



# DC brushless coolers EBR series





Denominazione codice prodotto  
Ordering code

SERIE  
MODELLO

SERIES  
MODEL

EBR

D4

24

01

- D4
- D5
- D6
- 24
- 30
- 40
- 44
- 60
- 70

TIPO DI MOTORIZZAZIONE FAN MOTOR TYPE

24 DC 24V

TIPO DI VENTILAZIONE VENTILATING TYPE

01 Aspirante Suction air flow





## APPLICAZIONI

Gli scambiatori **SERIE EBR** vengono utilizzati per il raffreddamento del circuito oleodinamico delle macchine movimento terra e delle macchine agricole; Trovano un largo impiego per la nuova generazione di veicoli per il raffreddamento di acqua e glicole. Questa gamma si contraddistingue per l'ottimo rapporto prezzo / efficienza, mantenendo la stessa qualità che ha sempre contraddistinto il prodotto EMMEGI.



## APPLICATION

**EBR SERIES** are used

*For oil hydraulic systems cooling on moving and agricultural machines.*

*This serie has an optimum price / efficiency relation,*

*And they find wide use for the new generation of vehicles*

*For cooling water-glycol.*

*keeping the same quality that has always identified Emmegi's products.*



## Esempio di scelta dello scambiatore

Per effettuare la scelta dello scambiatore si procede come segue:

Potenza da dissipare :	12 [kW]
Portata olio ISO VG 32 :	90 [lpm]
Temperatura ingresso olio :	60 [°C]
Temperatura ambiente :	30 [°C]

Si calcola la potenza specifica di scambio espressa in kW/°C, conoscendo la potenza da dissipare e il  $\Delta T$  (differenza tra la temperatura olio ingresso e la temperatura ambiente).

$$P = \frac{12}{(60 - 30)} \frac{[kW]}{[°C]} = 0.4 \frac{[kW]}{[°C]}$$

Nota la portata olio (90 lpm) e la potenza specifica di scambio (0.40 kW/°C) si procede alla ricerca del prodotto avvalendosi dei grafici riportati a catalogo, relativi ai singoli modelli (fig.3). Il prodotto che, fissata la portata, ha un valore di potenza specifica di scambio comparabile con la richiesta, sarà il più indicato nella scelta.

## Example of heat exchangers choice

To size the heat exchanger model, the required data are:

Power to dissipate :	12 [kW]
ISO VG 32 oil flow :	90 [lpm]
Oil input temperature :	60 [°C]
Ambient temperature :	30 [°C]

You can then calculate the specific heat exchange power kW/°C if you know the power to dissipate and the  $\Delta T$  (the difference between the oil input temperature and the ambient temperature).

$$P = \frac{12}{(60 - 30)} \frac{[kW]}{[°C]} = 0.4 \frac{[kW]}{[°C]}$$

If it is known the oil flow (90 lpm) and specific exchange power required (0.4 kW/°C), the right product will be found using the graph (fig.3). Read up from the lpm to the required heat rejection. Select any model on, or above this point.

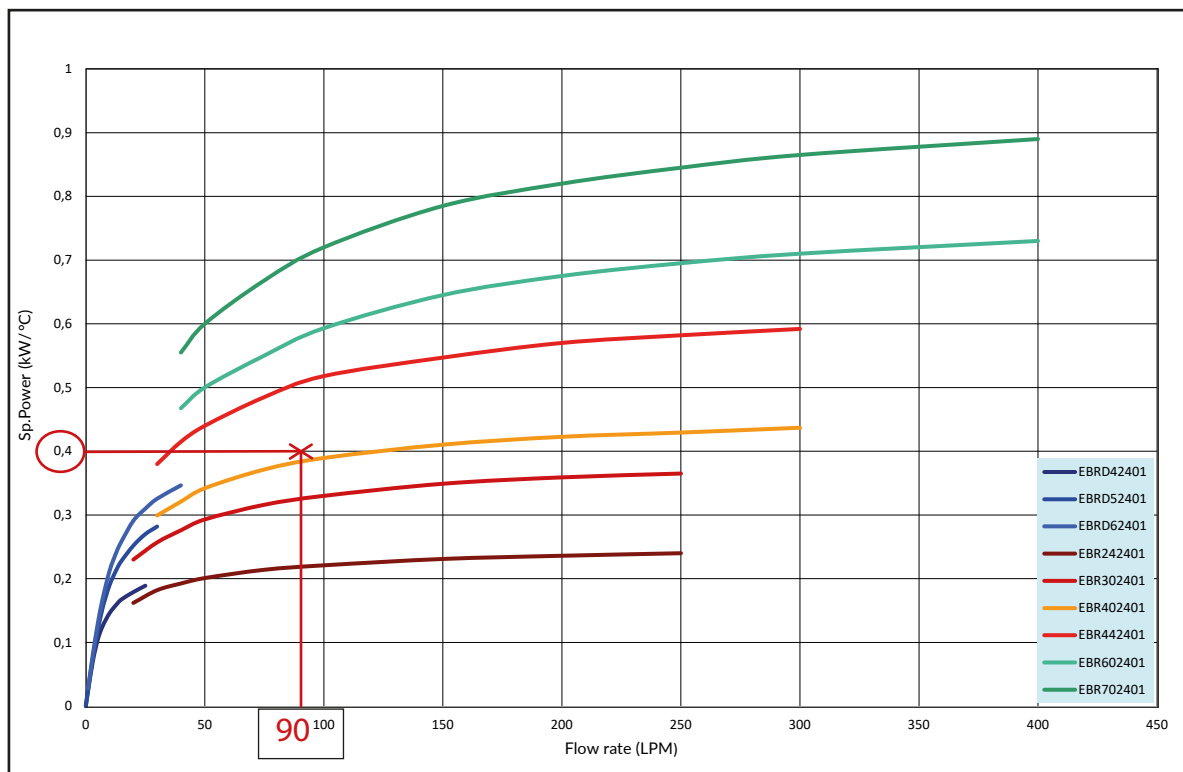


Fig.3



# DC brushless coolers

## EBR D4/D5/D6

Cod. Emmegi Par Number	Dati tecnici / Technical data						
	Voltage (V)	Amp. rating (A)	Plug	Fan (number)	db(A)	Approx Weight (Kg)	Cooler volume (l)
EBRD42401	24	16	DUCON 2.8	1	78	12	1
EBRD52401	24	32	YAZAKI	1	85.5	15	1.6
EBRD62401	24	23	YAZAKI	1	79.5	21	2.7

Cod. Emmegi Par Number	Dimensioni / Dimension								
	A	B	C	D	E	F	G	H	I
EBRD42401	403	340	281	59	219	240	81.5	316	1/2" BSP
EBRD52401	468	401.5	342	59	208	305	81.5	376	1/2" BSP
EBRD62401	577	508	449	60	209	400	88	486	1/2" BSP

