

# Scambiatori Aria-olio Serie MOBILE

*Air-oil heat-exchangers  
MOBILE Series*



**ENNEGI**





## APPLICAZIONE

## APPLICATION



Gli scambiatori **SERIE MOBILE EMMEGI** vengono utilizzati per il raffreddamento del circuito oleodinamico delle macchine movimento terra e delle macchine agricole. Questa gamma si contraddistingue per l'ottimo rapporto prezzo / efficienza, mantenendo la stessa qualità che ha sempre contraddistinto il prodotto EMMEGI. Per le versioni MS MA si consiglia l'uso di una valvola di by-pass per preservare lo scambiatore da possibili sovrappressioni in fase di avviamento dell' impianto a freddo, causa viscosità elevata dell' olio.

**EMMEGI AIR-OIL HEAT EXCHANGERS MOBILE SERIES** are used for oil hydraulic systems cooling on moving and agricultural machines. This serie has an optimum price / efficiency relation, keeping the same quality that has always identified Emmegi's products. For MS and MA versions we recommend installing a by-pass valve to protect the exchangers from over-pressure generated when the system is started up due to high oil viscosity.



### Denominazione codice prodotto

### Aria-olio Serie MOBILE

### Ordering code

### Air-oil MOBILE Series

#### MODELLO MODEL

MS1 (MOBILE-S1)  
MS2 (MOBILE-S2)  
MS3 (MOBILE-S3)  
MS4 (MOBILE-S4)  
MS5 (MOBILE-S5)  
MA1 (MOBILE-A1)  
MA2 (MOBILE-A2)  
MA3 (MOBILE-A3)  
MA4 (MOBILE-A4)  
MA5 (MOBILE-A5)  
MV1 (MOBILE-V1)  
MV2 (MOBILE-V2)  
MV3 (MOBILE-V3)  
MV4 (MOBILE-V4)  
MV5 (MOBILE-V5)  
MW1 (MOBILE-W1)  
MW2 (MOBILE-W2)  
MW3 (MOBILE-W3)  
MW4 (MOBILE-W4)  
MW5 (MOBILE-W5)

2

MS1

12

2

01

#### TIPO DI MOTORIZZAZIONE FAN MOTOR TYPE

12 DC 12V  
24 DC 24V

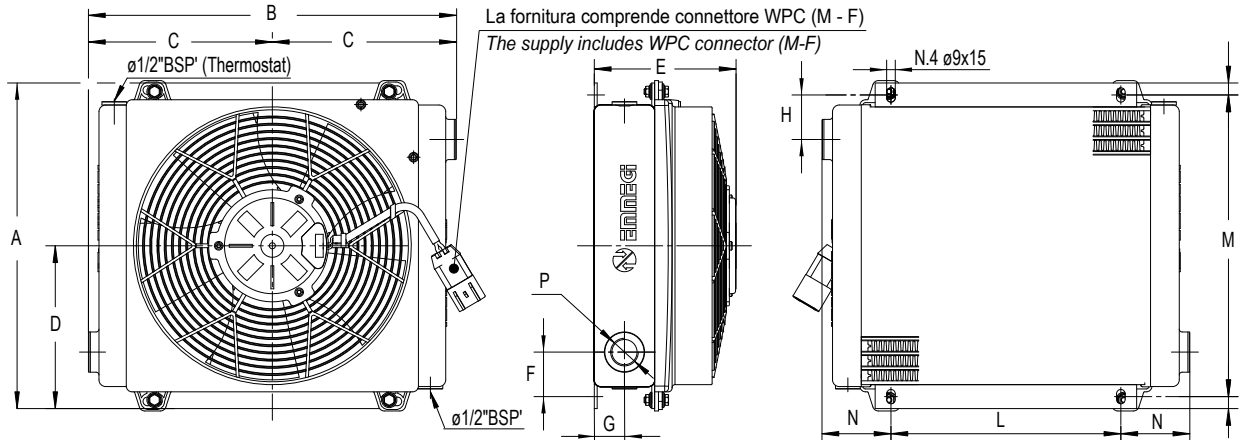
#### TERMOSTATI THERMOSTATS

1 Termostato fisso Fixed thermostat 40-28°  
2 Termostato fisso Fixed thermostat 50-38°  
3 Termostato fisso Fixed thermostat 60-48°  
4 Termostato fisso Fixed thermostat 70-58°  
5 Termostato fisso Fixed thermostat 80-68°  
6 Termostato fisso Fixed thermostat 90-78°

