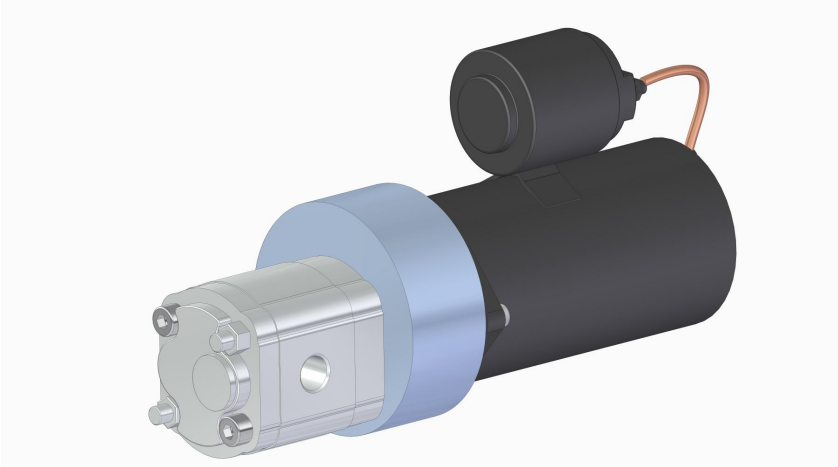
Hydronit

2011
DC Electropumps Bull

ELECTROPUMPS BULL series ordering codes

ELECTROPUMP BULL 80



MODEL CODE

EPB80 - **0,5 24DC** **/S150** - **K1,1** **V****

Electro Pump Bull 80 series

Dc electric motor power (kW) and type
(see tables E010.20.01):
0,15 12DC (/T/S): 0,15kW 12VDC (/thermal switch/start switch)
0,15 24DC (/T/S): 0,15kW 24VDC (/thermal switch/start switch)
0,5 12DC (/T/S): 0,5kW 12VDC (/thermal switch/start switch)
0,5 24DC (/T/S): 0,5kW 24VDC (/thermal switch/start switch)
0,8 12DC (/T/S): 0,8kW 12VDC (/thermal switch/start switch)
0,8 12DC (/T/S): 0,8kW 24VDC (/thermal switch/start switch)

Optional Starting Switch:
(see tables E010.20.01):
/S150: 150 A starting switch (for Ø 80 motors)

Gear pump displacement (cc/rev)
(see tables E010.30.01):

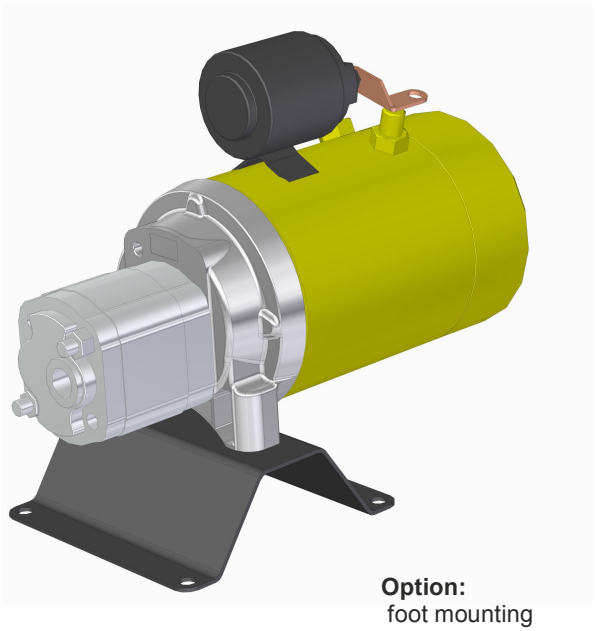
K0,1	0,19
K0,2	0,26
K0,4	0,38
K0,6	0,63
K0,9	0,87
K1,2	1,2
K1,6	1,68
K2,1	2,19
K2,7	2,7
K3,2	3,26

Optional Relief Valve
(see tables E010.30.02):

V40	10÷40 bar
V110	20÷110 bar
V250	30÷250 bar
V350	70÷350 bar

ELECTROPUMPS BULL series ordering codes

ELECTROPUMP BULL 114



Option:
foot mounting

MODEL CODE

EPB114 - **2,2 24DC** **/S150** - **K1,1** **V**** + **E60543006**

Option:
foot mounting

Electro Pump Bull 114 series

Dc electric motor power (kW) and type
(see tables E010.20.02):
1,6 12DC (/T/S): 1,6kW 12VDC (/thermal switch/start switch)
2,1 12DC (/T/S): 2,1kW 12VDC (/thermal switch/start switch)
2,2 24DC (/T/S): 2,2kW 24VDC (/thermal switch/start switch)

Optional Starting Switch:
(see tables E010.20.02):
/S150: 150 A starting switch (for Ø 114 motors)

Gear pump displacement (cc/rev)
(see tables E010.30.01):

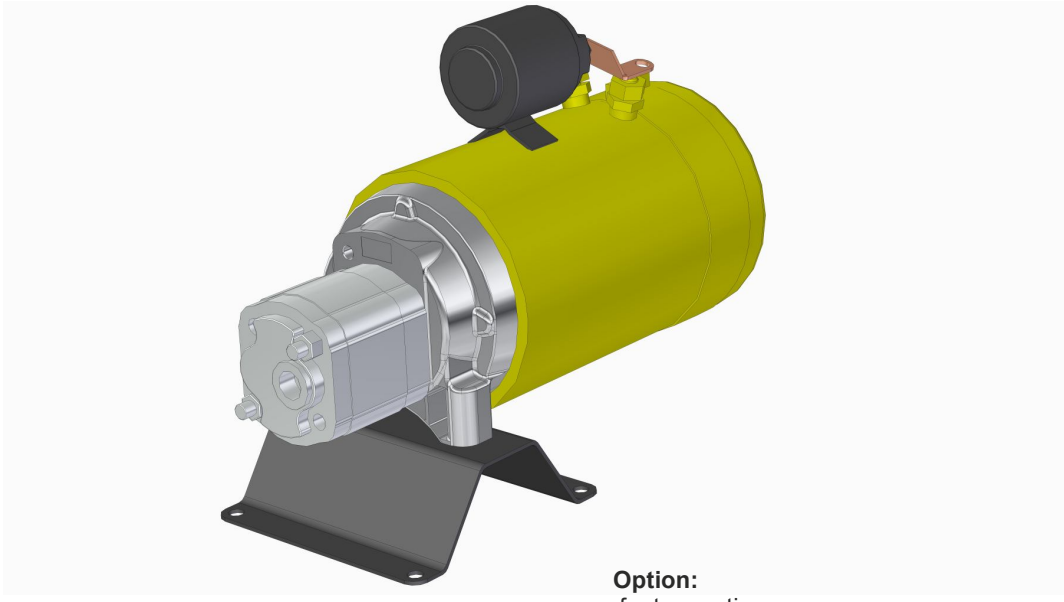
K0,9	0,87
K1,2	1,2
K1,6	1,68
K2,1	2,19
K2,7	2,7
K3,2	3,26
K3,7	3,8
K4,2	4,3
K5,0	4,9
K6,0	6,02
K7,9	6,02

Optional Relief Valve
(see tables E010.30.02):

V40	10÷40 bar
V110	20÷110 bar
V250	30÷250 bar
V350	70÷350 bar

ELECTROPUMPS BULL series ordering codes

ELECTROPUMP BULL 125



Option:
foot mounting

MODEL CODE

EPB125	-	2,4 12DC	/S200	-	K3,7	V**	+	E60543006

Electro Pump Bull 125 series

Dc electric motor power (kW) and type
(see tables E010.20.03):
2,4 12DC (/T/S): 2,4kW 12VDC (/thermal switch/start switch)
3,0 24DC (/T/S): 3,0kW 24VDC (/thermal switch/start switch)

Optional Starting Switch:
(see tables E010.20.03):
/S200: 200 A starting switch (for Ø 125 motors)

Gear pump displacement (cc/rev)
(see tables E010.30.01):

K0,9	0,87
K1,2	1,2
K1,6	1,68
K2,1	2,19
K2,7	2,7
K3,2	3,26
K3,7	3,8
K4,2	4,3
K5,0	4,9
K6,0	6,02
K7,9	6,02

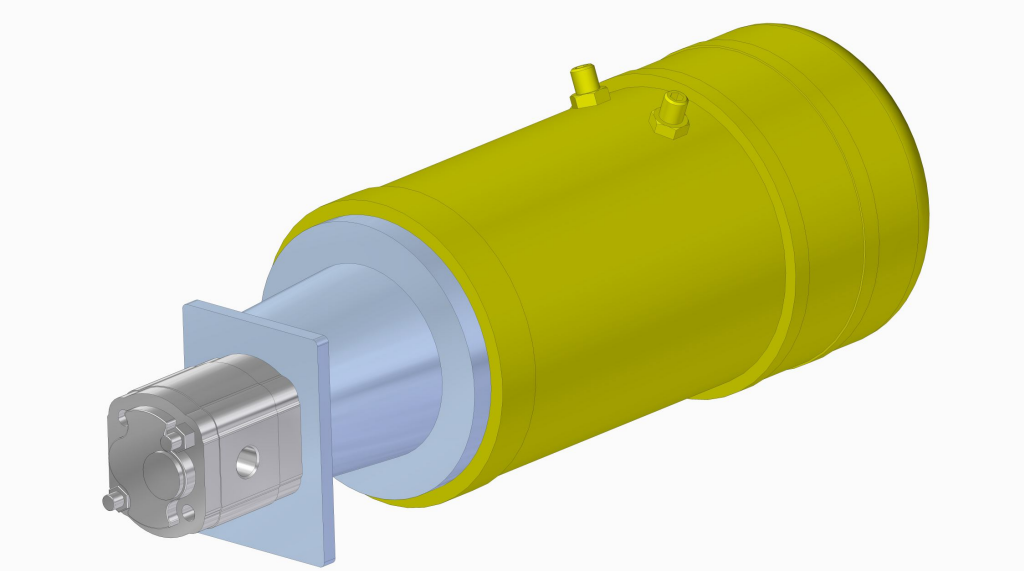
Optional Relief Valve
(see tables E010.30.02):

