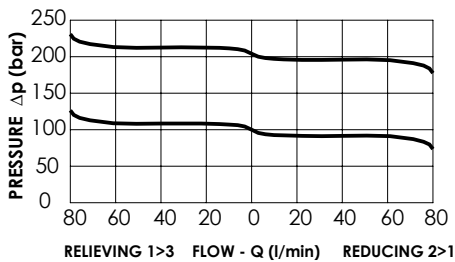


SPECIFICATIONS

| | |
|--------------------------|------------|
| Max. operating pressure: | 250 bar |
| Rated flow: | 80 l/min |
| Cavity: | SAE-10-3N |
| Weight: | 0,22 kg |
| Coil type: | M15 type |
| Installation torque: | 55 - 62 Nm |
| PWM range recommended: | 120-150 Hz |
| Seal kit: | RA100092 |

NOTES

Bleed air before use



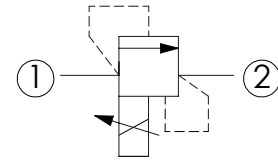
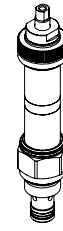
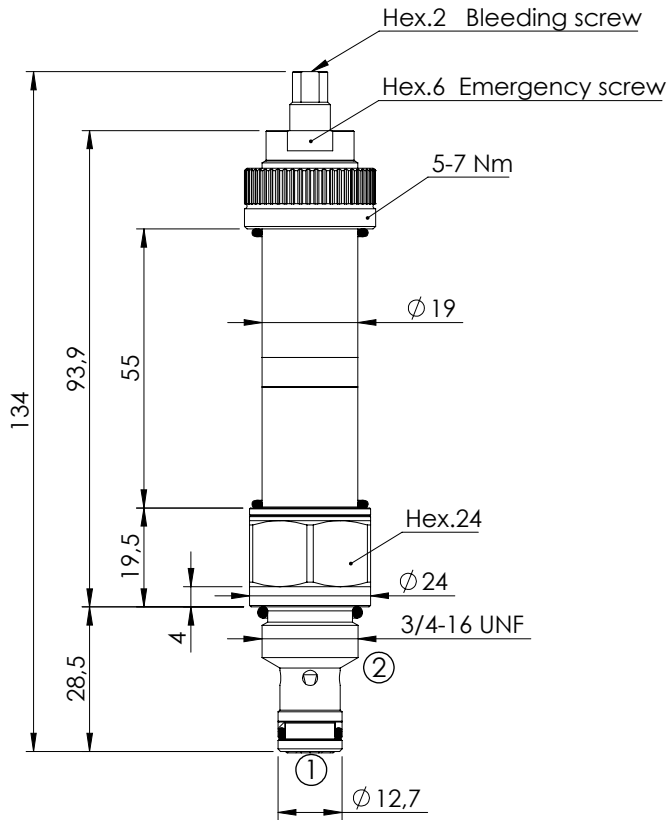
ORDERING CODES

| Quick code | Description | Regulated pressure range (bar) | Threshold current (with 12VDC coil) | Max control current (with 12V DC coil) | Override |
|------------|---------------------------|--------------------------------|-------------------------------------|--|-------------|
| CE000122 | CECT-080-PRPS-96-S10-V210 | 20-220 | 200 mA (+/-7%) | 1700 mA (+/-7%) | Screw style |
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SOLENOID OPERATED CARTRIDGE

CEBD-005-PLPS

**PROPORTIONAL VALVES
POPPET TYPE RELIEF**

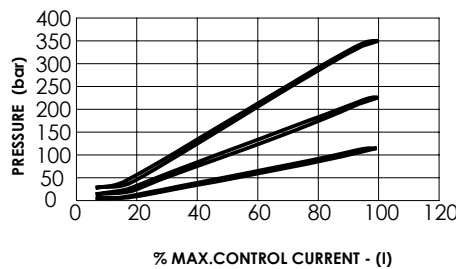
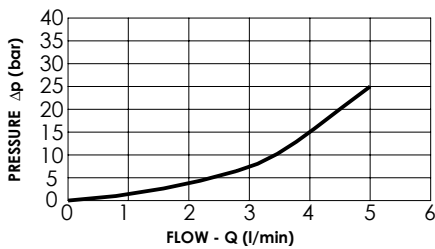


SPECIFICATIONS

| | |
|--------------------------|------------|
| Max. operating pressure: | 350 bar |
| Rated flow: | 5 l/min |
| Cavity: | SAE-08-2N |
| Weight: | 0,16 kg |
| Coil type: | M15 type |
| PWM range recommended: | 120-150 Hz |
| Installation torque: | 45 - 50 Nm |
| Seal kit: | RA100081 |