#### TIPO DI VENTILAZIONE VENTILATING TYPE

01 Aspirante Suction air flow  
02 Soffiante Blowing air flow



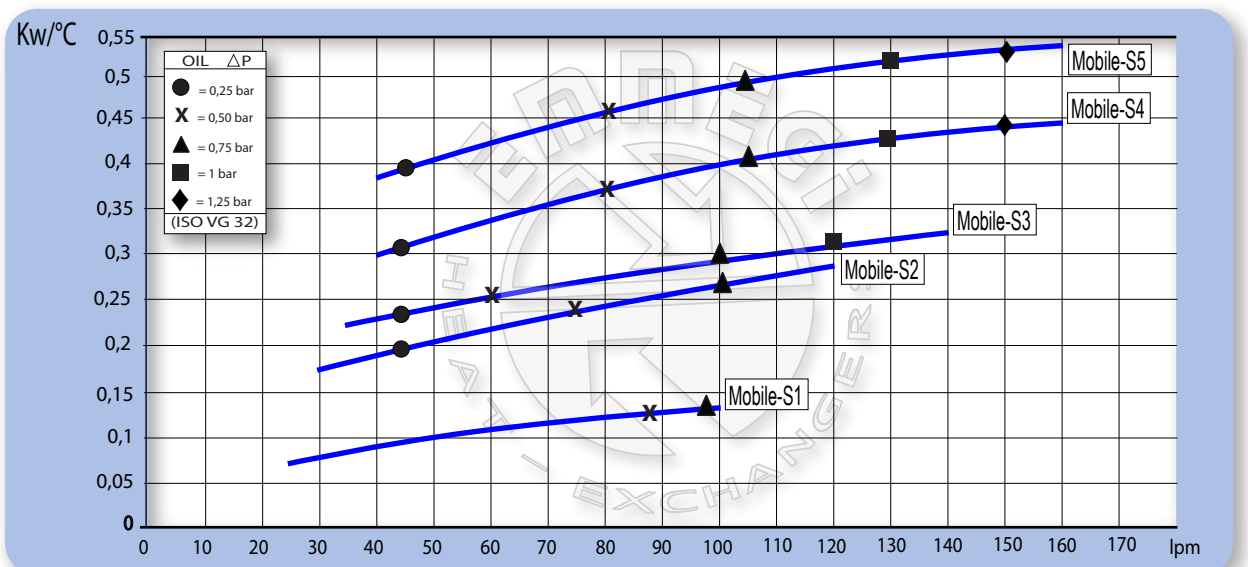


Le dimensioni di ingombro e le caratteristiche tecniche non sono impegnative - Over-all dimensions and technical characteristic are not binding

CODICE CODE	Dimensioni / Dimensions											
	A	B	C	D	E	F	G	H	L	M	N	P
2MS112###	243	309	154.5	121.5	147	46	31.5	46	150	223	79.5	Ø 1" BSP
2MS212###	340	378	192	170	148	46.5	31.5	46.5	240	315	72	Ø 1" BSP
2MS312###	405	445	222.5	201.5	188	48.5	31.5	48.5	310	380	67.5	Ø 1" BSP
2MS412###	511	540	270	255.5	188	48.5	31.5	48.5	400	486	70	Ø 1 1/4" BSP
2MS512###	511	600	300	255.5	219	65	47	65	400	483	100	Ø 1 1/4" BSP
2MS124###	243	309	154.5	121.5	147	46	31.5	46	150	223	79.5	Ø 1" BSP
2MS224###	340	378	192	170	148	46.5	31.5	46.5	240	315	72	Ø 1" BSP
2MS324###	405	445	222.5	201.5	188	48.5	31.5	48.5	310	380	67.5	Ø 1" BSP
2MS424###	511	540	270	255.5	188	48.5	31.5	48.5	400	486	70	Ø 1 1/4" BSP
2MS524###	511	600	300	255.5	219	65	47	65	400	483	100	Ø 1 1/4" BSP