V40	10÷40 bar
V110	20÷110 bar
V250	30÷250 bar
V350	70÷350 bar

Option:
foot mounting

ELECTROPUMPS BULL series ordering codes

ELECTROPUMP BULL 151



MODEL CODE

EPB151 - **4,0HD 24DC** **/S200** - **K6,0** **V**** + **E60543006**

Option:
foot mounting

Electro Pump Bull 151 series

Dc electric motor power (kW) and type
(see tables E010.20.04):
2,5HD 12DC (/T/S): 2,5kW 12VDC (/thermal switch/start switch)
3,0HD 24DC (/T/S): 3,0kW 24VDC (/thermal switch/start switch)
4,0HD 24DC (/T/S): 3,0kW 24VDC (/thermal switch/start switch)

Optional Starting Switch:
(see tables E010.20.03):
/S200: 200 A starting switch (for Ø 151 motors)

Gear pump displacement (cc/rev)
(see tables E010.30.01):

K0,9	0,87
K1,2	1,2
K1,6	1,68
K2,1	2,19
K2,7	2,7
K3,2	3,26
K3,7	3,8
K4,2	4,3
K5,0	4,9
K6,0	6,02
K7,9	6,02

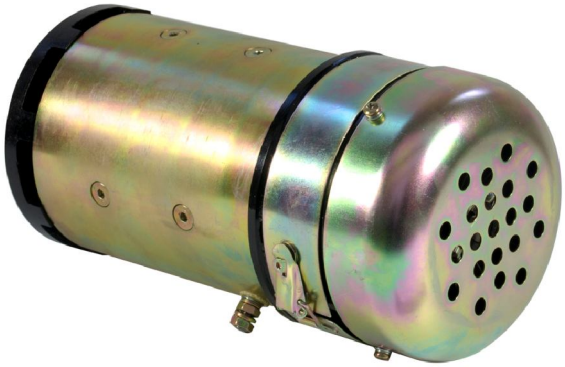
Optional Relief Valve
(see tables E010.30.02):

V40	10÷40 bar
V110	20÷110 bar
V250	30÷250 bar
V350	70÷350 bar

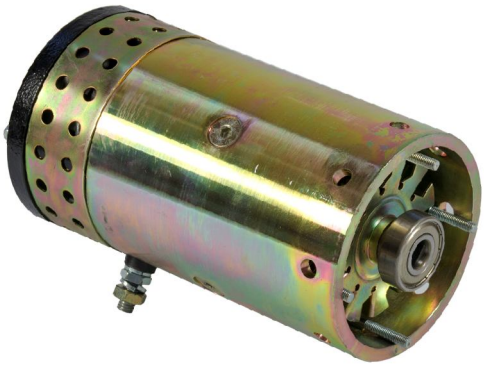
DC ELECTRIC MOTORS

Frame 114 DC motors: the most popular choice. Power up to 2,1kW 12VDC and 2,2kW 24VDC. All motors have thermal protector switch as standard. UL certified.

Frame 80 DC motors: permanent magnets and compact dimensions for high power density and low current absorption. Power from 150W up to 800W either 12VDC or 24VDC. Available with or without thermal protector switch. UL certified.



Frame 151 DC motors: real heavy duty bulk motors, with fan cooling, thermal protector and running time up to 16 min or over. Power from 2,5kW 12VDC up to 4kW 24VDC.

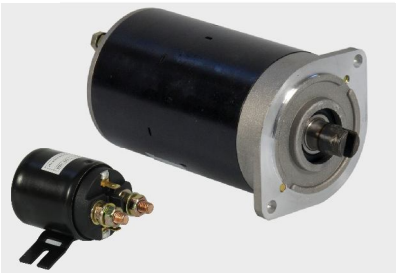


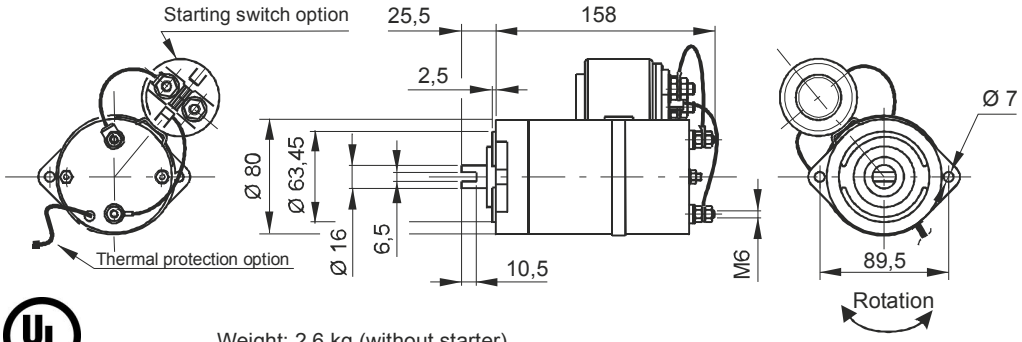
Frame 125 DC motors: the fan cooled motors for heavy duty applications with reasonable dimensions. Power up to 2,4kW 12VDC and 3kW 24VDC. All motors have thermal protector switch as standard.

Are these motors different from those mounted in the mini and micro power packs ranges?
No. Hydronit consistent engineering is reflected in the low number of parts used to compose all product ranges.
A big advantage for stockist distributors who can keep stock of spare motors, flanges as well as power packs central manifolds and assemble them quickly and effectively depending on customer requirements.

How do I dimension a DC motor?
DC motors are normally for intermittent duty. It is important to know required flow in l/min and working pressure in bar. Then following A050 table instructions a proper motor/pump combination can be selected. From the diagrams you can obtain absorbed current [Amp], S2 (allowed running time in seconds) and S3 (percentage of allowed running cycle over total running + cooling cycle) characteristic values. Take note that the rotational speed of DC motor is not constant and is dependent on absorbed torque, which is linked to flow and pressure.
Special motors executions, with out of standard voltages, IP grade, rotational speed or duty charge (also S1) can be manufactured according to customer requirements and depending on quantities involved. Please ask our technical office.

INTEGRAL DC MOTORS Ø 80





Permanent magnets
Protection degree: IP54
Insulation class: F

Weight: 2,6 kg (without starter)

Code

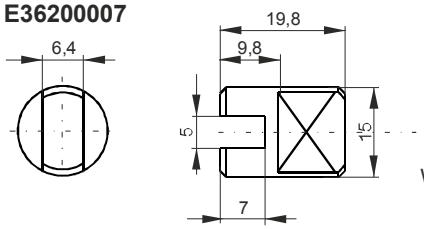
Description	PPC assembly code	Spare part code	Nominal duty cycle	Nominal speed	Nominal current
150W 12V DC + thermal protector	**0,15 12DC/T**	**M46C1ST01**	S2: 10 min S3: 15% ED	1400 rpm	30 A
150W 24V DC + thermal protector	**0,15 24DC/T**	**M46C2ST01**	S2: 10 min S3: 15% ED	1400 rpm	15 A
500W 12V DC motor	**0,5 12DC**	**M46C1S005**	S2: 6 min S3: 10% ED	2800 rpm	90 A
500W 24V DC motor	**0,5 24DC**	**M46C2S005**	S2: 6 min S3: 10% ED	2800 rpm	50 A
500W 12V DC + thermal protector	**0,5 12DC/T**	**M46C1ST05**	S2: 6 min S3: 10% ED	2800 rpm	90 A
500W 24V DC + thermal protector	**0,5 24DC/T**	**M46C2ST05**	S2: 6 min S3: 10% ED	2800 rpm	50 A
800W 12V DC motor	**0,8 12DC**	**M46C1S008**	S2: 3 min S3: 10% ED	4000 rpm	130 A
800W 24V DC motor	**0,8 24DC**	**M46C2S008**	S2: 4 min S3: 10% ED	4000 rpm	80 A
800W 12V DC + thermal protector	**0,8 12DC/T**	**M46C1ST08**	S2: 3 min S3: 10% ED	4000 rpm	130 A
800W 24V DC + thermal protector	**0,8 24DC/T**	**M46C2ST08**	S2: 4 min S3: 10% ED	4000 rpm	80 A

Options & couplings

Description	PPC assembly code	Spare part code
12V DC 150 Amp start switch + mounting kit	**S150 12DC 80**	**M47SC0001 + M47SK0801**
24V DC 150 Amp start switch + mounting kit	**S150 24DC 80**	**M47SC0002 + M47SK0801**
Remote wired control with 2 buttons and 3m cable	**P0201** (single acting)	
Remote wired control with 4 buttons and 3m cable	**P0202** (double acting)	
Shaft coupling for Ø 80 DC motors and gr.1 pump	**E36200007**	
Flange for Ø 80 DC motors and gr.1 pump	**E10101010**	

Notes: the starting switch mounting kit is provided when specifying the **/S150** as motor option in EPB assembly code.
When ordering spare starting switches, it must be ordered separately (code: M47SK0801).

E36200007

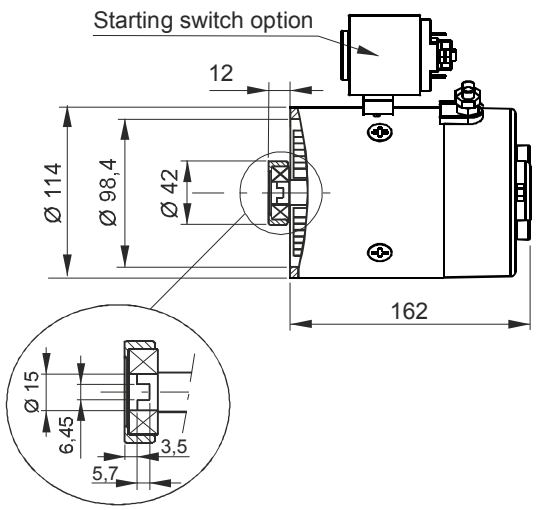


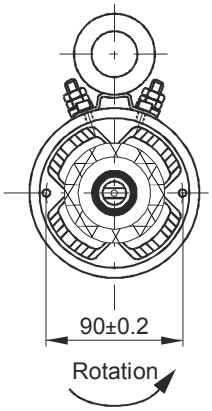
Weight: 0,063 kg

The coupling is already included when specifying the motor in EPB assembly code.
It is to be indicated only when ordering EPB with no motor but with coupling.