NOTES

Bleed air before use



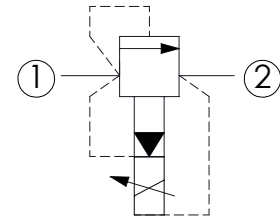
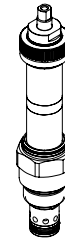
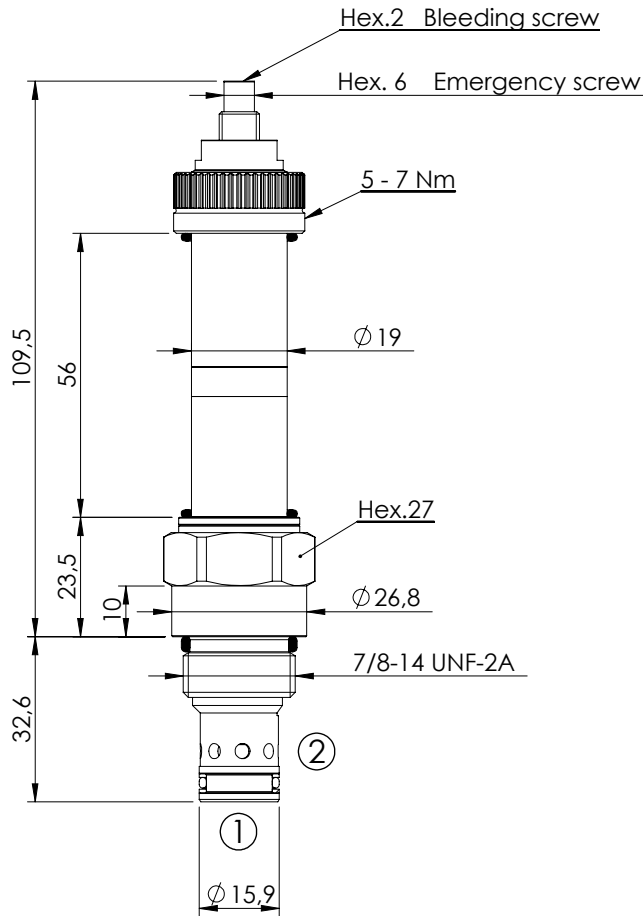
ORDERING CODES

| Quick code | Description | Setting range (bar) | Threshold current (with 12VDC coil) | Max control current (with 12V DC coil) | Override |
|------------|---------------------------|---------------------|-------------------------------------|--|-------------|
| CE000910 | CEBD-005-PLPS-92-S08-V350 | 30-350 | 250 mA (+/-7%) | 1800 mA (+/-7%) | Screw style |
| CE000911 | CEBD-005-PLPS-92-S08-V200 | 20-220 | 200 mA (+/-7%) | 1700 mA (+/-7%) | Screw style |
| CE000912 | CEBD-005-PLPS-92-S08-V100 | 10-120 | 200 mA (+/-7%) | 1600 mA (+/-7%) | Screw style |
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SOLENOID OPERATED CARTRIDGE

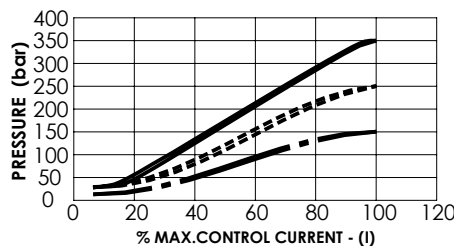
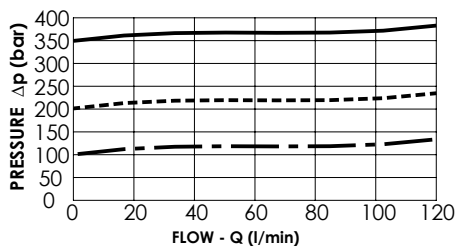
CEBT-120-PLPS

**PROPORTIONAL VALVES
PILOTED RELIEF
SPOOL TYPE**



SPECIFICATIONS

| | |
|--------------------------|------------------------------------|
| Max. operating pressure: | 350 bar |
| Rated flow: | 120 l/min |
| Cavity: | SAE-10-2N |
| Weight: | 0,2 kg |
| Coil type: | M15 type |
| Max. int. leakage: | 200 cm ³ /min (@46 cSt) |
| Installation torque: | 55 - 62 Nm |
| PWM range recommended: | 150-180 Hz |
| Seal kit: | RB100082 |



CE000119 1>2 ————— CE000120 1>2 - - - - - CE000121 1>2 - . - . - .

NOTES

Bleed air before use

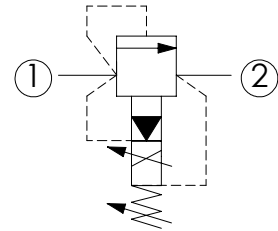
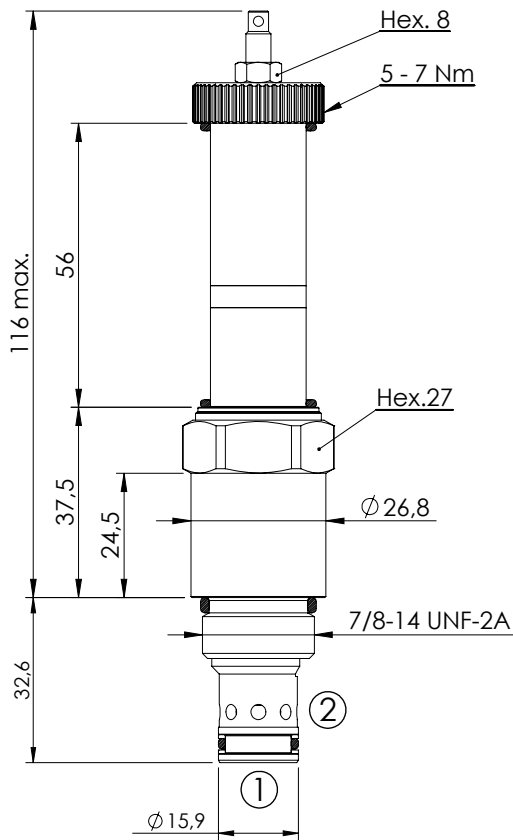
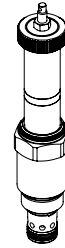
ORDERING CODES

| Quick code | Description | Setting range (bar) | Threshold current (with 12VDC coil) | Max control current (with 12V DC coil) | Override |
|------------|---------------------------|---------------------|-------------------------------------|--|-------------|
| CE000119 | CEBT-120-PLPS-91-S10-V350 | 30-350 | 200 mA (+/-7%) | 1600 mA (+/-7%) | Screw style |
| CE000120 | CEBT-120-PLPS-91-S10-V200 | 20-220 | 200 mA (+/-7%) | 1700 mA (+/-7%) | Screw style |
| CE000121 | CEBT-120-PLPS-91-S10-V100 | 15-90 | 200 mA (+/-7%) | 1700 mA (+/-7%) | Screw style |
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SOLENOID OPERATED CARTRIDGE