CODICE CODE	Dati tecnici / Technical Data									
	V	Kw	A	rpm	Ø Fan	dB (A)	IP	It	Kg	
2MS112###	12V DC	0,09	7,5	3950	190	73	68	0,6	5,3	
2MS212###	12V DC	0,09	7,7	2410	280	71	68	1	7,5	
2MS312###	12V DC	0,19	15,6	2840	305	74	68	1,6	10,5	
2MS412###	12V DC	0,18	15,2	2210	385	76	68	2,7	16,5	
2MS512###	12V DC	0,23	19	2270	385	73	68	6,6	22,4	
2MS124###	24V DC	0,08	3,3	3900	190	76	68	0,6	5,3	
2MS224###	24V DC	0,08	3,4	2350	280	73	68	1	7,5	
2MS324###	24V DC	0,18	7,6	3040	305	79	68	1,6	10,5	
2MS424###	24V DC	0,19	8,1	2390	385	79	68	2,7	16,7	
2MS524###	24V DC	0,23	9,9	2420	385	75	68	6,6	22,4	

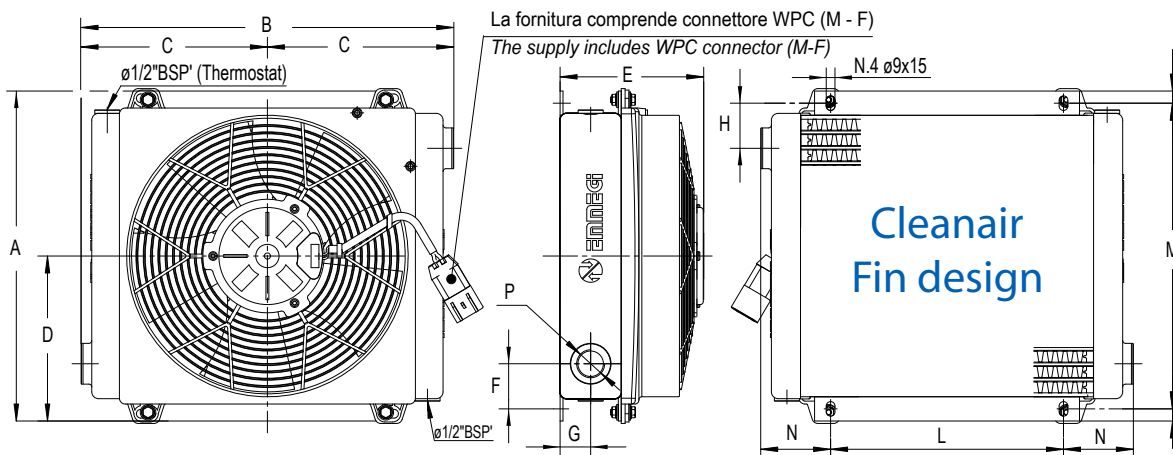
Diagramma rendimento & Perdite di carico (ISO VG 32) Performance & Pressure drop diagram (ISO VG 32)



Fattore di correzione -F-(perdite di carico) Correction factor -F-(Pressure drop)

cSt	10	15	20	30	40	50	60	80	100	200	300
F	0,5	0,65	0,77	1	1,2	1,4	1,6	1,9	2,1	3,3	4,3