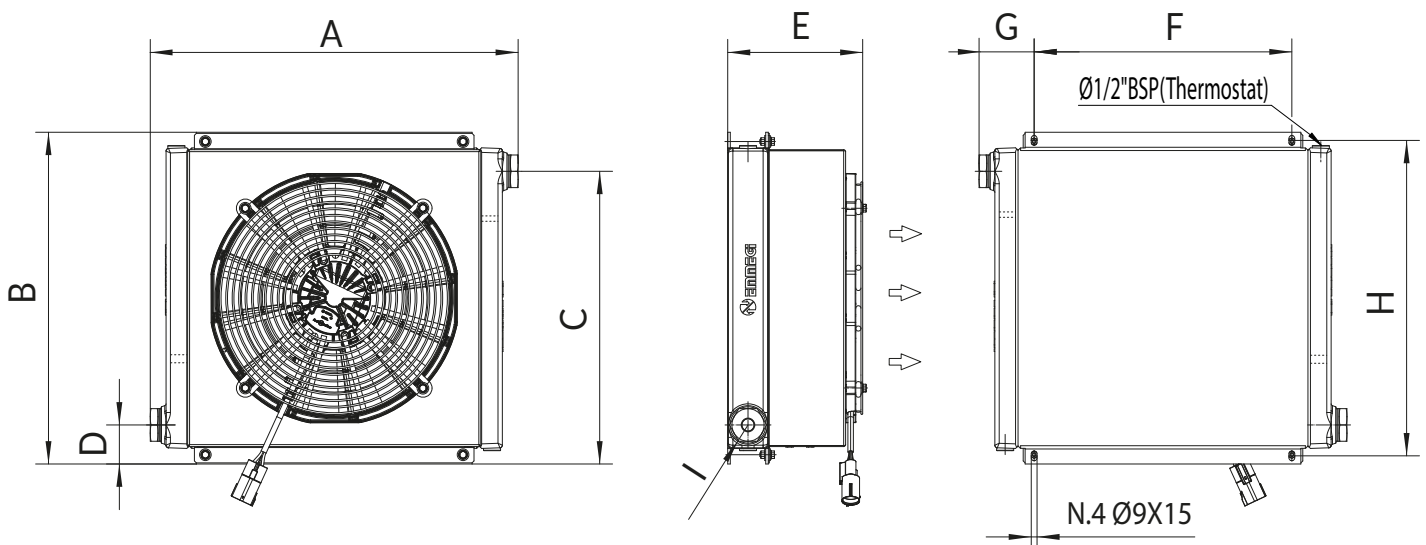




DIAGRAMMA RENDIMENTO CON OLIO ISOVG 46 / OIL ISOVG 46 PERFORMANCE

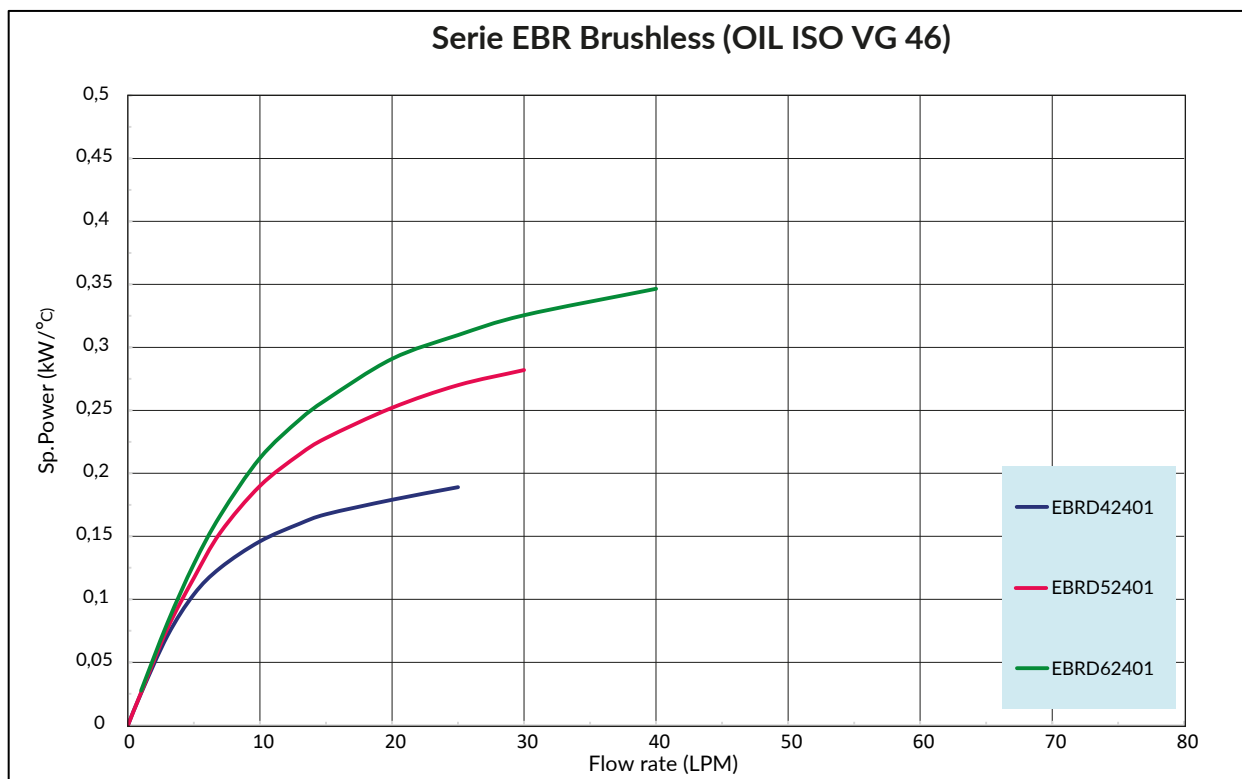
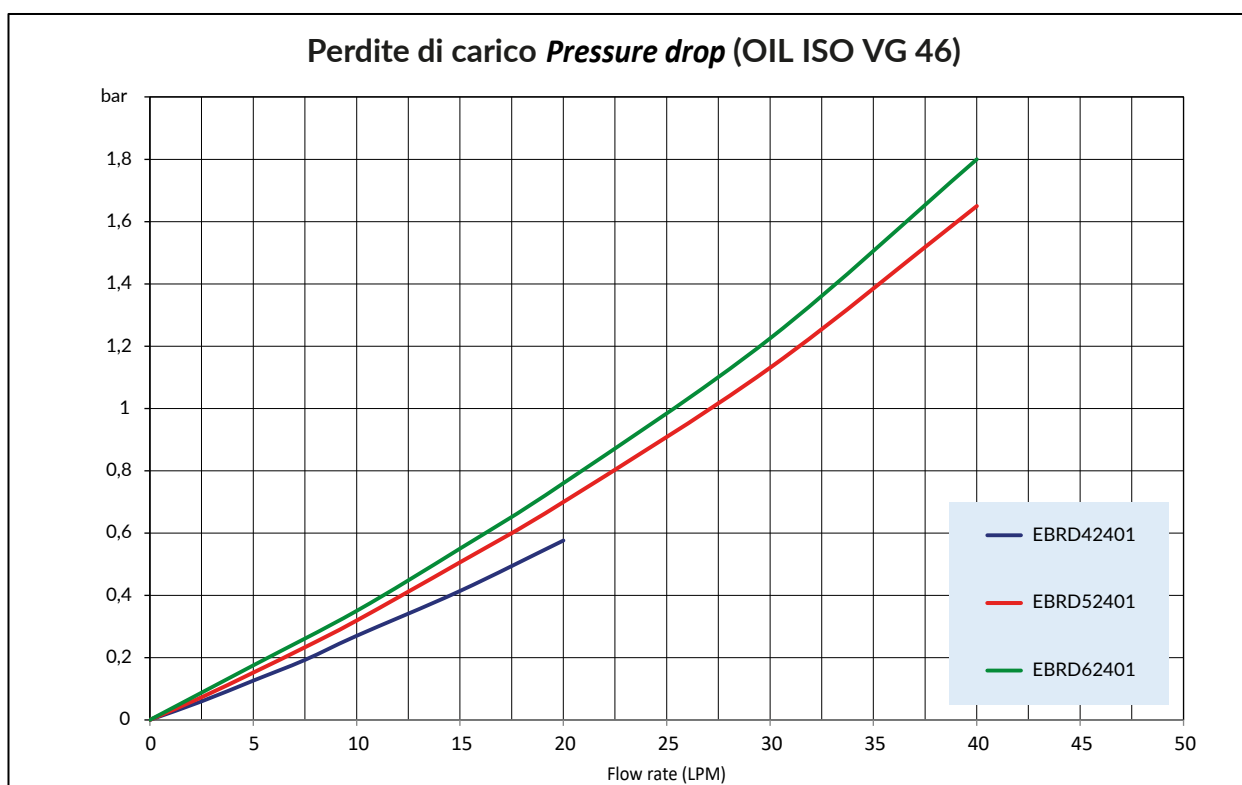