CEBT-120-PMPS

**PROPORTIONAL VALVES
PILOTED RELIEF
SPOOL TYPE FOR FAN DRIVE**

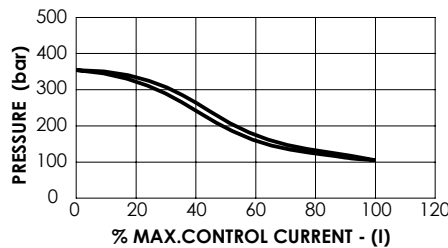
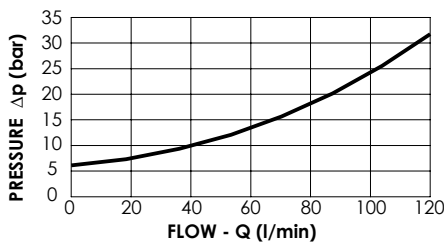


SPECIFICATIONS

| | |
|--------------------------|------------------------------------|
| Max. operating pressure: | 350 bar |
| Rated flow: | 120 l/min |
| Cavity: | SAE-10-2N |
| Weight: | 0,21 kg |
| Coil type: | M5 type |
| Max. int. leakage: | 200 cm ³ /min (@46 cst) |
| Installation torque: | 55 - 62 Nm |
| PWM range recommended: | 150-180 Hz |
| Seal kit: | RB100082 |

NOTES

Pressure decreasing with current increasing.
Maximum pressure value can be adjusted manually within a range.



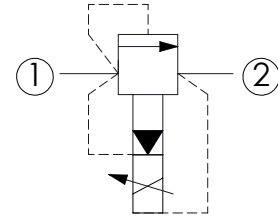
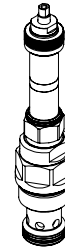
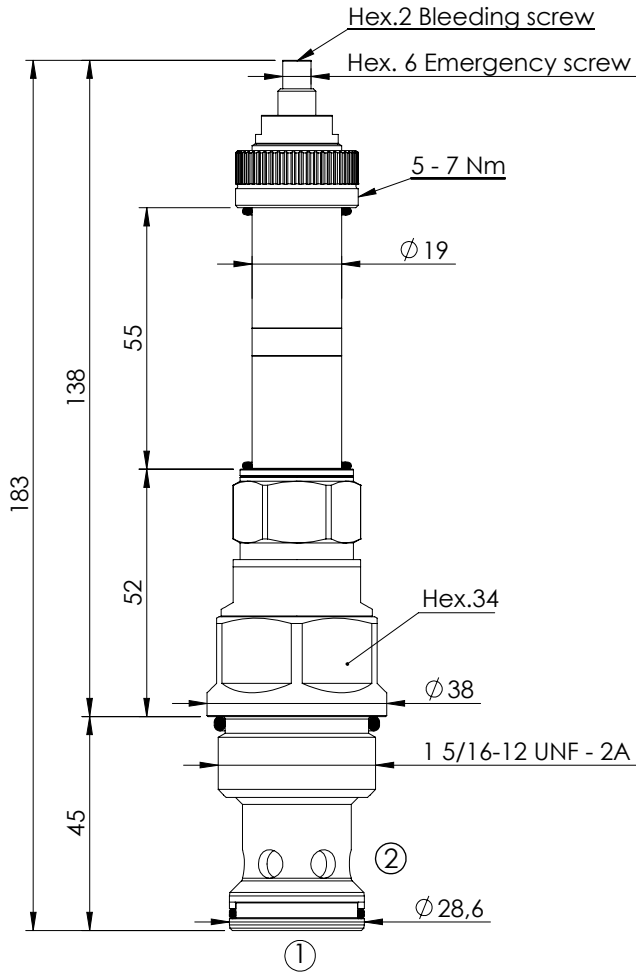
ORDERING CODES

| Quick code | Description | Minimum pressure (bar) | Max. pressure setting range (bar) | Standard setting (bar) | Threshold current (with 12VDC coil) | Max control current (with 12V DC coil) |
|------------|---------------------------|------------------------|-----------------------------------|------------------------|-------------------------------------|--|
| CE000890 | CEBT-120-PMPS-91-S10-V350 | 7 | 100-350 | 210 | 200 mA (+/-7%) | 1600 mA (+/-7%) |
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SOLENOID OPERATED CARTRIDGE

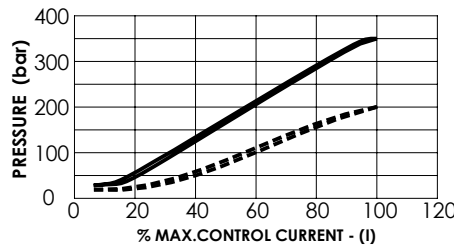
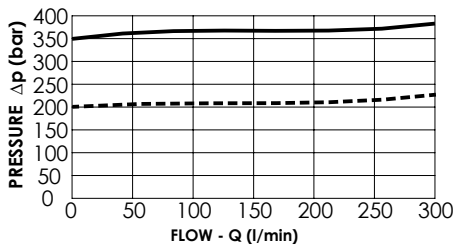
CEBT-300-PLPS