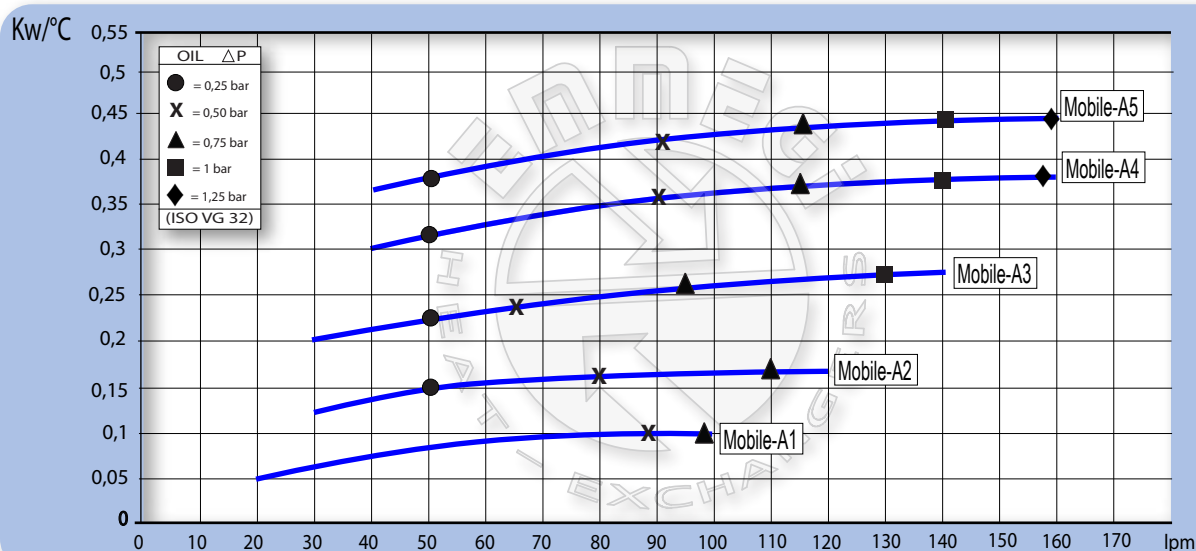


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CODICE CODE	Dimensioni / Dimensions											
	A	B	C	D	E	F	G	H	L	M	N	P
2MA112###	243	309	154.5	121.5	147	46	31.5	46	150	223	79.5	Ø 1" BSP
2MA212###	340	378	192	170	148	46.5	31.5	46.5	240	315	72	Ø 1" BSP
2MA312###	405	445	222.5	201.5	188	48.5	31.5	48.5	310	380	67.5	Ø 1" BSP
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CODICE CODE	Dati tecnici / Technical Data									
	V	Kw	A	rpm	Ø Fan	dB (A)	IP	lt	Kg	
2MA112###	12V DC	0,09	7,6	4127	190	73	68	0,6	5,3	
2MA212###	12V DC	0,1	7,7	2550	280	71	68	1	7,5	
2MA312###	12V DC	0,19	15,8	3110	305	74	68	1,6	10,5	
2MA412###	12V DC	0,15	15,5	2280	385	76	68	2,7	16,5	
2MA512###	12V DC	0,23	19,4	2340	385	73	68	6,6	22,4	
2MA124###	24V DC	0,08	3,4	3940	190	76	68	0,6	5,3	
2MA224###	24V DC	0,08	3,0	2420	280	73	68	1	7,5	
2MA324###	24V DC	0,16	6,7	3124	305	79	68	1,6	10,5	
2MA424###	24V DC	0,17	7,3	2460	385	79	68	2,7	16,7	
2MA524###	24V DC	0,22	9,0	2500	385	75	68	6,6	22,4	

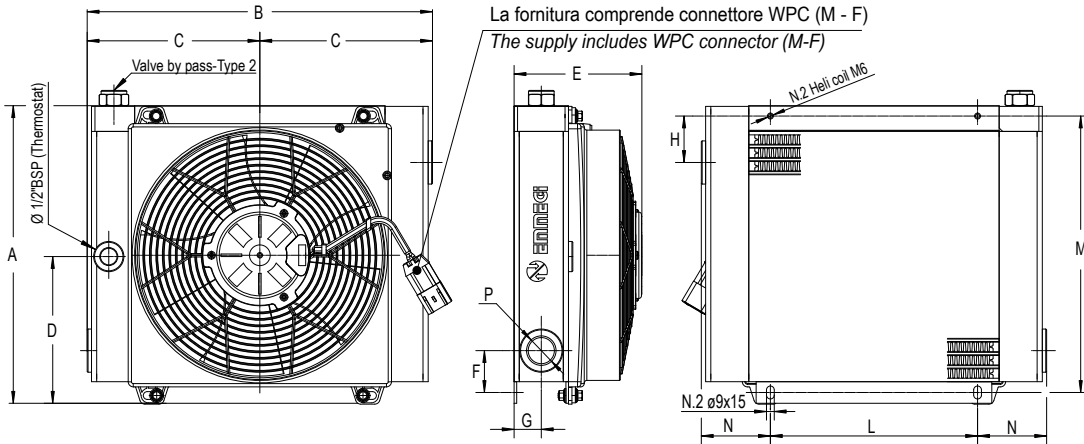
Diagramma rendimento & Perdite di carico ( ISO VG 32 ) Performance & Pressure drop diagram ( ISO VG 32)