DIAGRAMMA PERDITE DI CARICO OLIO ISOVG 46 / OIL ISOVG 46 PRESSURE DROP



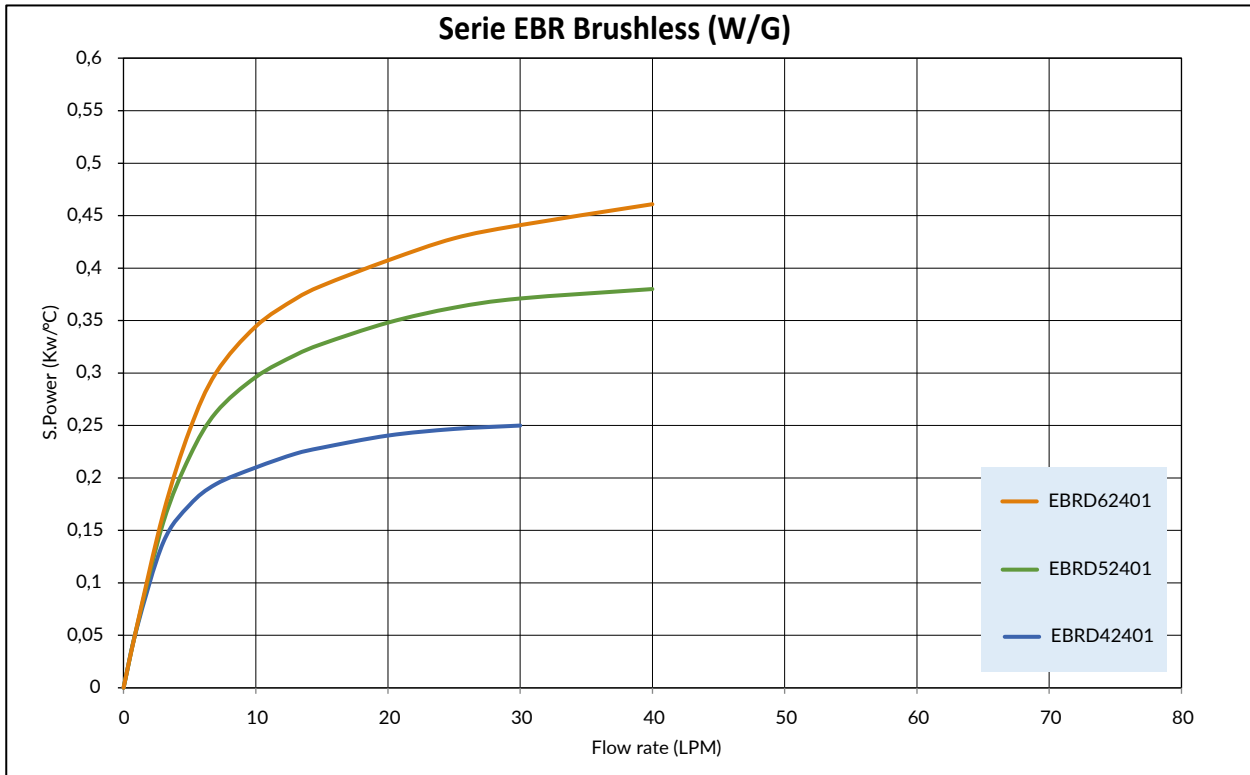
Tolleranza sulla prestazione : ± 5% Performance tolerance : ± 5%