**PROPORTIONAL VALVES
PILOTED RELIEF
SPOOL TYPE**



SPECIFICATIONS

| | |
|--------------------------|------------------------------------|
| Max. operating pressure: | 350 bar |
| Rated flow: | 300 l/min |
| Cavity: | SAE-16-2N |
| Weight: | 0,5 kg |
| Coil type: | M15 type |
| Max. int. leakage: | 200 cm ³ /min (@46 cSt) |
| Installation torque: | 118 - 132 Nm |
| PWM range recommended: | 150-180 Hz |
| Seal kit: | RA100084 |



CE000880 1>2 ————— CE000895 1>2 - - - - -

NOTES

Bleed air before use

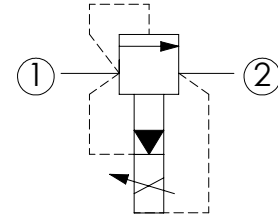
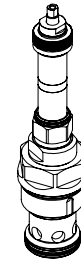
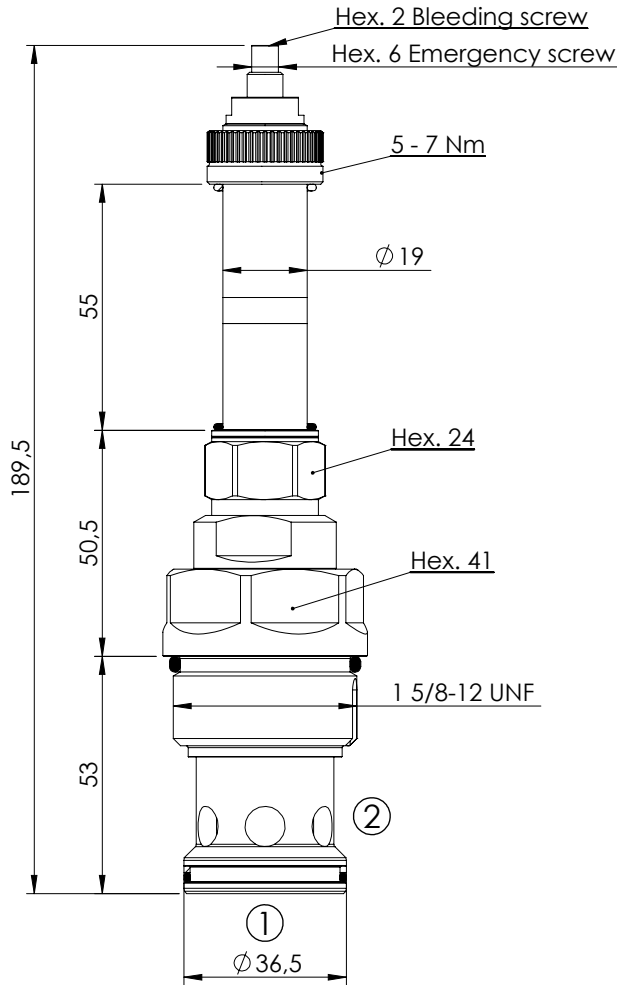
ORDERING CODES

| Quick code | Description | Proportional setting range (bar) | Threshold current (with 12VDC coil) | Max control current (with 12V DC coil) | Override |
|------------|---------------------------|----------------------------------|-------------------------------------|--|-------------|
| CE000880 | CEBT-300-PLPS-91-S16-V350 | 30-350 | 200 mA (+/-7%) | 1600 mA (+/-7%) | Screw style |
| CE000895 | CEBT-300-PLPS-91-S16-V200 | 20-200 | 200 mA (+/-7%) | 1700 mA (+/-7%) | Screw style |
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SOLENOID OPERATED CARTRIDGE

CEBT-500-PLPS

**PROPORTIONAL VALVES
PILOTED RELIEF
SPOOL TYPE**



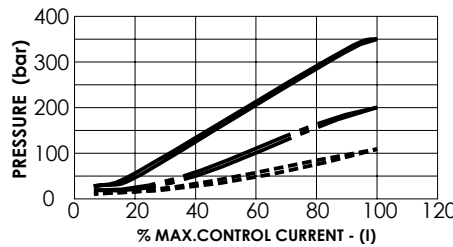
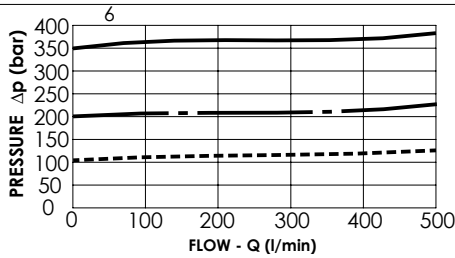
SPECIFICATIONS

| | |
|--------------------------|------------------------------------|
| Max. operating pressure: | 350 bar |
| Rated flow: | 500 l/min |
| Cavity: | SAE-20-2N |
| Weight: | 0,7 kg |
| Coil type: | M5 type |
| Max. int. leakage: | 200 cm ³ /min (@46 cSt) |
| Installation torque: | 230 - 250 Nm |
| PWM range recommended: | 150-180 Hz |