Fattore di correzione -F-(perdite di carico) Correction factor -F- (Pressure drop)

cSt	10	15	20	30	40	50	60	80	100	200	300
F	0,5	0,65	0,77	1	1,2	1,4	1,6	1,9	2,1	3,3	4,3

## Dimensioni Dimensions

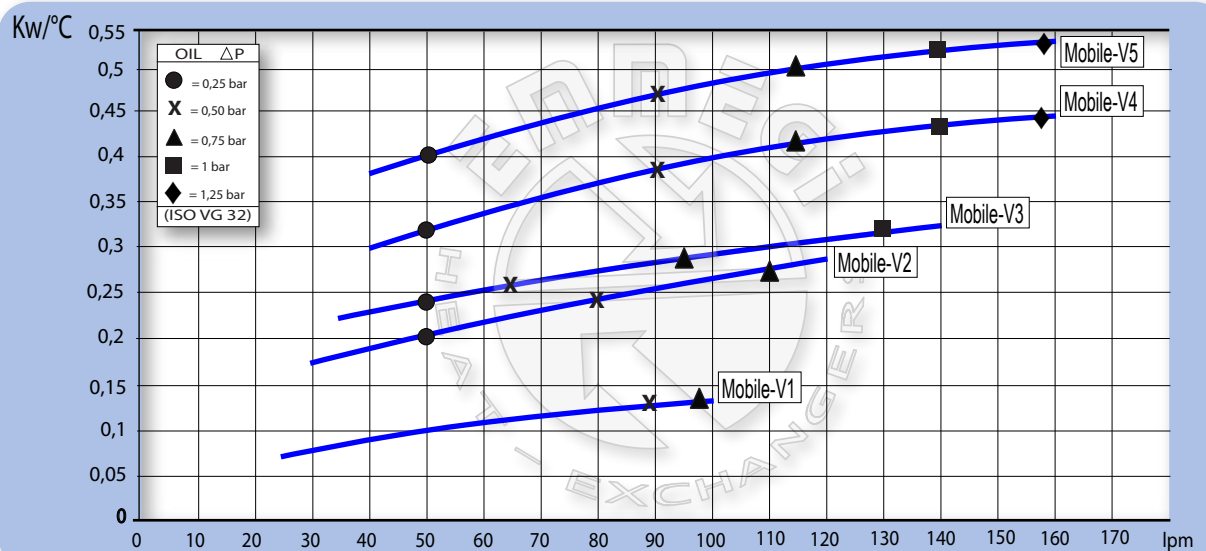


Le dimensioni di ingombro e le caratteristiche tecniche non sono impegnative - Over-all dimensions and technical characteristic are not binding

CODICE CODE	Dimensioni / Dimensions											
	A	B	C	D	E	F	G	H	L	M	N	P
2MV112###	252	325	162.5	121.5	146	46.5	31.5	46	150	223.5	87.5	Ø 1" BSP
2MV212###	344	400	200	170	148	48.5	31.5	53.5	240	320	80	Ø 1" BSP
2MV312###	409	465	232.5	210.5	188	48.5	31.5	53.5	310	385	77.5	Ø 1" BSP
2MV412###	515	566	283	254.5	188	48.5	31.5	44.5	400	482	83	Ø 1 1/4" BSP
2MV512###	515	600	300	254.5	219	65	47	65	400	482	100	Ø 1 1/4" BSP
2MV124###	252	325	162.5	121.5	146	46.5	31.5	46	150	223.5	87.5	Ø 1" BSP
2MV224###	344	400	200	170	148	48.5	31.5	53.5	240	320	80	Ø 1" BSP
2MV324###	409	465	232.5	210.5	188	48.5	31.5	53.5	310	385	77.5	Ø 1" BSP
2MV424###	515	566	283	254.5	188	48.5	31.5	44.5	400	482	83	Ø 1 1/4" BSP
2MV524###	515	600	300	254.5	219	65	47	65	400	482	100	Ø 1 1/4" BSP