INTEGRAL DC MOTORS Ø 114

Compound wound
Protection degree: IP54
Insulation class: F
Weight: 7,05 kg (without starter)





Code

Description	PPC assembly code	Spare part code	Nominal duty cycle	Nominal speed	Nominal current
1600W 12V DC + thermal protector	**1,6 12DC/T**	**M46C1ST16**	S2: 2 min S3: 12% ED	2600 rpm	230 A
2100W 12V DC + thermal protector	**2,1 12DC/T**	**M46C1ST21**	S2: 1,2 min S3: 7,5% ED	2300 rpm	330 A
2200W 24V DC + thermal protector	**2,2 24DC/T**	**M46C2ST22**	S2: 2 min S3: 12% ED	2600 rpm	140 A

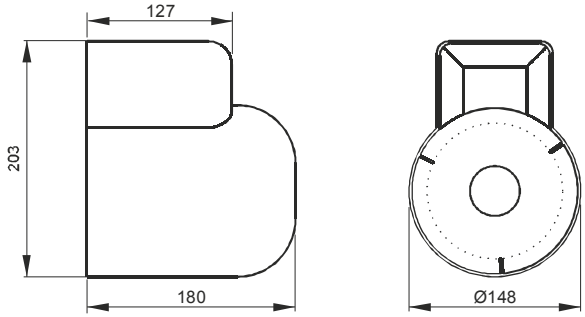
Options & couplings

Description	PPC assembly code	Spare part code
12V DC 150 Amp start switch + mounting kit	**S150 12DC 112**	**M47SC0001 + M47SK1121**
24V DC 150 Amp start switch + mounting kit	**S150 24DC 112**	**M47SC0002 + M47SK1121**
Remote wired control with 2 buttons and 3m cable	**P0201** (single acting)	
Remote wired control with 4 buttons and 3m cable	**P0202** (double acting)	
DC motor plastic cover	**F16000001**	
Coupling for Ø114 motors - Ø125 DC motors and gr.1 pump	**E36200003**	
Flange for Ø114 and Ø125 motors and gr.1 pump	**E10103010**	

Notes: the starting switch mounting kit is provided when specifying the **/S150** as motor option in EPB assembly code.
When ordering spare starting switches, it must be ordered separately (code: M47SK1121).

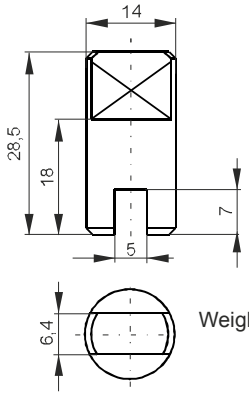
The coupling is already included when specifying the motor in EPB assembly code.
It is to be indicated only when ordering PPC with no motor but with coupling.

Motor plastic cover F16000001



Weight: 0,27 kg

Coupling E36200003



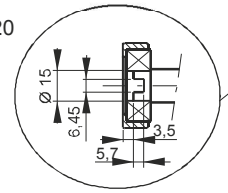
Weight: 0,063 kg

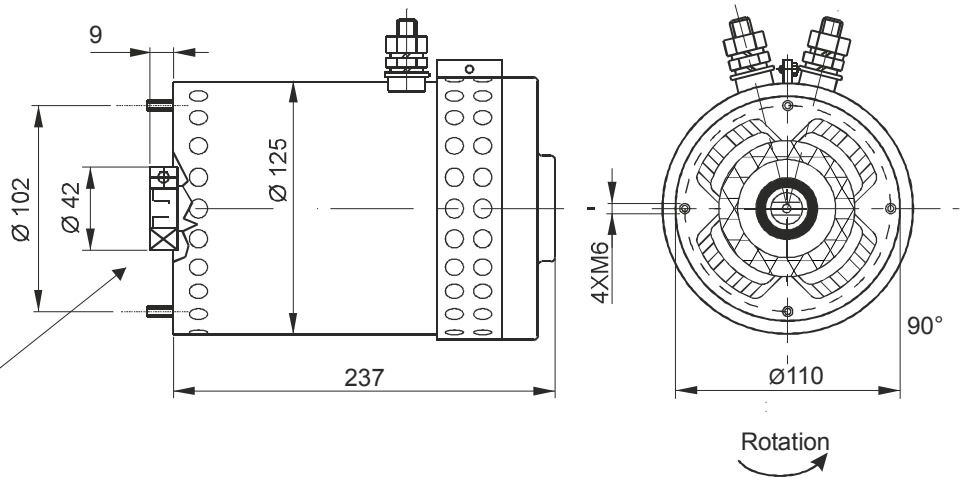
Flange E10103010

FAN COOLED INTEGRAL DC MOTORS Ø 125

Compound wound
Protection degree: IP20
Insulation class: F
Weight: 11kg

CE





Code

Description	PPC assembly code	Spare part code	Nominal duty cycle	Nominal speed	Nominal current
2400W 12V DC motor with thermal protection & fan	**2,4 12DC/T**	**M46C1ST24**	S2: 4min S3: 7,5% ED	3400 rpm	290 A
3000W 24 V DC motor with thermal protection & fan	**3 24DC/T**	**M46C2ST30**	S2: 4min S3: 7,5% ED	3500 rpm	170 A

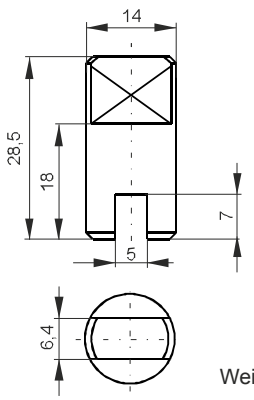
Options & couplings

Description	PPC assembly code	Spare part code
12V DC 150 Amp start switch + mounting kit	**S150 12DC 112**	**M47SC0001 + M47SK1121**
24V DC 150 Amp start switch + mounting kit	**S150 24DC 112**	**M47SC0002 + M47SK1121**
Remote wired control with 2 buttons and 3m cable	**P0201** (single acting)	
Remote wired control with 4 buttons and 3m cable	**P0202** (double acting)	
DC motor plastic cover	**F16000001**	
Coupling for Ø114 motors - Ø125 DC motors and gr.1 pump	**E36200003**	
Flange for Ø114 and Ø125 motors and gr.1 pump	**E10103010**	

Notes: the starting switch mounting kit is provided when specifying the **/S150** as motor option in EPB assembly code.
When ordering spare starting switches, it must be ordered separately (code: M47SK1121).

The coupling is already included when specifying the motor in EPB assembly code.
It is to be indicated only when ordering PPC with no motor but with coupling.

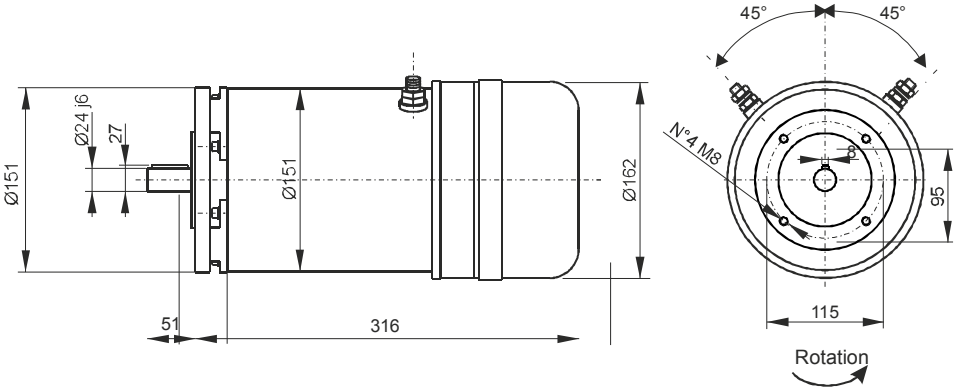
Coupling E36200003



Weight: 0,063 kg

Flange E10103010

HEAVY DUTY DC MOTORS Ø 151 WITH FAN COOLING



CE

Series wound
Protection degree: IP20
Insulation class: F

Weight: 21,5 kg
Front attachment: B14-90

Code

Description	PPC code	Spare part code	Nominal duty cycle	Nominal speed	Nominal current	Mounting face
2500W 12V DC motor + thermal protection & fan	**2,5HD 12DC/T**	**MB14C1ST25**	S2: 16min	1700 rpm	290 A	B14 90
3000W 24V DC motor + thermal protection & fan	**3HD 24DC/T**	**MB14C2ST30**	S2: 16min	1700 rpm	170 A	B14 90
4000W 24V DC motor + thermal protection & fan	**4HD 24DC/T**	**MB14C2ST40**	S2: 10min	2000 rpm	240 A	B14 90

Options

Description	PPC assembly code	Spare part code
Starting switch 200A 12 or 24V DC	**S200 12DC** **S200 24DC**	**M47ZC0001** (12 V DC) **M47ZC0002** (24 V DC)
Remote wired control with two/four buttons and 3m cable	**P0201** **P0202**	**P0201** (single acting) **P0202** (double acting)

The mounting kit is already included when specifying the motor in EPB assembly code.
When ordering spare part motors , the mounting kit must be ordered separately.

Coupling

Description	PPC assembly code / Spare part code
Two pieces coupling for Ø 151 DC motors	**E36100000 + E36100003**

Note: the coupling is already included when specifying the motor in EPB assembly code.

Flange

Description	PPC assembly code / Spare part code
Flange for Ø 151 DC motors	**E10105010**

Note: the flange is already included when specifying the motor in EPB assembly code.