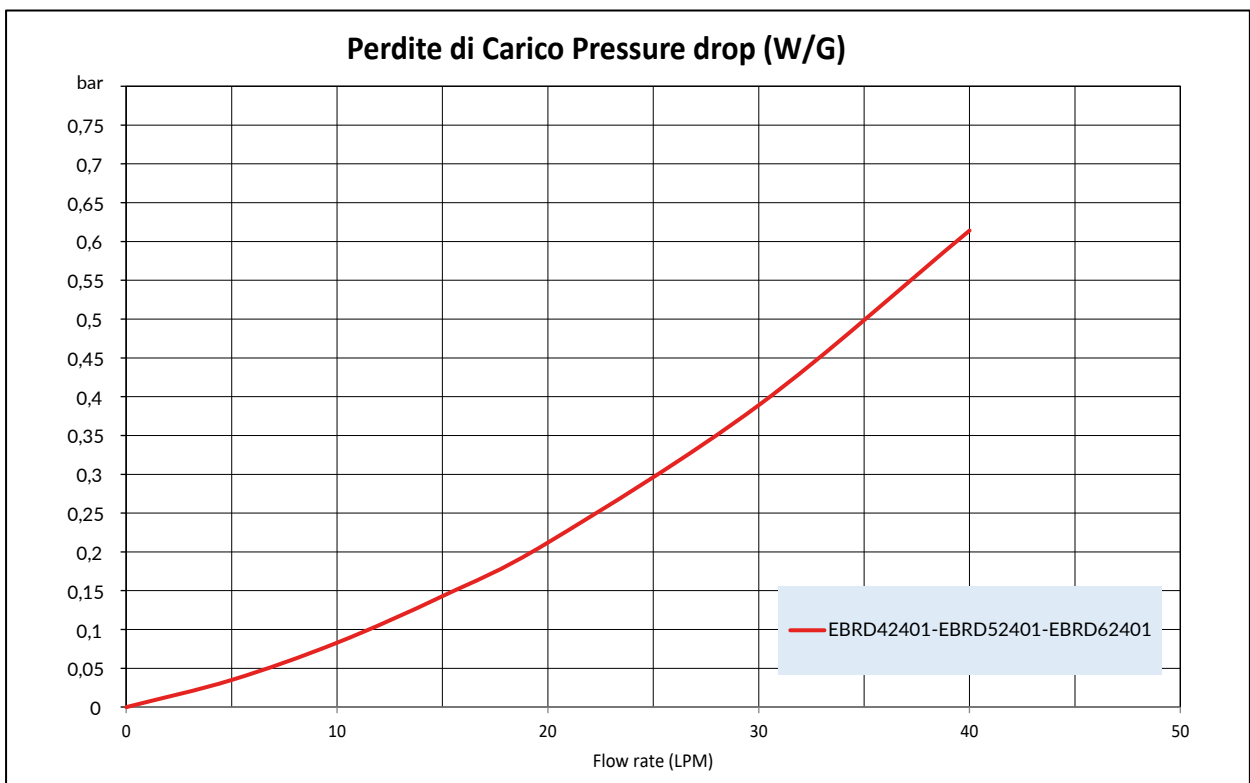
# DC brushless coolers

## EBR D4/D5/D6

### DIAGRAMMA RENDIMENTO CON ACQUA-GLICOLE 50 % / WATER-GLYCOL 50 % PERFORMANCE



### PERDITE DI CAICO CON ACQUA-GLICOLE 50 % / WATER-GLYCOL 50 % PRESSURE DROP



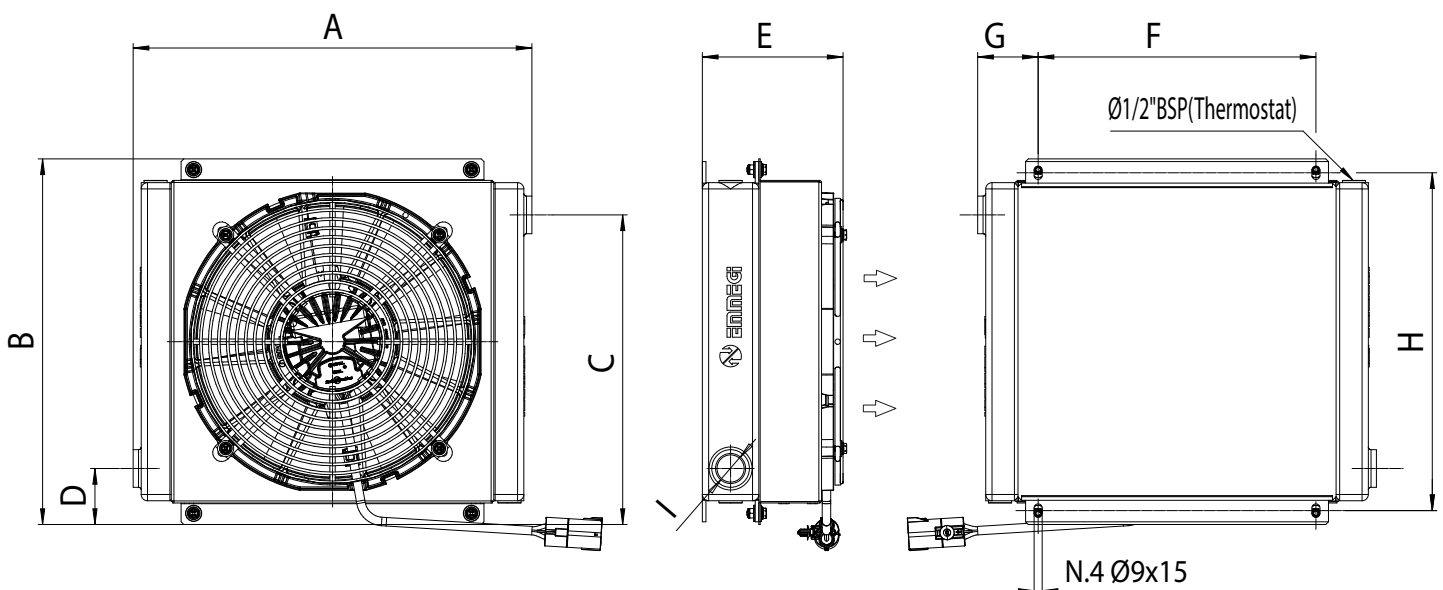
Tolleranza sulla prestazione : ± 5% Performance tolerance : ± 5%





Cod. Emmegi Par Number	Dati tecnici / Technical data						
	Voltage (V)	Amp. rating (A)	Plug	Fan (number)	db(A)	Approx Weight (Kg)	Cooler volume (l)
EBR242401	24	16	DUCON 2.8	1	78	12	1
EBR302401	24	32	YAZAKI	1	85.5	15	1.6
EBR402401	24	23	YAZAKI	1	79.5	21	2.7
EBR442401	24	23	YAZAKI	1	79.5	26	6.6

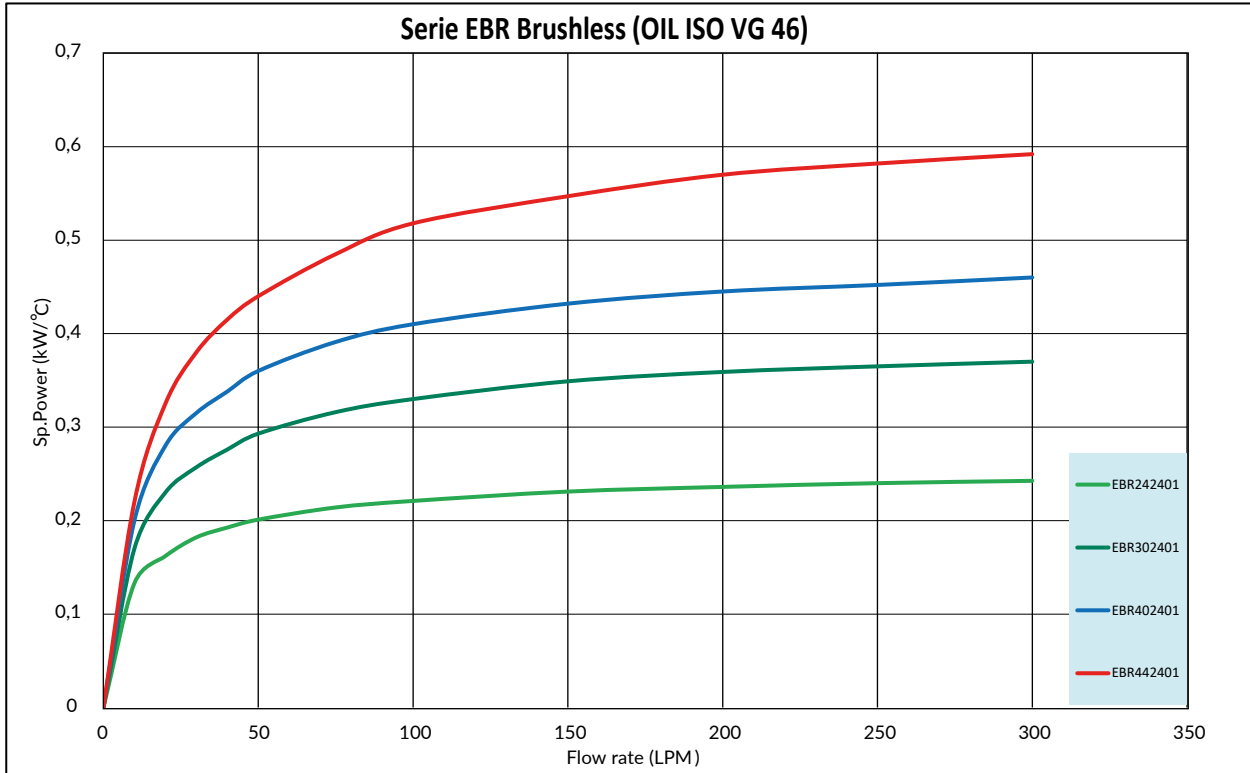
Cod. Emmegi Par Number	Dimensioni / Dimension								
	A	B	C	D	E	F	G	H	I
EBR242401	380	340	281	59	219	240	70	315	1" BSP
EBR302401	455	402	342	59	208	310	67.5	377	1" BSP
EBR402401	540	512	450	61.5	210	400	70	487	1 1/4" BSP
EBR442401	600	508	430.5	77.5	240	400	100	483	1 1/4" BSP