Seal kit: RA100085

NOTES

Bleed air before use



CE000770 1>2 ———
 CE000771 1>2 - - - -
 CE000772 1>2

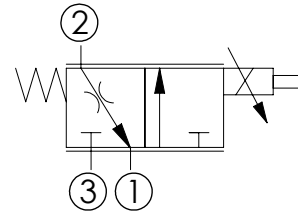
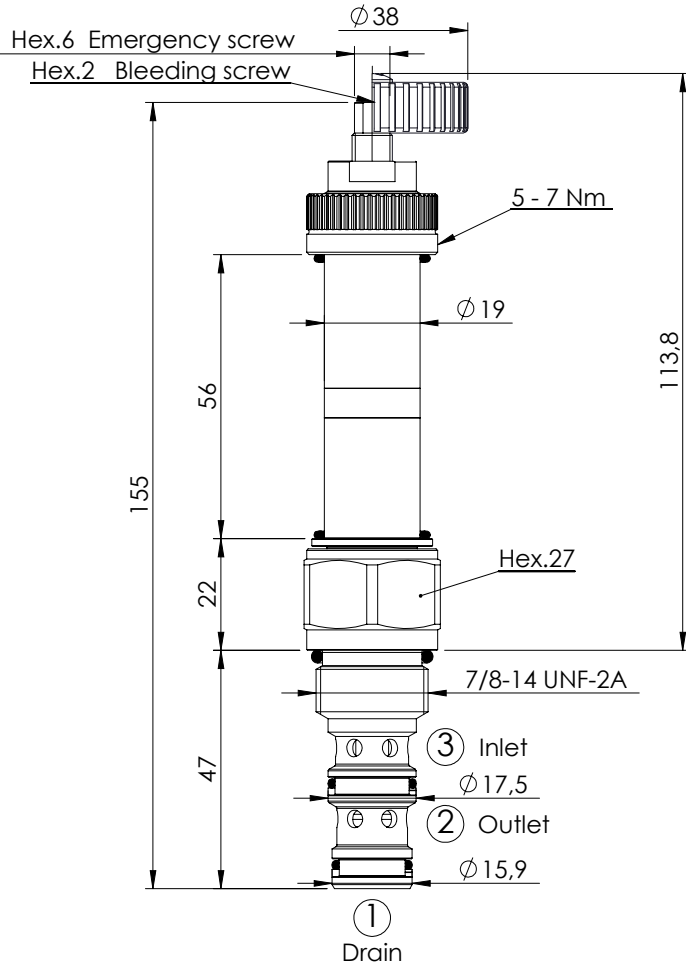
ORDERING CODES

| Quick code | Description | Setting range (bar) | Threshold current (with 12VDC coil) | Max control current (with 12V DC coil) | Override |
|------------|---------------------------|---------------------|-------------------------------------|--|-------------|
| CE000770 | CEBT-500-PLPS-91-S20-V350 | 30-350 | 200 mA (+/-7%) | 1600 mA (+/-7%) | Screw style |
| CE000771 | CEBT-500-PLPS-91-S20-V200 | 20-220 | 200 mA (+/-7%) | 1700 mA (+/-7%) | Screw style |
| CE000772 | CEBT-500-PLPS-91-S20-V100 | 15-90 | 200 mA (+/-7%) | 1700 mA (+/-7%) | Screw style |
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SOLENOID OPERATED CARTRIDGE

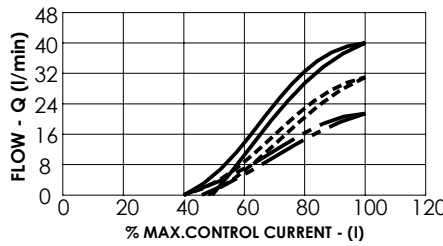
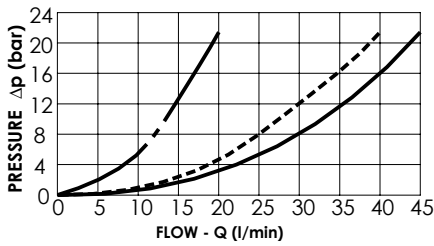
CECS-040-FSPS

**PROPORTIONAL VALVES
NON COMPENSATED
FLOW REGULATOR**



SPECIFICATIONS

| | |
|--------------------------|------------------------------------|
| Max. operating pressure: | 210 bar |
| Rated flow: | 40 l/min |
| Cavity: | SAE-10-3N |
| Weight: | 0,22 kg |
| Coil type: | M15 type |
| Max. int. leakage: | 150 cm ³ /min (@46 cSt) |
| Installation torque: | 55 - 62 Nm |
| Recommended PWM range: | 150-180 Hz |
| Seal kit: | RA100092 |



CE000111 3>2 ——— CE000112 3>2 - - - - - CE000113 3>2 — - - - -

NOTES

Bleed air before use

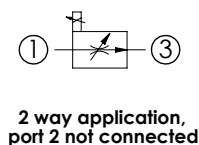
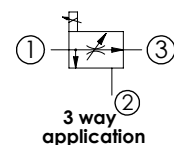
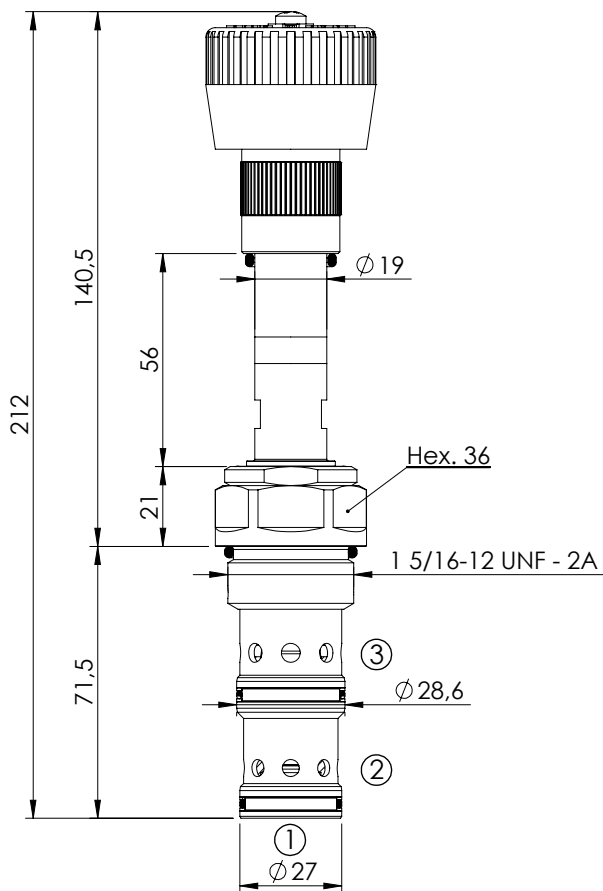
ORDERING CODES