Other DC motors for heavy duty or special applications

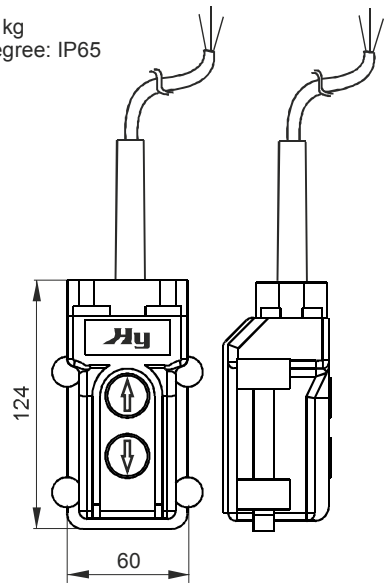
They are available with Ø125, Ø151 or Ø191 in multiple executions, engineered to perform heavy duty cycles and tailor made to suit each specific application, with or without fan cooling or thermal protection.

To properly choose these motors, following minimum information must be provided to our technical office: 1) motor power and voltage, 2) application type, 3) duty factors: S2 [min] continuous running time and S3 [%] percentage of running time on total cycle time, 4) required motor speed, 5) quantity to be supplied.

DC MOTORS OPTIONS

Remote control P0201
for one single or double acting cylinder

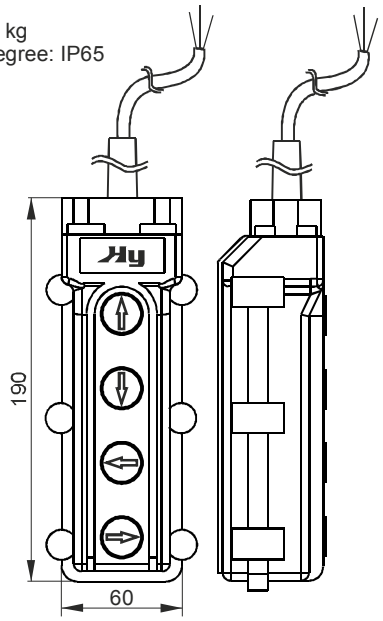
Weight: 0,58 kg
Protection degree: IP65



Spare part code
P0201

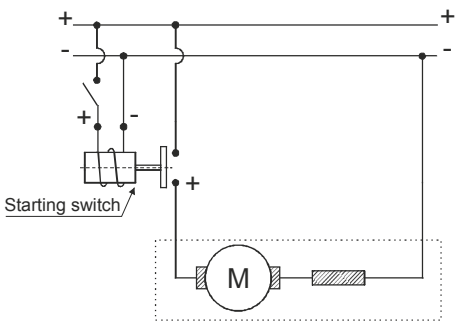
Remote control P0202
for two double acting cylinders

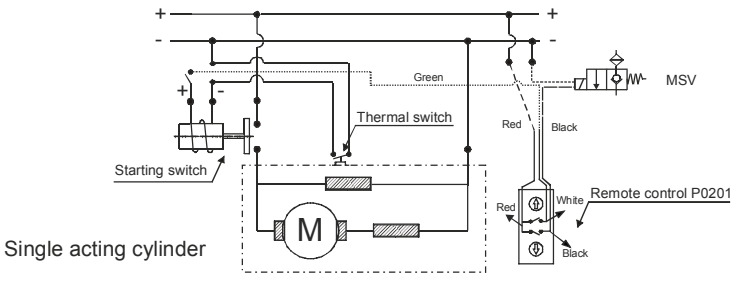
Weight: 0,60 kg
Protection degree: IP65

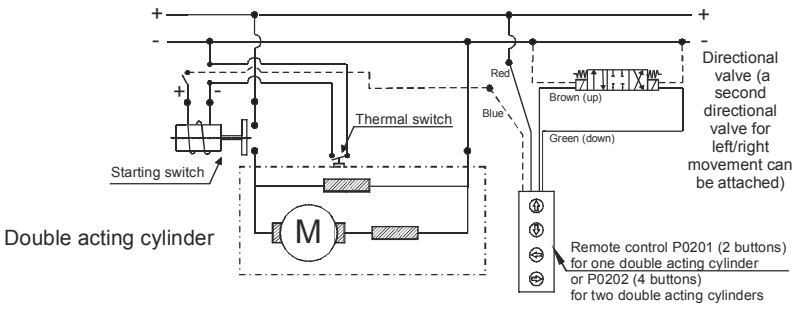


Spare part code
P0202

Electric connection schemes







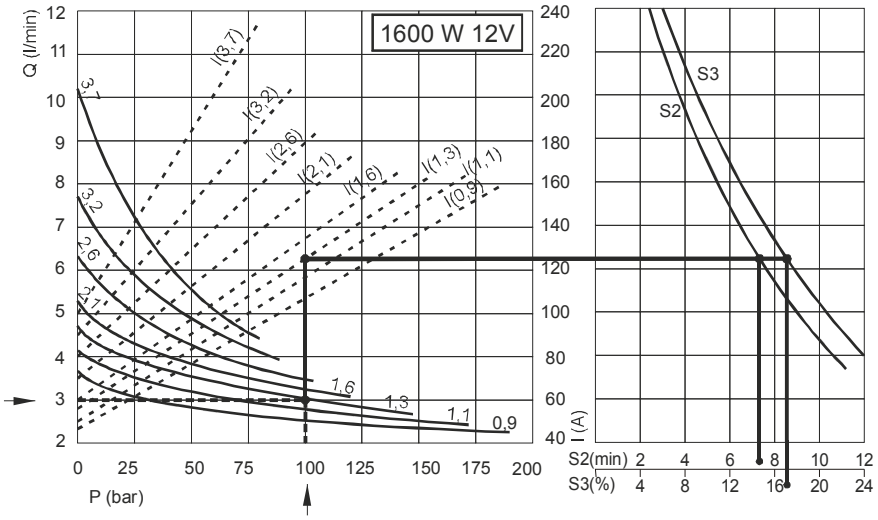
DC MOTORS CHOICE AND ELECTRIC CONNECTION SCHEMES

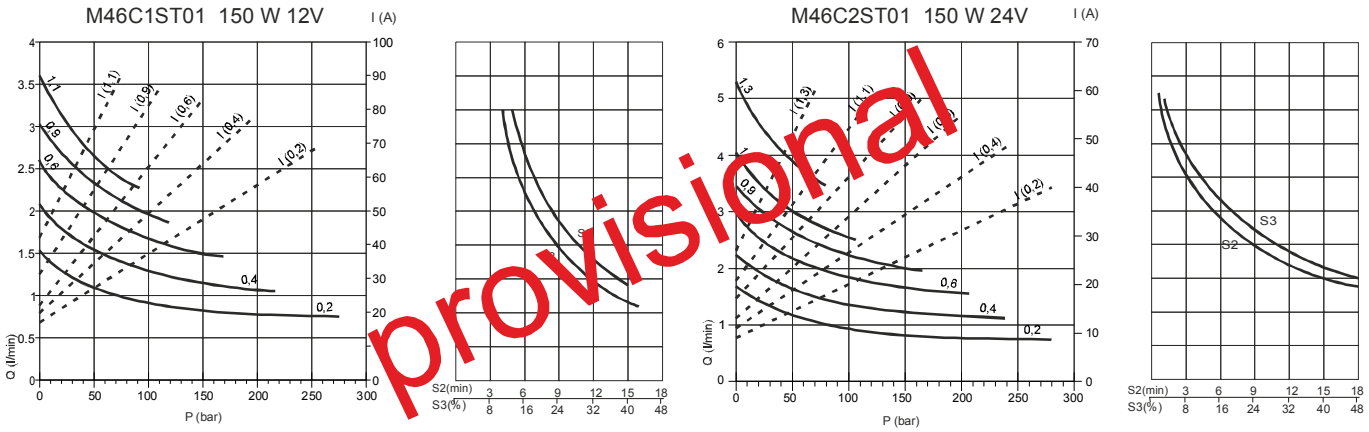
DC motors choice

Once required pressure and flow and available voltage (12 or 24V DC) are known, you can select the motor checking on each provided diagram if a pump displacement is available at the intersection of pressure and flow values. On the relevant "I" curve you obtain the absorbed current. When the intersection point is not exactly on a pump curve, choose the closer pump.
On the right hand diagram, from the current value, you can easily obtain the maximum allowed S2 (min) and S3 (%) values. S2 gives the allowable motor continuous running time in minutes, S3 gives the allowable running time in % of the total cycle.
If obtained S2 and S3 values are not enough for required duty cycle, choose a bigger motor and repeat the calculation on the new motor curves.

Example:

For our application we have following data:
flow = 3 l/min, max pressure = 100 bar, not clearly defined duty cycle.
-We check on 1,6 Kw 12V DC motor diagram and see there is a pump available.
-We choose from curves 1,3 pump: a 1,3 cm^3/rev pump. On the corresponding "I" curve we read 125 A absorbed current. In these conditions on the S2 / S3 diagram we read that the DC motor can work for maximum 7 min (S2), that is 17% (S3) of the total cycle, i.e. after 7 min working, the motor should cool down for at least 34 min.
-The total cycle time is calculated adding the working time and the idle time (17% working time plus 83% idle time), in this case 41 min. If this duty cycle is not adequate for our application, we must choose a higher power DC motor and check the relevant diagram again.