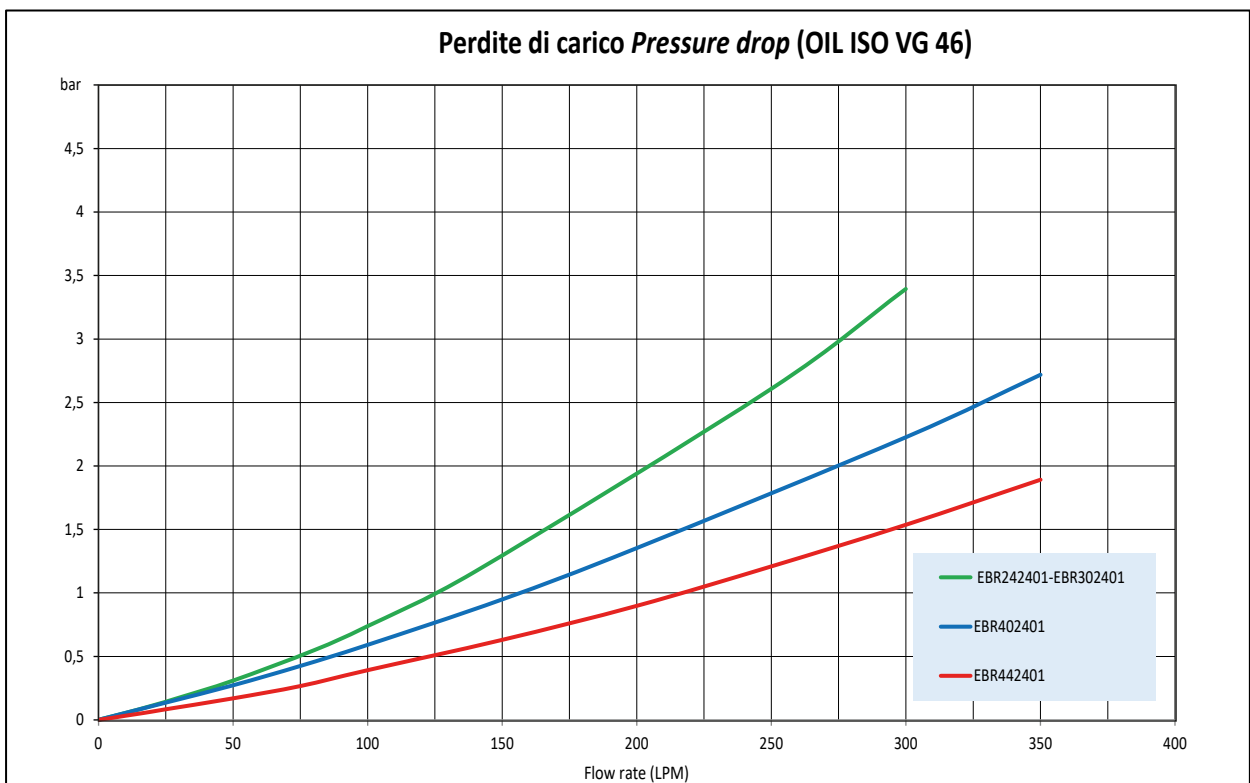


# DC brushless coolers EBR 24/30/40/44

## DIAGRAMMA RENDIMENTO CON OLIO ISOVG 46 / OIL ISOVG 46 PERFORMANCE



## DIAGRAMMA PERDITE DI CARICO OLIO ISOVG 46 / OIL ISOVG 46 PRESSURE DROP



Tolleranza sulla prestazione :  $\pm 5\%$  Performance tolerance :  $\pm 5\%$



DIAGRAMMA RENDIMENTO ACQUA-GLICOLE 50% / WATER-GLYCOL 46 PERFORMANCE

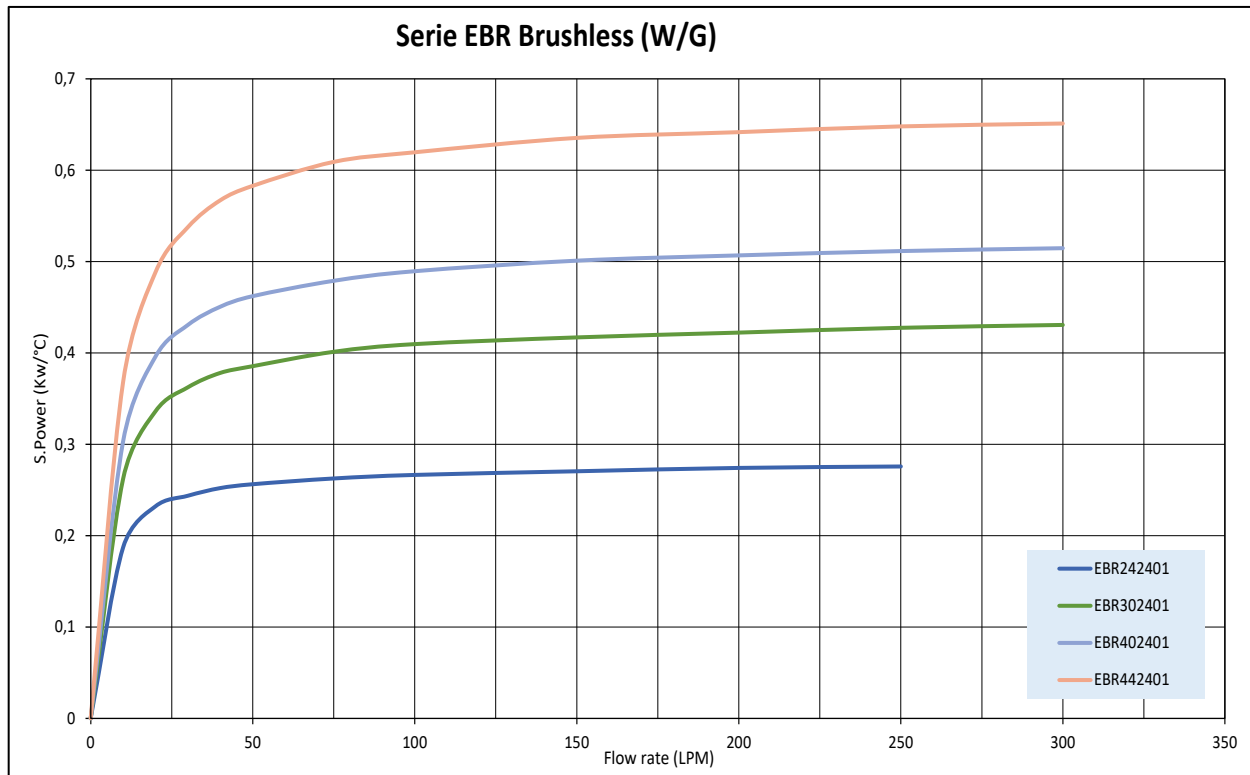
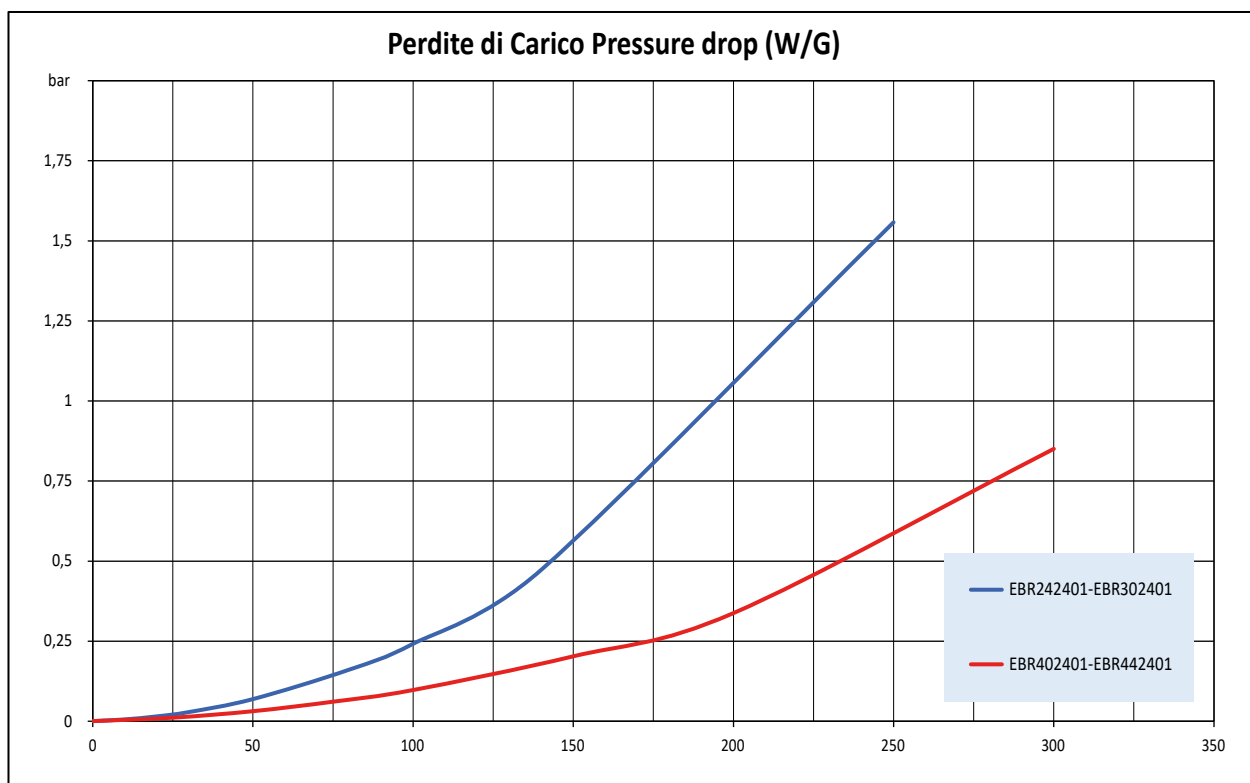