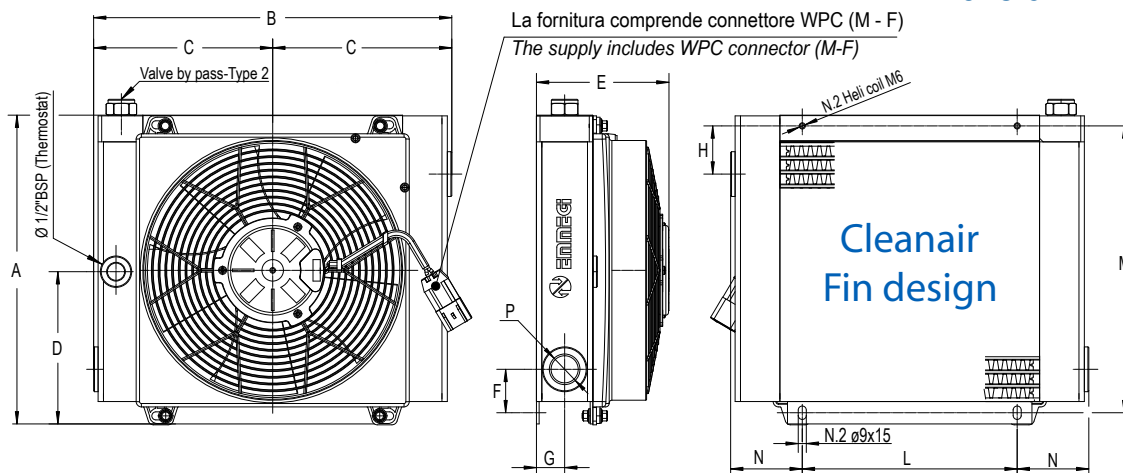
CODICE CODE	Dati tecnici / Technical Data									
	V	Kw	A	rpm	Ø Fan	dB (A)	IP	lt	Kg	
2MV112###	12V DC	0,09	7,5	3950	190	73	68	0,6	5,3	
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2MV312###	12V DC	0,19	15,6	2810	305	74	68	1,6	10,5	
2MV412###	12V DC	0,18	15,2	2210	385	76	68	2,7	16,5	
2MV512###	12V DC	0,23	19	2270	385	73	68	6,6	22,4	
2MV124###	24V DC	0,08	3,3	3900	190	76	68	0,6	5,3	
2MV224###	24V DC	0,08	3,4	2350	280	73	68	1	7,5	
2MV324###	24V DC	0,18	7,6	3040	305	79	68	1,6	10,5	
2MV424###	24V DC	0,19	8,1	2390	385	79	68	2,7	16,7	
2MV524###	24V DC	0,23	9,9	2420	385	75	68	6,6	22,4	

Diagramma rendimento & Perdite di carico ( ISO VG 32 ) Performance & Pressure drop diagram ( ISO VG 32)



Fattore di correzione -F-(perdite di carico) Correction factor -F- (Pressure drop)

cSt	10	15	20	30	40	50	60	80	100	200	300
F	0,5	0,65	0,77	1	1,2	1,4	1,6	1,9	2,1	3,3	4,3