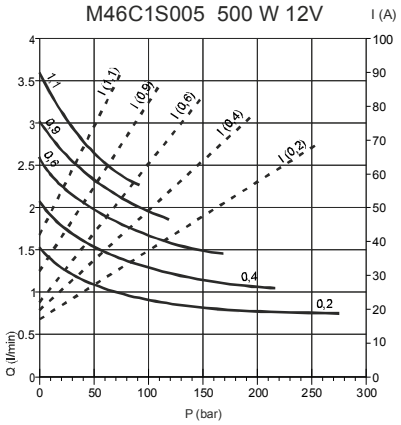


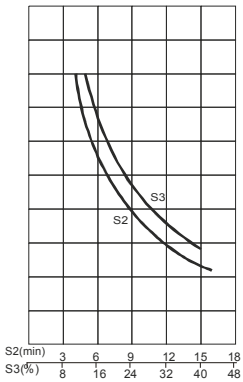


Tests made with rectified current supplied at nominal motor voltage (measured at the motor connection terminals) and oil ISO VG46 at 40°C

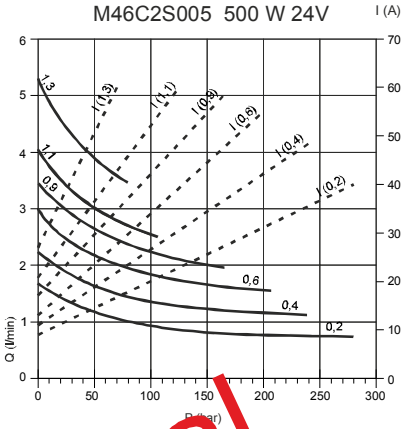
DC MOTORS DIAGRAMS

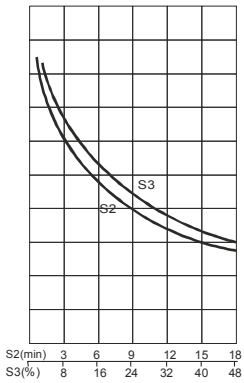
M46C1S005 500 W 12V



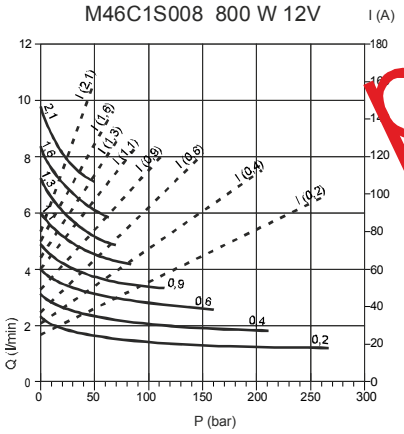


M46C2S005 500 W 24V

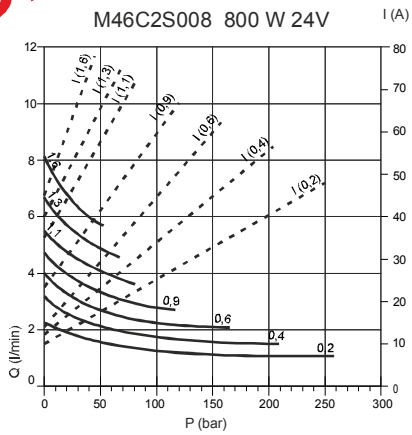


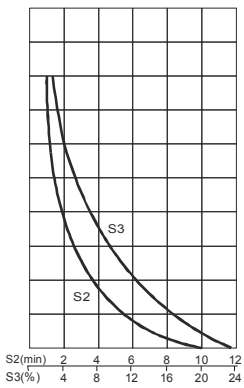


M46C1S008 800 W 12V

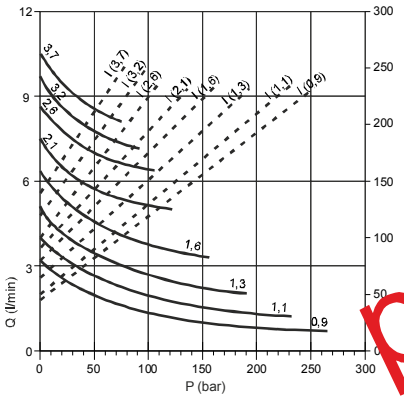


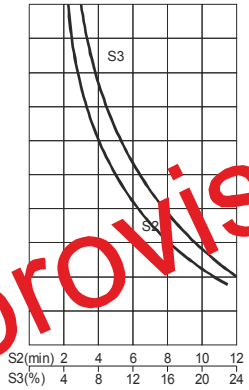
M46C2S008 800 W 24V



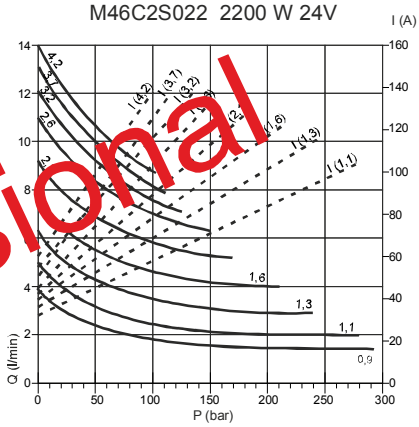


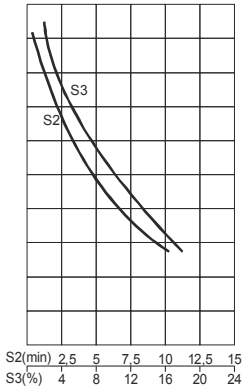
M46C1S016 1600 W 12V





M46C2S022 2200 W 24V

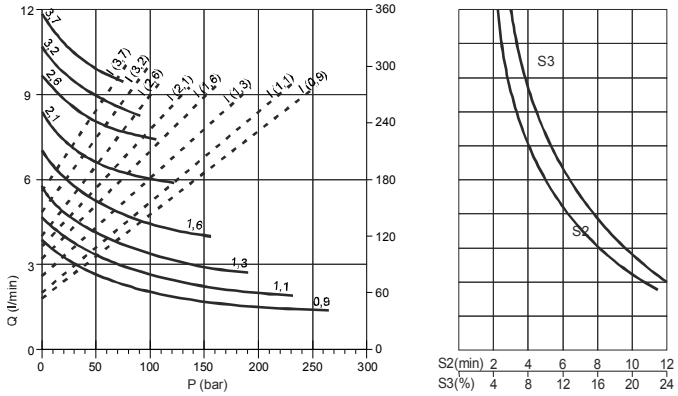




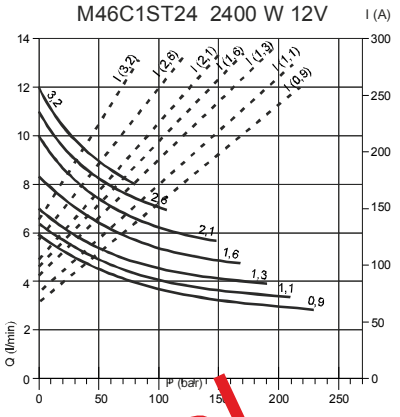
Tests made with rectified current supplied at nominal motor voltage (measured at the motor connection terminals) and oil ISO VG46 at 35°C

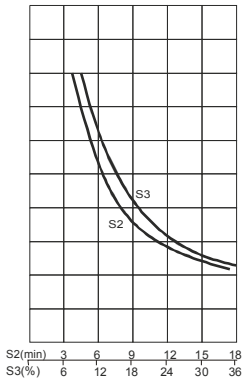
DC MOTORS DIAGRAMS

M46C1ST21 2100 W 12V

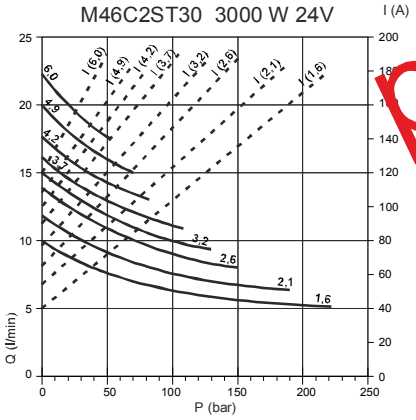


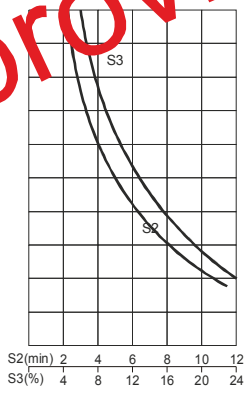
M46C1ST24 2400 W 12V



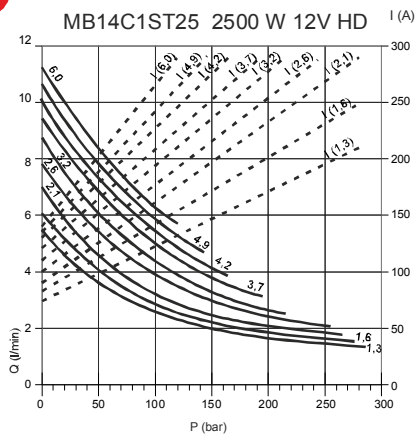


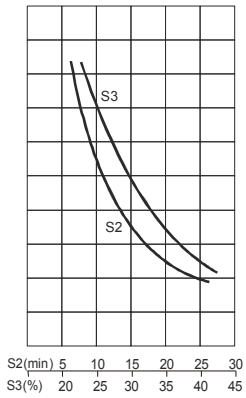
M46C2ST30 3000 W 24V



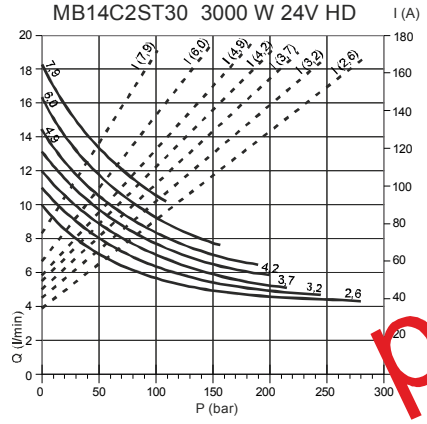


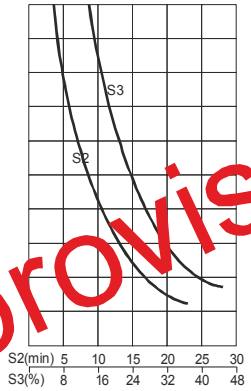
MB14C1ST25 2500 W 12V HD



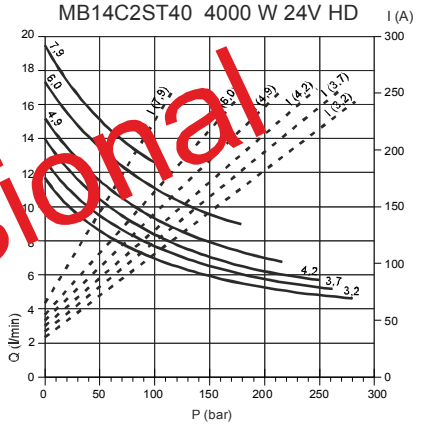


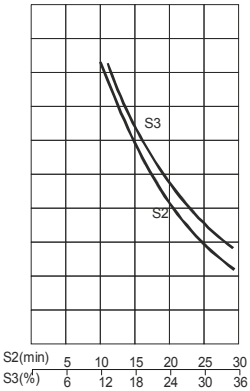
MB14C2ST30 3000 W 24V HD





MB14C2ST40 4000 W 24V HD





Tests made with rectified current supplied at nominal motor voltage (measured at the motor connection terminals) and oil ISO VG46 at 35°C

PUMPS

K series. The standard pressure balanced design for high volumetric efficiency also at high pressures. The front pressure line is output on the side of frame 114 and 125 flange. Suction port is on the back cover.