| Quick code | Description | Rated flow (l/min) | Threshold current (with 12VDC coil) | Max control current (with 12V DC coil) | Override |
|------------|---------------------------|--------------------|-------------------------------------|--|----------------|
| CE000111 | CECS-040-FSPS-85-S10-V210 | 40 | 800 mA (+/-7%) | 1600 mA (+/-7%) | Screw style |
| CE000112 | CECS-030-FSPS-85-S10-V210 | 30 | 700 mA (+/-7%) | 1500 mA (+/-7%) | Screw style |
| CE000113 | CECS-020-FSPS-85-S10-V210 | 20 | 700 mA (+/-7%) | 2400 mA (+/-7%) | Screw style |
| CE000960 | CECS-040-FSPV-85-S10-V210 | 40 | 800 mA (+/-7%) | 1600 mA (+/-7%) | Handknob style |
| CE000906 | CECS-030-FSPV-85-S10-V210 | 30 | 700 mA (+/-7%) | 1500 mA (+/-7%) | Handknob style |
| CE000489 | CECS-020-FSPV-85-S10-V210 | 20 | 700 mA (+/-7%) | 2400 mA (+/-7%) | Handknob style |

PROPORTIONAL CARTRIDGE

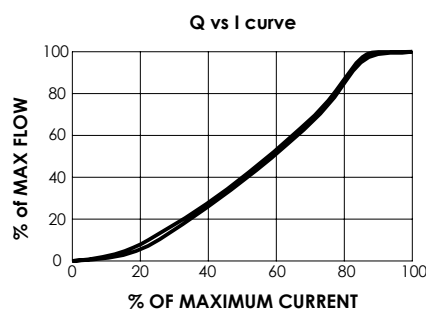
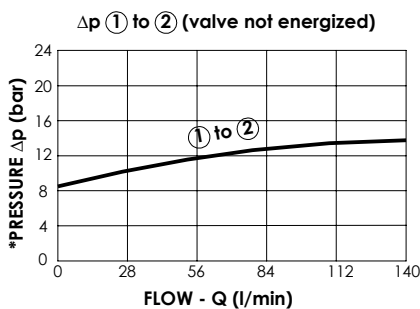
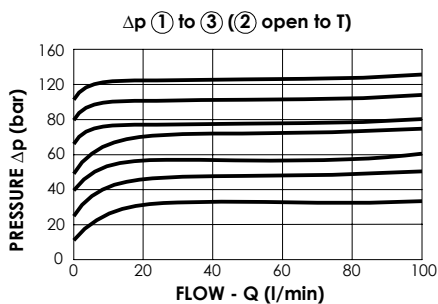
CECS-140-FRPM

PROPORTIONAL VALVES
FLOW REGULATOR
3 WAYS COMBINATION



SPECIFICATIONS

| | |
|---|--|
| Max. operating pressure: | 320 bar |
| Maximum flow (in inlet port ①): | 140 l/min |
| Max. flow ① to ③: | 100 l/min (regulated) |
| Pressure differential (① to ③): | 7 - 11 bar |
| Hysteresis (ramp up and down): | 1,5 - 3 % |
| Coil type: | M15 |
| Voltage: | 12-24 V dc |
| Max voltage (12 V dc): | 1800 mA |
| Max voltage (24 V dc): | 1200 mA |
| Coil resistance (12 V dc): | 3.3-5.8 Ω |
| Coil resistance (24 V dc): | 7.2-13 Ω |
| Weight: | 0,6 kg |
| Cavity: | SAE-16-3N |
| Installation torque: | 130 -145 Nm |
| Surface protection proportional solenoid: | Coating DIN 50962 Fe8//ZiNi with passivation |
| Seal kit: | RB100094 |