DIAGRAMMA PERDITE DI CARICO ACQUA-GLICOLE 50% / WATER-GLYCOL 50% PERFORMANCE



Tolleranza sulla prestazione : ± 5% Performance tolerance : ± 5%



# DC brushless coolers EBR 60/70

Cod. Emmegi Par Number	Dati tecnici / Technical data						
	Voltage (V)	Amp. rating (A)	Plug	Fan (number)	db(A)	Approx Weight (Kg)	Cooler volume (l)
EBR602401	24	32 (x2)	YAZAKI	2	88.5	31	3.2
EBR702401	24	23 (x2)	YAZAKI	2	88.5	43	5.4

Cod. Emmegi Par Number	Dimensioni / Dimension									
	A	B	C	D	E	F	G	H	I	J
EBR602401	782	470	208	650	395	45	250	25	1 1/2" BSP	100
EBR702401	982	565	208	850	490	45	250	25	1 1/2" BSP	100

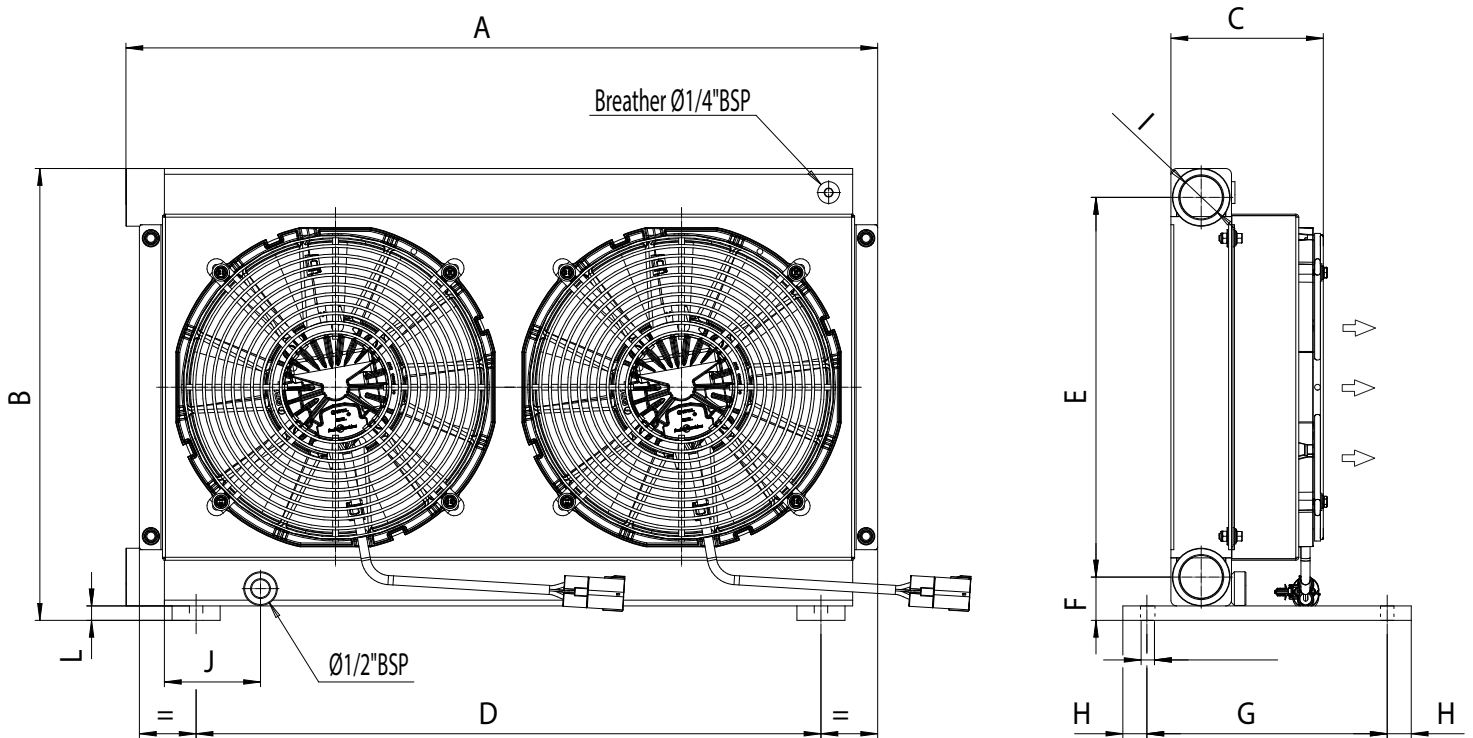




DIAGRAMMA RENDIMENTO CON OLIO ISOVG 46 / OIL ISOVG 46 PERFORMANCE

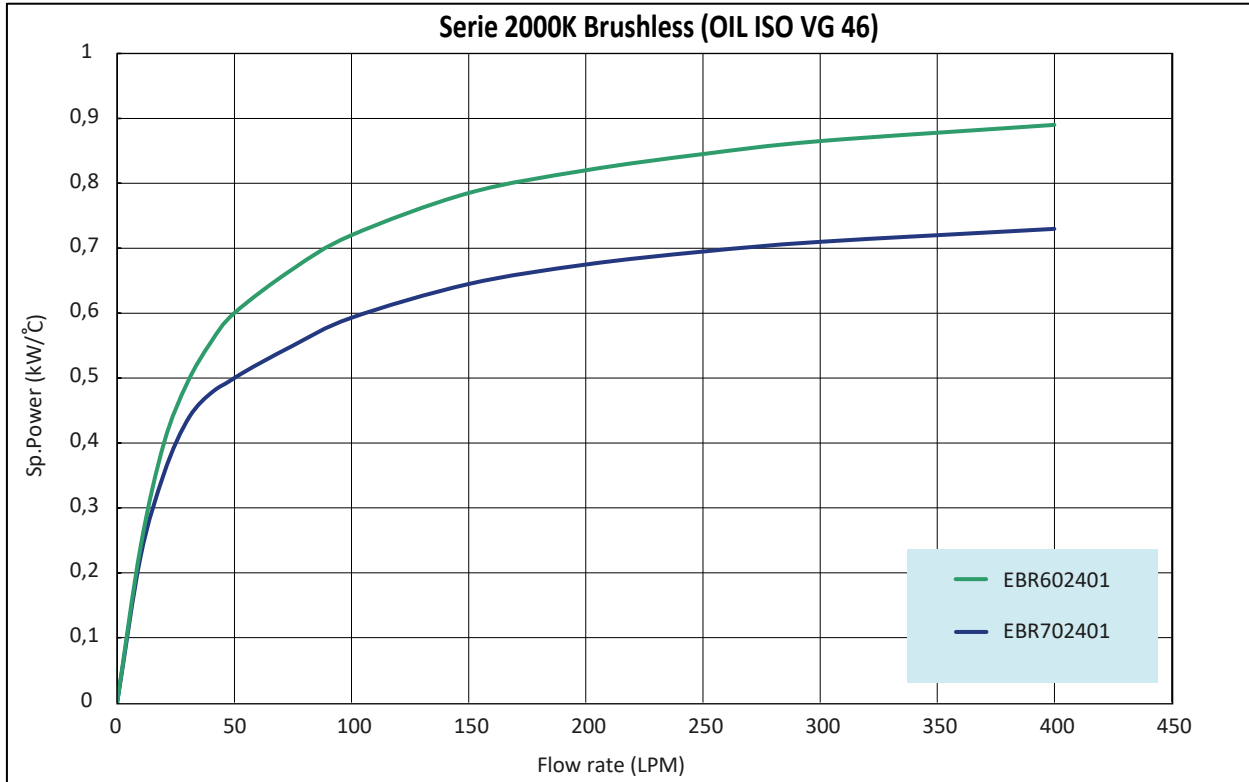
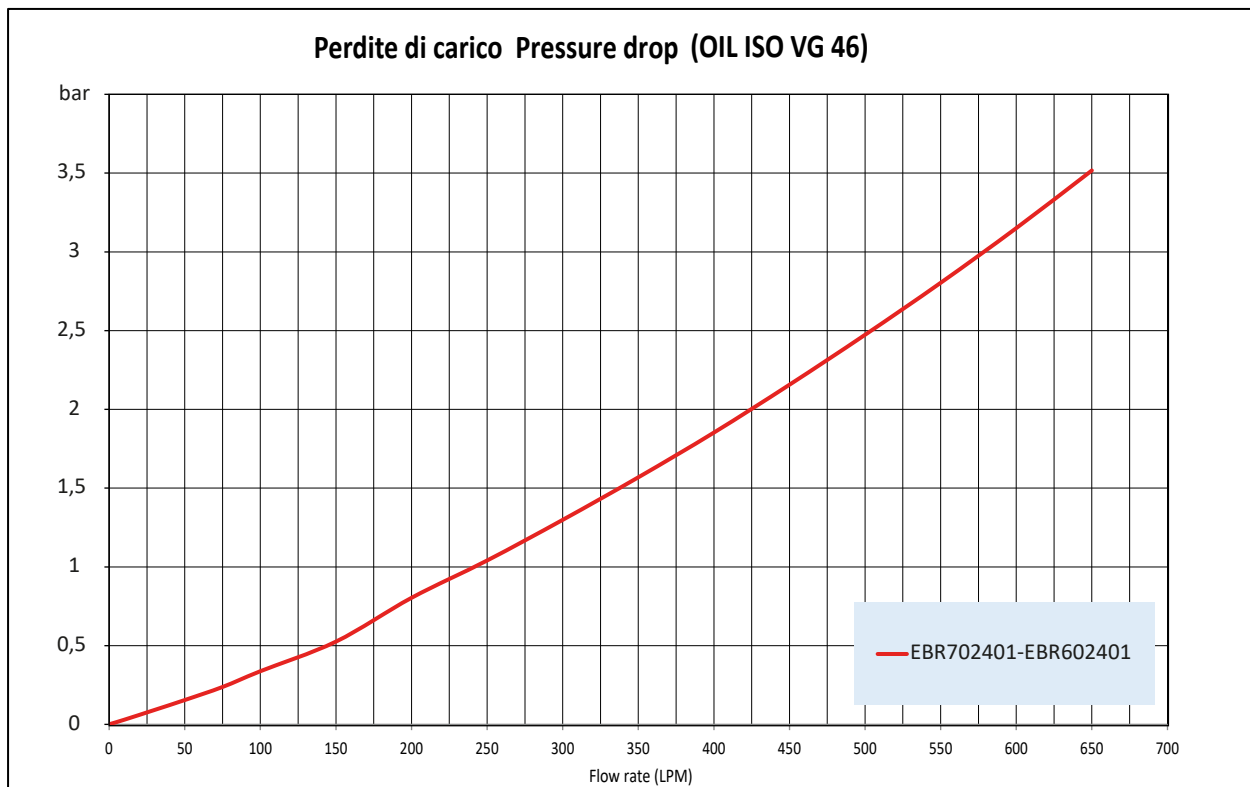