K series double pump, also available with HI-LO circuit integrated in the pump itself. Both pumps work at low pressure and only the front pump at high pressure, while the rear pump flow is bypassed at zero pressure for high efficiency and low amperage draw.

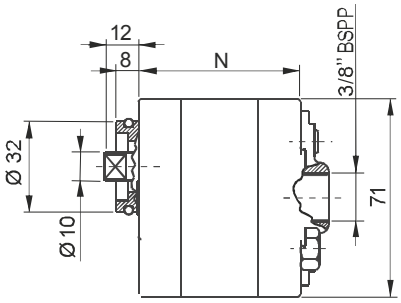
KL series with lateral ports. This is the conventional solution for frame 80 and frame 151 electropumps. Can be applied on frame 114 and 125 too. Optional integral relief valve.

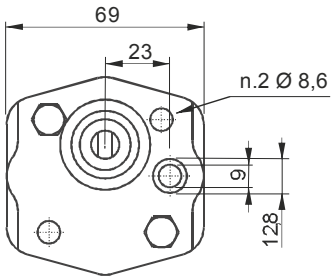
Why are pressure balanced gear pumps better than fixed clearings gear pumps?
Pressure balanced gear pumps are built with lateral pressure plates which reduce the mechanical clearings on the gears with the increase of the pressure on the outlet, thus greatly improving the fluidodynamic efficiency, reducing heat generation and energy consumption. The mechanical efficiency is kept at optimal levels too.

How can we mount both group 0 and group 1 pumps on the same mounting flange?
This can be done only with K type pumps and frame 114 or 125 flange. K group 1 pumps fit directly on the electropump flange and are fixed to it by two bolts, provided together with the pump.
K group 0 pumps are fitted by the adaptor plate E60513025, which adapts the pump front flange to the electropump flange.

Why are the pump technical specifications showing three maximum pressure levels?
Our pumps have three ratings for the maximum allowable pressure: 1-Peak: is the maximum one and can be allowed for a maximum cycle of 2 seconds. 2-Intermittent: it can be applied on the pump for a maximum cycle of 20 seconds; 3-Continuous: it can be applied on the pump continuously.

K TYPE GEAR PUMPS. GROUP 1





Main features

Oil temperature	-15 ÷ +80 °C
Inlet pressure	0,7 < P < 3,0 bar (absolute pressure)
Fixing bolts	2 x M8 8.8 class steel tightening torque: 25 Nm
Pressure definition	Peak pressure: cycle 2 s ON Intermittent pressure: cycle 20 s ON Continuous pressure: cycle always ON
Filtration setting	25 ÷ 50 µ

Standard rotation direction: clockwise rotation (from shaft side).
Counterclockwise rotation pumps can be mounted on request.
Ask our sales department.

Spare part code

E606040 **

Size:
see spare part code
on below table

EPB assembly code field

K — **Pump type:**
K = K type

1,2 — **Nominal displacement:**
(cc/rev) see below table

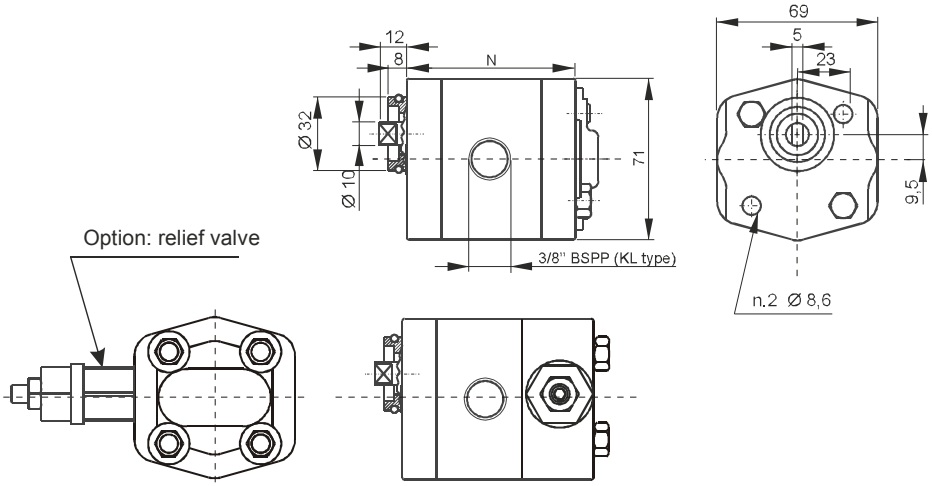
Available range

Nominal Displacement (cc/rev)	Peak pressure (bar)	Intermittent pressure (bar)	Continuous pressure (bar)	Max speed (rpm)	N (mm)	Bolts* (mm)	Spare part code	Weight
0,9	250	230	200	4500	60	M8x75	E60604001	0,73 Kg
1,2	250	230	200	4500	61	M8x75	E60604002	0,75 Kg
1,6	250	230	200	4500	63	M8x80	E60604035	0,77 Kg
2,1	250	230	200	4500	65	M8x80	E60604004	0,79 Kg
2,7	250	230	200	4500	66	M8x80	E60604005	0,82 Kg
3,2	250	230	200	4500	70	M8x85	E60604006	0,86 Kg
3,7	230	210	180	3600	72	M8x85	E60604007	0,88 Kg
4,2	230	210	180	3600	74	M8x90	E60604008	0,90 Kg
5,0	210	180	140	3000	76	M8x90	E60604009	0,94 Kg
6,0	210	180	140	3000	80	M8x100	E60604010	0,98 Kg
7,9	180	140	100	3000	90	M8x110	E60604012	1,10 Kg

Other pumps executions with different pressure/speed ratings are available on request.

* A proper washer is to be forecast to adapt bolt lenght

KL TYPE GEAR PUMPS. GROUP 1



Main features

Oil temperature	-15 ÷ +80 °C
Inlet pressure	0,7 < P < 3,0 bar (absolute pressure)
Fixing bolts	2 x M8 8.8 class steel tightening torque: 25 Nm
Pressure definition	Peak pressure: cycle 2 s ON Intermittent pressure: cycle 20 s ON Continuous pressure: cycle always ON
Filtration setting	25 ÷ 50 µ

Standard rotation direction: clockwise rotation (from shaft side).
Counterclockwise rotation pumps can be mounted on request.
Ask our sales department.

Spare part code

E606042 **

Size:
see spare part code
on below table

EPB assembly code field

KL — **Pump type:**
KL = KL type

1,2 — **Nominal displacement:**
(cc/rev) see below table

V** — **Optional relief valve:**
where ** = (bar max)

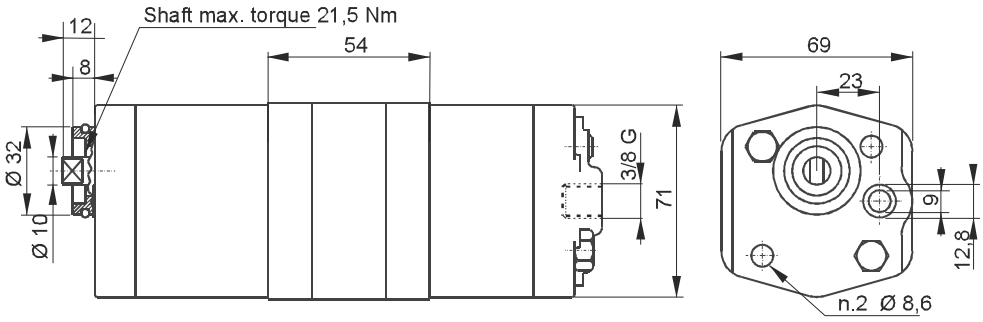
Available range

Nominal Displacement (cc/rev)	Peak pressure (bar)	Intermittent pressure (bar)	Continuous pressure (bar)	Max speed (rpm)	N (mm)	Bolts* (mm)	Spare part code	Weight
0,9	250	230	200	4500	60	M8x75	E60604201	0,73 Kg
1,2	250	230	200	4500	61	M8x75	E60604202	0,75 Kg
1,6	250	230	200	4500	63	M8x80	E60604235	0,77 Kg
2,1	250	230	200	4500	65	M8x80	E60604204	0,79 Kg
2,7	250	230	200	4500	66	M8x80	E60604205	0,82 Kg
3,2	250	230	200	4500	70	M8x85	E60604206	0,86 Kg
3,7	230	210	180	3600	72	M8x85	E60604207	0,88 Kg
4,2	230	210	180	3600	74	M8x90	E60604208	0,90 Kg
5,0	210	180	140	3000	76	M8x90	E60604209	0,94 Kg
6,0	210	180	140	3000	80	M8x100	E60604210	0,98 Kg
7,9	180	140	100	3000	90	M8x110	E60604212	1,10 Kg

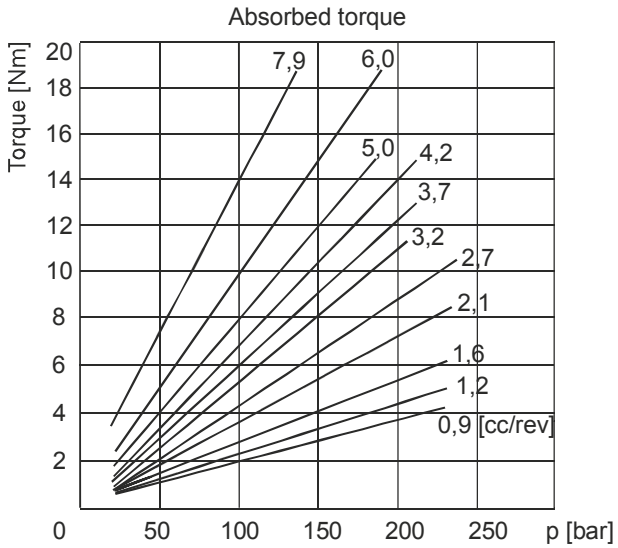
Other pumps executions with different pressure/speed ratings are available on request.