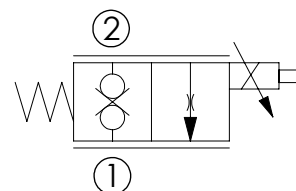
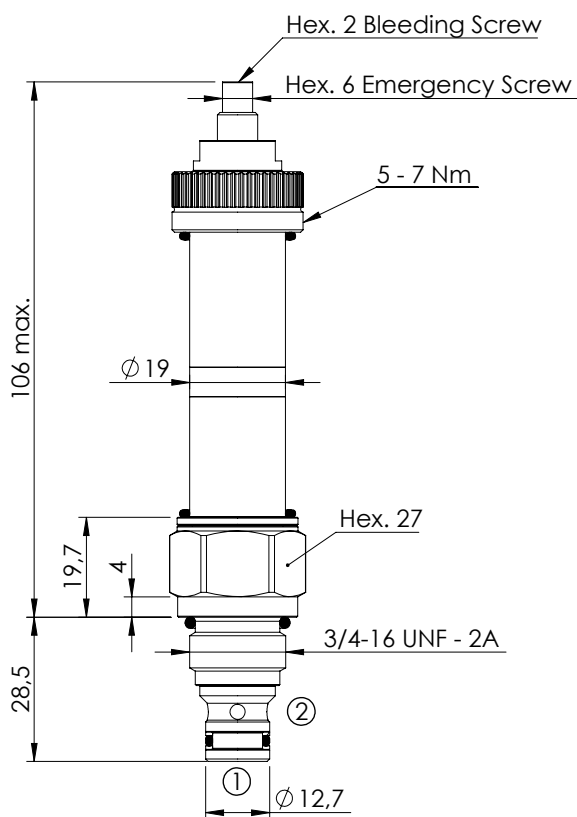
ORDERING CODES

| Quick code | Description | Regulated flow range (l/min) | Adjustment type |
|------------|----------------------------|------------------------------|-----------------|
| CE000831 | CECS-140-FRPM-15-S16-V320 | 0 - 15 | Handknob |
| CE000832 | CECS-140-FRPM-25-S16-V320 | 0 - 25 | Handknob |
| CE000833 | CECS-140-FRPM-40-S16-V320 | 0 - 40 | Handknob |
| CE000834 | CECS-140-FRPM-50-S16-V320 | 0 - 50 | Handknob |
| CE000835 | CECS-140-FRPM-65-S16-V320 | 0 - 65 | Handknob |
| CE000836 | CECS-140-FRPM-80-S16-V320 | 0 - 80 | Handknob |
| CE001034 | CECS-140-FRPM-100-S16-V320 | 0 - 100 | Handknob |

SOLENOID OPERATED CARTRIDGE

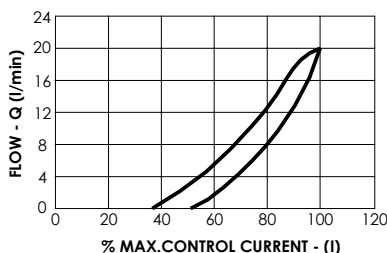
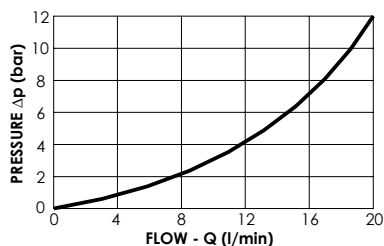
CEBS-020-PEPS

**PROPORTIONAL VALVE
NORMALLY CLOSED**



SPECIFICATIONS

| | |
|--------------------------|------------|
| Max. operating pressure: | 210 bar |
| Rated flow: | 20 l/min |
| Cavity: | SAE-08-2N |
| Weight: | 0,15 kg |
| Coil type: | M15 type |
| Installation torque: | 45 - 50 Nm |
| Recommended PWM range: | 120-150 Hz |
| Seal kit: | RA100081 |



NOTES

Bleed air before use

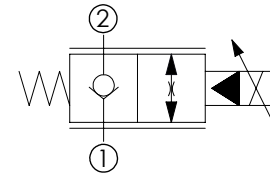
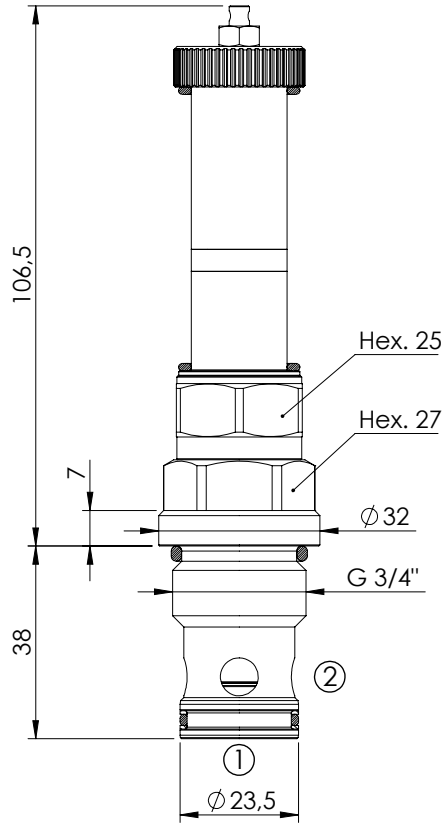
ORDERING CODES

| Quick code | Description | Rated flow (l/min) | Threshold current (with 12VDC coil) | Max control current (with 12V DC coil) | Override |
|------------|----------------------------|--------------------|-------------------------------------|--|-------------|
| CE000943 | CEBS-020-PEPS-103-S08-V210 | 20 | 1000 mA (+/-7%) | 2000 mA (+/-7%) | Screw style |
| | | | | | |
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PROPORTIONAL CARTRIDGE

CEBP-070-NCPN

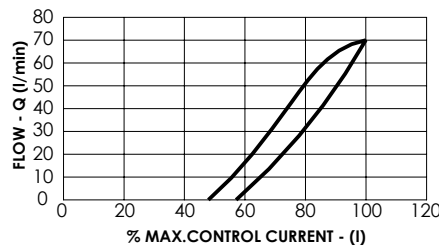
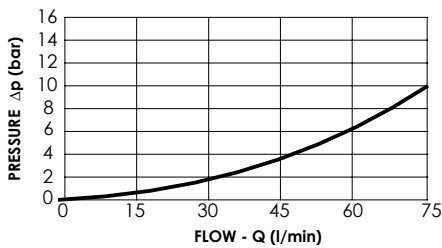
PROPORTIONAL VALVE
NON COMPENSATED
NORMALLY CLOSED