DIAGRAMMA PERDITE DI CARICO OLIO ISOVG 46 / OIL ISOVG 46 PRESSURE DROP

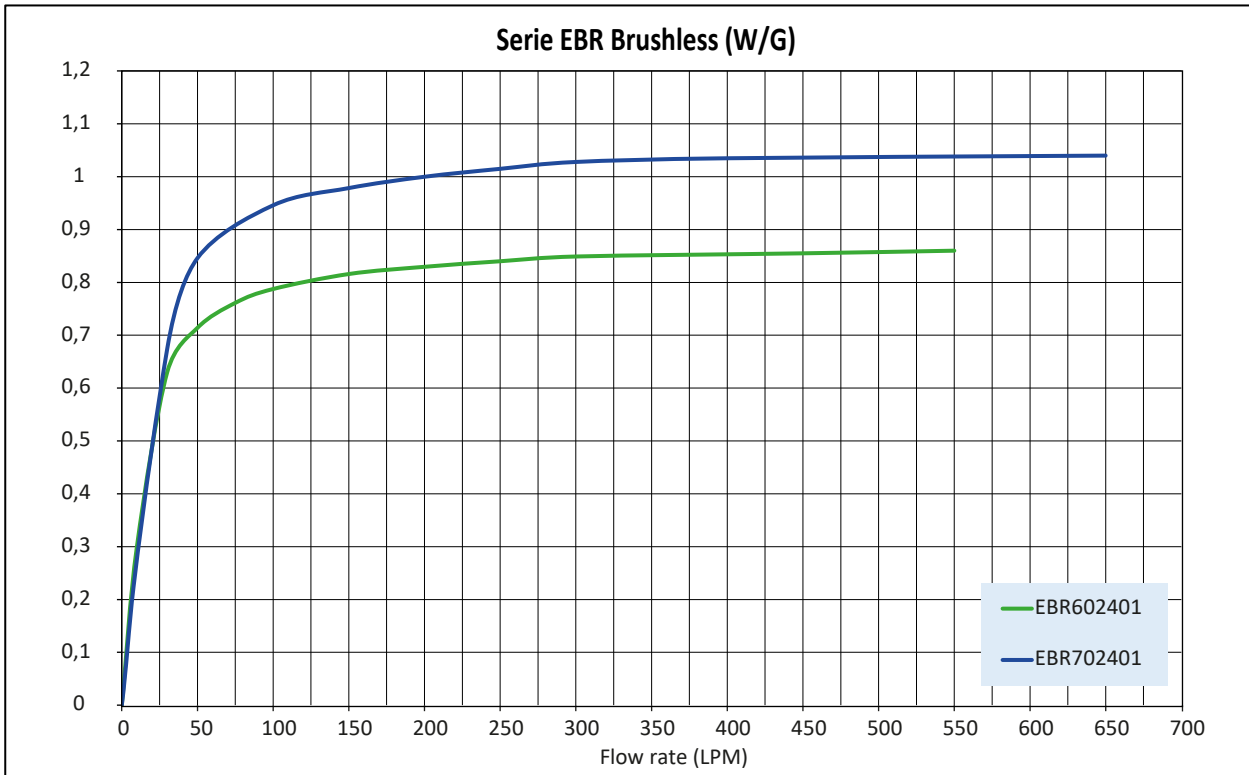


Tolleranza sulla prestazione : ± 5% Performance tolerance : ± 5%

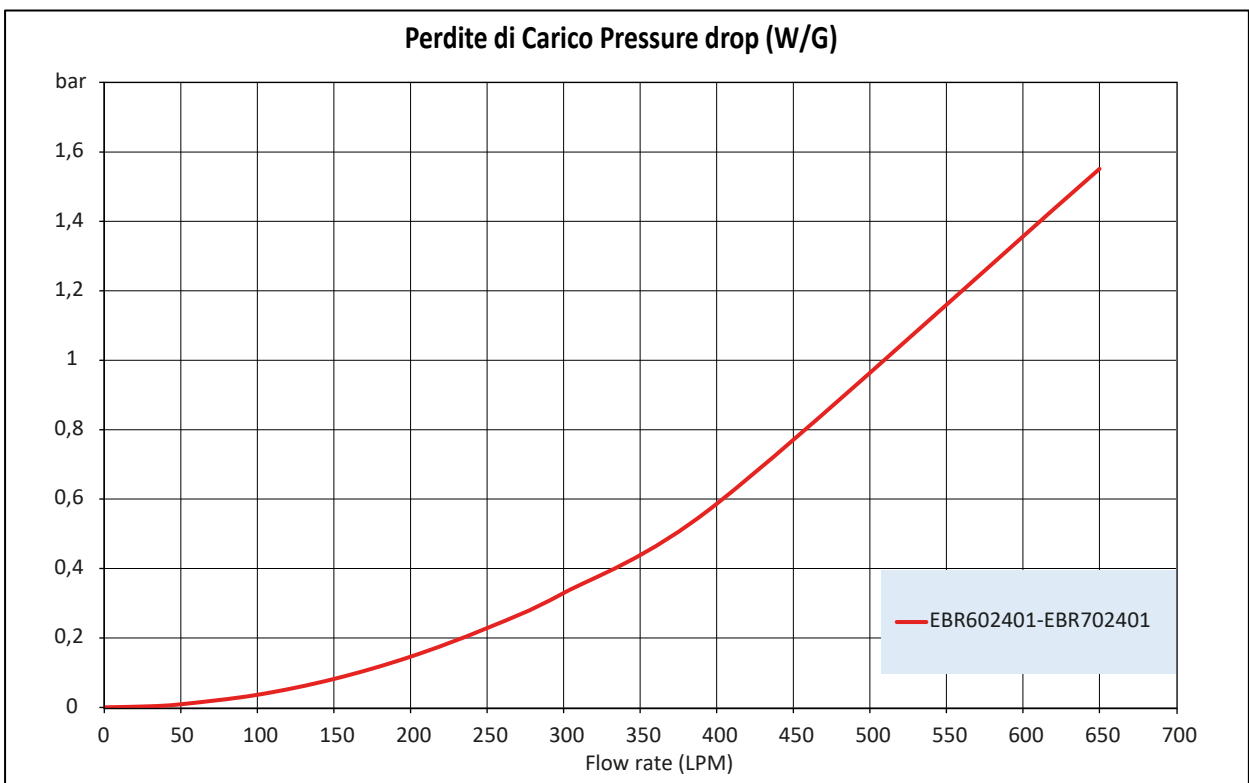


# DC brushless coolers EBR 60/70

## DIAGRAMMA RENDIMENTO CON ACQUA-GLICOLE 50 % / WATER-GLYCOL 50 % PERFORMANCE



## PERDITE DI CARICO CON ACQUA-GLICOLE 50 % / WATER-GLYCOL 50 % PRESSURE DROP

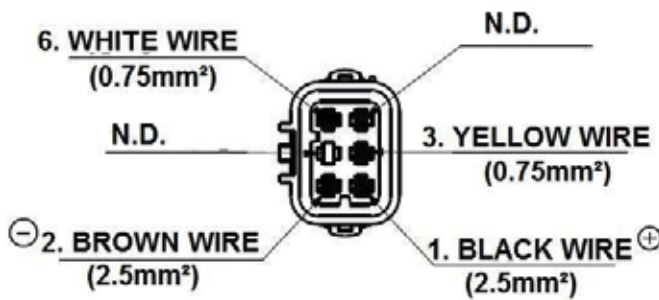


Tolleranza sulla prestazione :  $\pm 5\%$  Performance tolerance :  $\pm 5\%$



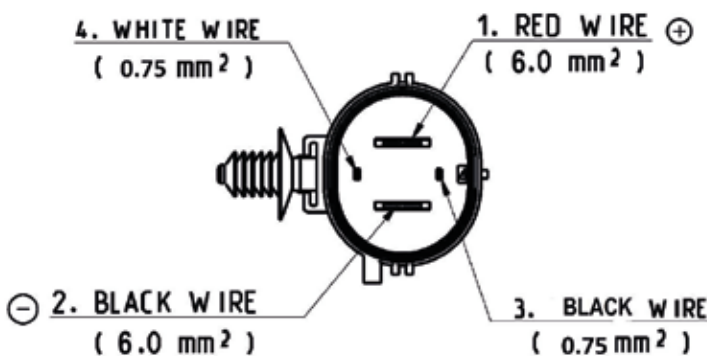
## Collegamenti / Connectors and wires.

Model : EBRD42401 / EBR242401



DUCON 2.8	
1.Nero/Black :	+D
2.Marrone/Brown :	-D
3.Giallo/Yellow :	PWM / E
6.Bianco/White :	FO

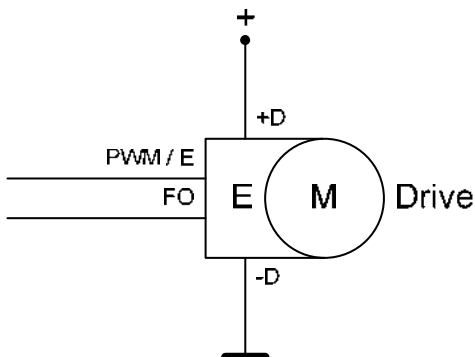
Model : EBRD52401/EBRD62401/EBR302401/EBR402401/EBR442401/EBR602401/EBR702401



YAZAKI	
1.Rosso/Red :	+D
2.Nero/Black :	-D
3.Giallo/Yellow :	FO
4.Bianco/White :	PWM / E

## Collegamento elettrico / Drive diagram.

Lo schema di collegamento è indicato nella figura qui di seguito / The drive diagram is shown below.



Legenda / Key:	
E :	Electronica integrata / integrated electronics
M :	Motore elettrico / Motor
Drive :	M+E
PWM / E :	controllo elettronico in ingresso / control input
FO :	lettura elettronica output / feedback output

The signal pin PWM / E is used to control the Drive mode, it is the control input.

The signal pin FO is used to notify the Drive status.