* A proper washer is to be forecast to adapt bolt lenght. With relief valve option, bolts lenght is to be increased of 15-20 mm.

DOUBLE GEAR PUMPS



Commune 3/8'' BSPP inlet port (on the rear cover) alternatively individual inlet side ports are available



PPC assembly code field

G	**Pump type:** G = G type, K = K type
1,1	**Displacement 1st section:** see U040.20.18 - 19 table
+	
2,1	**Displacement 2nd section:** see U040.20.18 - 19 table
HL	**Option:** Hi - Lo execution

Standard combinations available

Type	Nominal Displacement (cc/rev)	Peak pressure (bar)	Intermittent pressure (bar)	Continuous pressure (bar)	Unloading pressure (bar)	Max speed (rpm)	Spare part code	Weight
K0,9+3,2HL	0,9 + 3,2	250	230	210	42±5	1750	E60600932HL	2,12 Kg
K2,1+6,0HL	2,1 + 6,0	250	230	210	42±5	1750	E60602160HL	2,29 Kg

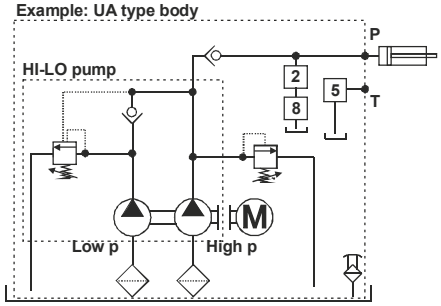
PUMPS CHOICE DIMENSIONING:

- Check that the power absorption of the front element is equal or higher than the rear one
- Element performance and features are the same as the elements of corresponding single pumps (see table in U040.20.18 - 19 sections)
- Double pump maximum rotation speed is determined by the lowest speed among maximum rotation speeds of each single element
- Torque applied on the shaft of the first element is the addition of the torques absorbed by the two pumps (see above diagram); this value must never go over the limit value allowed for the shaft (21,5 Nm).

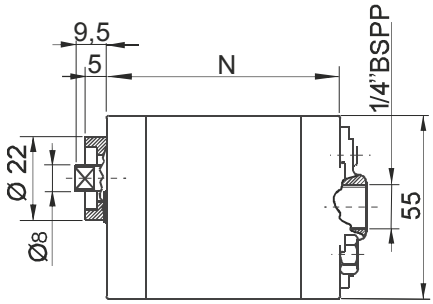
HI-LO

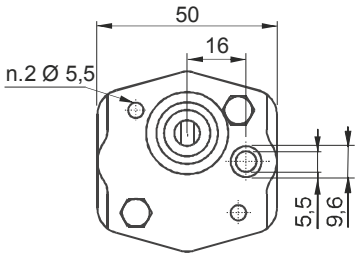
It's an efficient and energy saving solution for applications where you need a fast approach and an high pressure working phase (industrial presses, garbage compactors,..).
During the high speed phase both pumps are supplying flow to the system while during the high pressure phase, the high flow pump is bypassed with no load.

Example: UA type body



GROUP 0 GEAR PUMPS



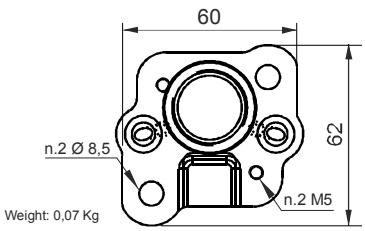


Main features

Oil temperature	-15 ÷ +80 °C
Inlet pressure	0,7 < P < 3,0 bar (absolute pressure)
Fixing bolts	2 x M5 8.8 class steel tightening torque: 5 Nm
Pressure definition	Peak pressure: cycle 2 s ON Intermittent pressure: cycle 20 s ON Continuous pressure: cycle always ON
Filtration setting	25 ÷ 50 µ

Standard rotation direction: clockwise rotation (from shaft side).
Counterclockwise rotation pumps can be mounted on request.
Ask our sales department.

Alluminium adapter flange for group 0
Code: E60513025



Spare part code

E6050 ** **

Nominal size:
see below table

Type:
30 = GM type
40 = KM type

EPB assembly code field

KM — **Pump type:**
GM = G type
KM = K type

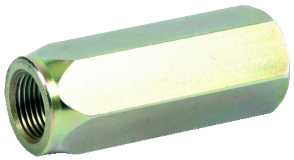
0,6 — **Nominal displacement:**
cc/rev
(see below table)

Available range

Nominal displacement (cc/rev)	Peak pressure (bar)	Intermittent pressure (bar)	Continuous pressure (bar)	Max speed (rpm)	N (mm)	Bolts* (mm)	Spare parts code	Weight (kg)
0,1	230	210	190	7000	45,5	M5x55	E60503001	0,31
0,2	200	180	160	6000	45,5	M5x55	E60504002	0,33
0,4	200	180	160	6000	47,5	M5x55	E60504004	0,35
0,6	200	180	160	6000	51,5	M5x60	E60504006	0,40
0,9	200	180	160	5000	52,5	M5x65	E60504009	0,44
1,3	200	180	160	3900	55,5	M5x65	E60504013	0,49
1,5	200	180	160	3900	57,8	M5x70	E60504015	0,51
1,9	150	130	110	3000			E60504017	0,55

* A proper washer is to be forecast to adapt bolt lenght

ACCESSORIES



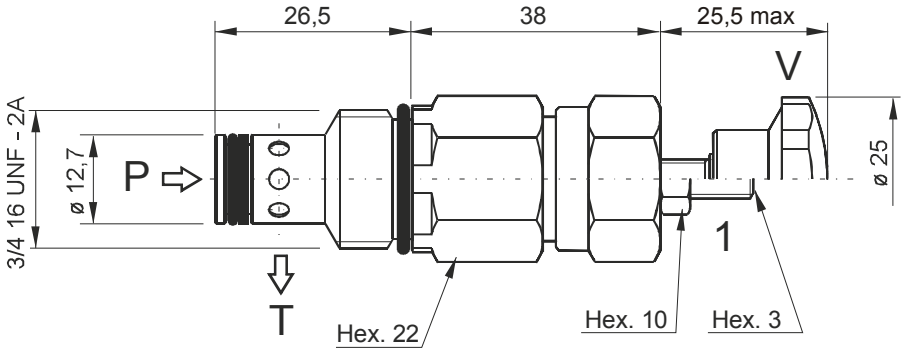
The VMDC20 relief valves can be mounted in KL gear pumps rear cover as option

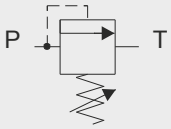
The foot mounting support is the same used in PPC range and is available with two different heights

Pressure switches, pressure gauges, flow control and check valves can be mounted in-line on the electropumps pressure port with proper nipples and adapters

Are these accessories shared with the mini and micro power packs ranges?
Yes. Hydronit consistent engineering is translated in a reduced number of modular parts and accessories to fit all ranges: Power Pack Compact series, Power Pack Micro series and Electropumps.
Stockist distributors keep spare parts in stock and are able to assemble very quickly the required unit according to the actual market demand

VMDC20 - DIRECT ACTING RELIEF VALVE





Main features

Max pressure	350 bar
Max flow	20 l/min
Weight	0,14 kg

Recommended tightening torque: 40 Nm
Recommended filtration settings: 25 ÷ 50 µ
Oil temperature: -30 ÷ + 80 °C

EPB assembly code field

V* ♦**

where *** stands for max setting pressure [bar]. Ex. V250

where ♦ stands for adjustment other than the standard one

This valve is to be fit in KL pump series rear cover

Spare part code

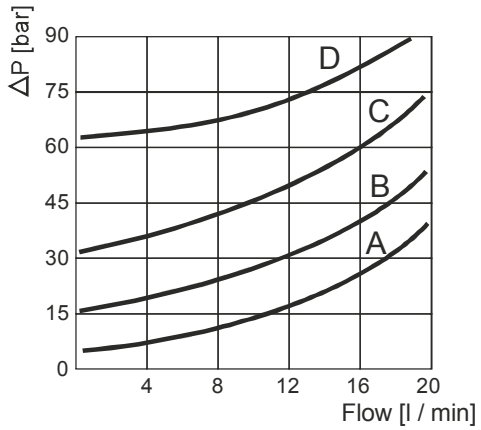
VMDC — **Direct acting relief valve**

20 — **Nominal size:**
20 = 20 l/min

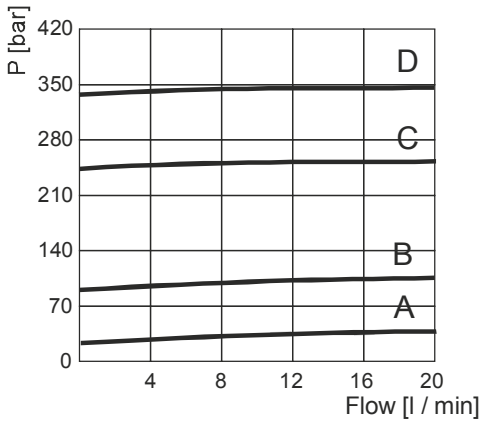
B — **Working range:**
A = 10 ÷ 40 bar
B = 20 ÷ 110 bar
C = 30 ÷ 250 bar
D = 70 ÷ 350 bar