SPECIFICATIONS

| | |
|--------------------------|--------------|
| Max. operating pressure: | 350 bar |
| Rated flow: | 70 l/min |
| Cavity: | VP000057 |
| Weight: | 0,26 kg |
| Coil type: | M15 |
| Installation torque: | 110 - 130 Nm |
| PWM range recommended: | 150-180 Hz |
| Seal kit: | RD900057 |

NOTES

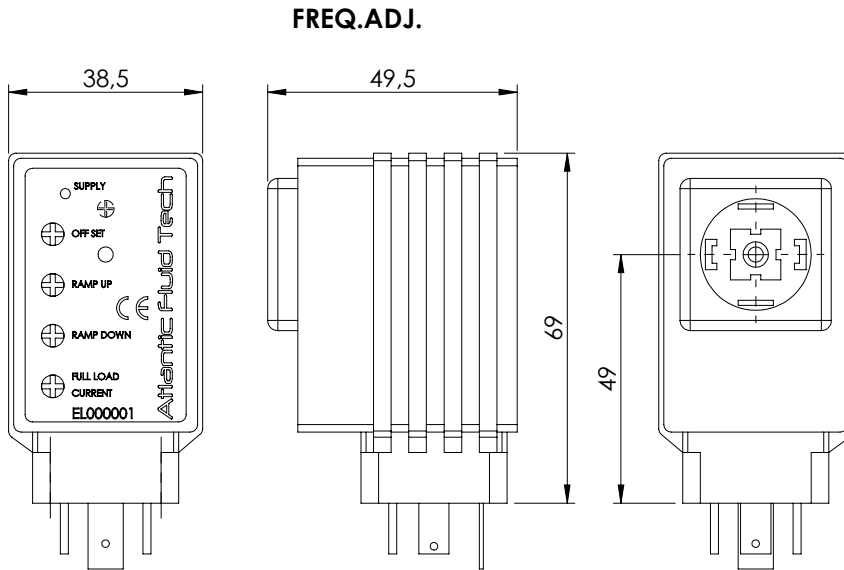
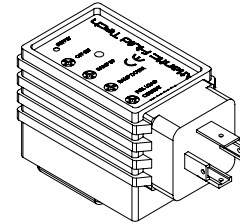


ORDERING CODES

| Quick code | Description | Setting range (bar) | Threshold current (with 12VDC coil) | Max control current (with 12V DC coil) | Override |
|------------|----------------------------|---------------------|-------------------------------------|--|-------------|
| CE001026 | CEBP-070-NCPN-112-057-N350 | 20 | 800 mA (+/-7%) | 1800 mA (+/-7%) | Screw style |
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PROPORTIONAL VALVE CONTROLLER

ELPC-030-SCCB



Max torque 0,5 Nm

SPECIFICATIONS

Supply voltage: 12 - 30 VDC
Coil rating must be matched with supply voltage:
 $R_{coil} < (V_{supply} - 1,5V) / I_{max}$

Control input signal options:
5KΩ external potentiometer
(accepts 2KΩ to 10KΩ), or 0-10 VDC signal
(see connection diagram)

Output current: up to 2A

Minimum current: 0 - 0,6 A

Max current deviation in temperature range: 3%

Ramp up / ramp down: 0,1 to 10 sec
Ramp setting independent from current range

PWM frequency: 100 - 500 Hz

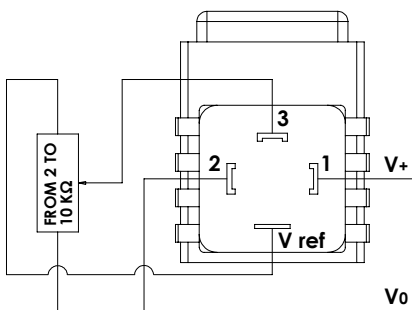
Operating conditions: -20 TO +70°C
0 to 85% relative humidity

Environmental protection: IP65
with cover and seals installed

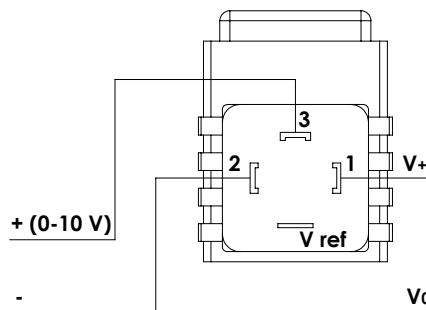
Connector type: DIN 43650 - ISO 4400

IMPORTANT
DO NOT REMOVE controller from solenoid when energized to avoid the risk of damaging it

CONNECTION EXAMPLE WITH JOYSTICK OR POTENTIOMETER



CONNECTION EXAMPLE WITH ANALOGIC SIGNAL



SETTING INSTRUCTIONS

SUPPLY: led is on when current is supplied

OFFSET: to be used to set minimum current value (I min), turn clockwise to increase setting

RAMP UP: to be used to set the ramp time from minimum (I min) to maximum current value (I max)

RAMP DOWN: to be used to set the ramp time from maximum (I max) to minimum current value (I min)

FULL LOAD CURRENT: to be used to set maximum current value (I max), turn clockwise to increase setting

FREQ. ADJ.: this trimmer is inside the controller and is preset by factory, to be used to modify the PWM frequency

ORDERING CODES

| Quick code | Description |
|------------|---------------------------------------|
| ELO00001 | Proportional controller ELPC-030-SCCB |