1 — **Adjustment:**
1 = screw (std)
V = handwheel

Minimum setting pressure



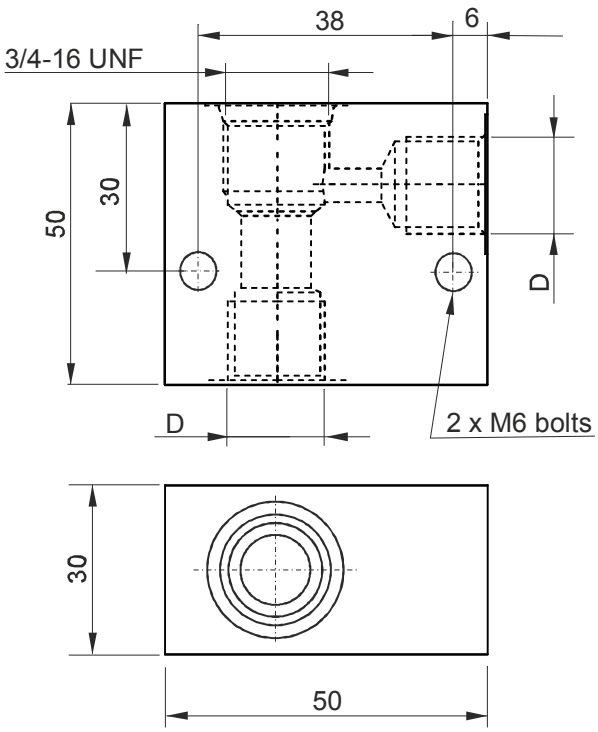
Pressure vs flow



Note: Values measured on valve alone (no cavity) with an oil viscosity of 46 cSt at 50 °C. Pressure drop may change depending on fluid viscosity and temperature

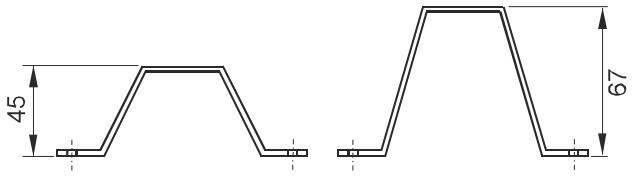
ACCESSORIES

In line mounting SAE 8 manifolds



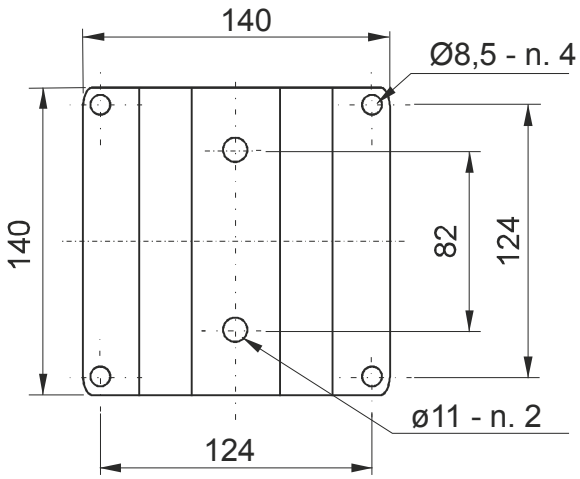
Spare part code	D	Weight
BFCSAE0801	1/4" BSPP	0,16 Kg
BFCSAE0802	3/8" BSPP	0,16 Kg

Foot mounting supports



E60543006
Weight: 0,4 Kg

E60543007
Weight: 0,6 Kg



E60543006: suitable for all tanks except E60303012

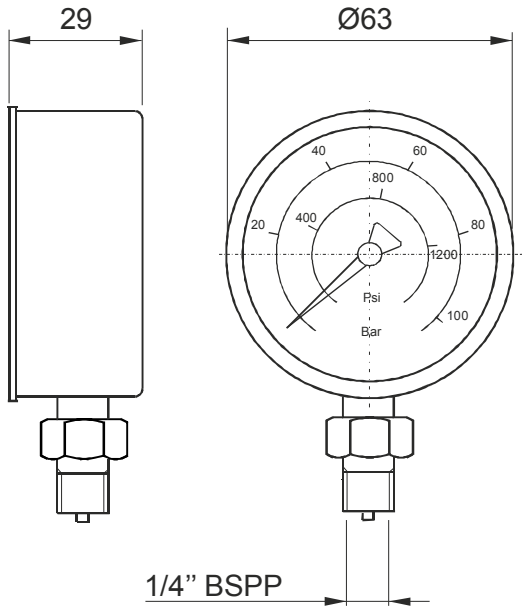
E60543007: recommended for E60303011, E60303012 tanks and with frame 90 AC integral motors.

Spare part codes	
E60543006	**E60543007**

ACCESSORIES

Pressure gauge

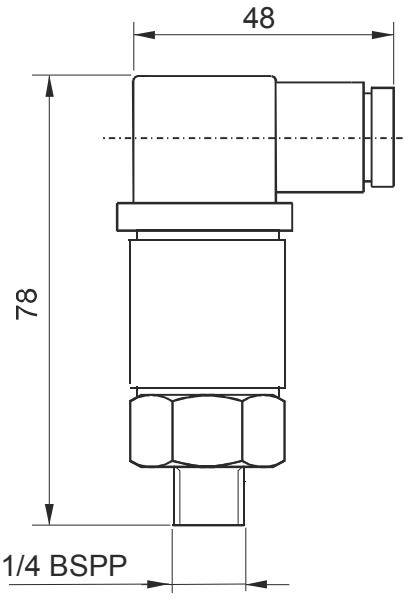
Protection degree	IP 65
Thermal drift	±0,04%/1K from 20°C
Weight	0,206 Kg
Static working pressure	75% end of scale
Peak working pressure	end of scale
Working temperature	-10 ÷ +60°C
Precision class	cl. 1.6 EN837-1



Spare part code	
MIR63* **	***:pressure max in bar (60, 100, 160, 250, 315 bar)

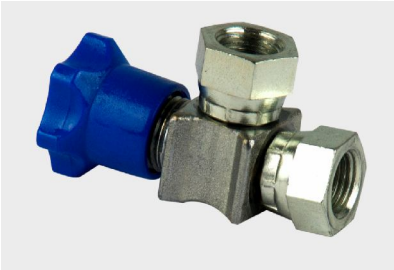
Pressure switch

Protection degree	IP 65
Hysteresis	15 ÷ 25%
Weight	0,05 Kg
Max load	0,5A @ 250VAC
Working temperature	-25 ÷ +85°C
Switching accuracy	±4% end of scale @ 20°C
Electric switch	NO / NC

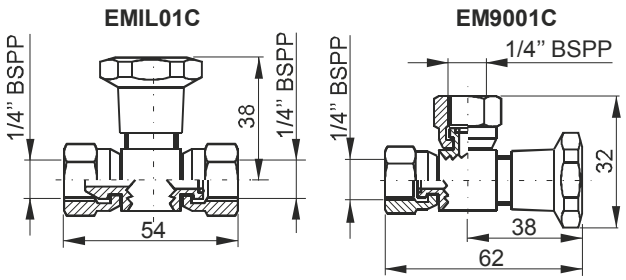


Spare part code	
F401* **	***:pressure max in bar (050, 100, 200, 400 bar)

ACCESSORIES

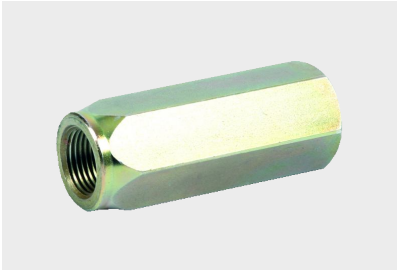


Gauge isolator F-F

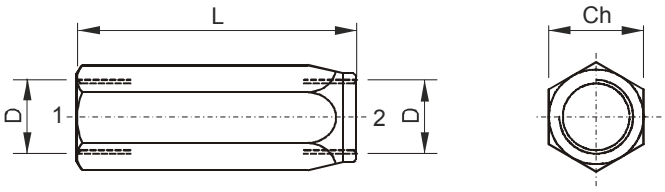


Weight: 0,14 Kg. Max working pressure: bar

Spare part code
EM9001C / EMIL01C

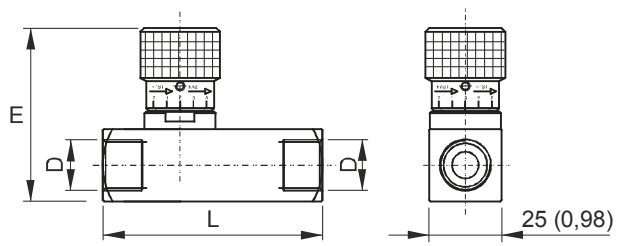


In-line check valve



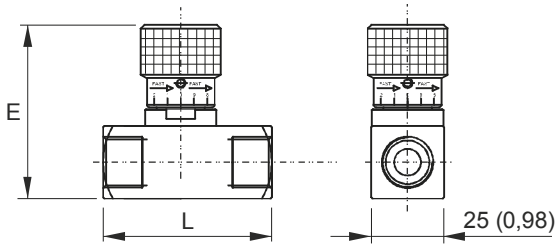
Spare part code	D	Ch	L	Weight
VUR01	1/4" BSPP	19	55	0,10 kg
VUR02	3/8" BSPP	24	65	0,18 kg
VURSAE06	9/16-18UNF	19 (0,75)	58 (2,28)	0,10 kg (0,22 lb)

In-line unidirectional flow control valve



Spare part code	D	E	L	Weight
STU01	1/4" BSPP	68	66	0,34 kg
STU02	3/8" BSPP	68	77	0,36 kg
STUSAE06	9/16-18UNF	68 (2,68)	70,5 (2,78)	0,38 kg (0,84 lb)

In-line bidirectional flow control valve



Spare part code	D	E	L	Weight
STB01	1/4" BSPP	68	54	0,29 kg
STB02	3/8" BSPP	68	54	0,27 kg
STBSAE06	9/16-18UNF	68 (2,68)	54 (2,13)	0,30 kg (0,66 lb)