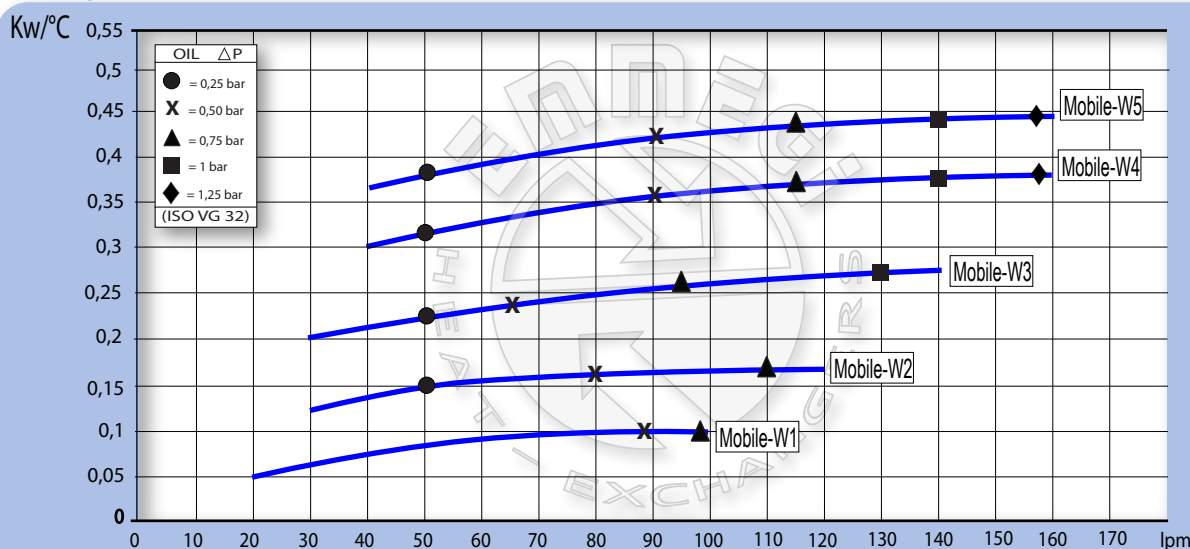


Le dimensioni di ingombro e le caratteristiche tecniche non sono impegnative - Over-all dimensions and technical characteristic are not binding

CODICE CODE	Dimensioni / Dimensions											
	A	B	C	D	E	F	G	H	L	M	N	P
2MW112###	252	325	162.5	121.5	146	46.5	31.5	46	150	223.5	87.5	Ø 1" BSP
2MW212###	344	400	200	170	148	48.5	31.5	53.5	240	320	80	Ø 1" BSP
2MW312###	409	465	232.5	210.5	188	48.5	31.5	53.5	310	385	77.5	Ø 1" BSP
2MW412###	515	566	283	254.5	188	48.5	31.5	44.5	400	482	83	Ø 1 1/4" BSP
2MW512###	515	600	300	254.5	219	65	47	65	400	482	100	Ø 1 1/4" BSP
2MW124###	252	325	162.5	121.5	146	46.5	31.5	46	150	223.5	87.5	Ø 1" BSP
2MW224###	344	400	200	170	148	48.5	31.5	53.5	240	320	80	Ø 1" BSP
2MW324###	409	465	232.5	210.5	188	48.5	31.5	53.5	310	385	77.5	Ø 1" BSP
2MW424###	515	566	283	254.5	188	48.5	31.5	44.5	400	482	83	Ø 1 1/4" BSP
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CODICE CODE	Dati tecnici / Technical Data									
	V	Kw	A	rpm	Ø Fan	dB (A)	IP	lt	Kg	
2MW112###	12V DC	0,09	7,6	4127	190	73	68	0,6	5,3	
2MW212###	12V DC	0,1	7,7	2550	280	71	68	1	7,5	
2MW312###	12V DC	0,19	15,8	3110	305	74	68	1,6	10,5	
2MW412###	12V DC	0,15	15,5	2280	385	76	68	2,7	16,5	
2MW512###	12V DC	0,23	19,4	2340	385	73	68	6,6	22,4	
2MW124###	24V DC	0,08	3,4	3940	190	76	68	0,6	5,3	
2MW224###	24V DC	0,08	3,0	2420	280	73	68	1	7,5	
2MW324###	24V DC	0,16	6,7	3124	305	79	68	1,6	10,5	
2MW424###	24V DC	0,17	7,3	2460	385	79	68	2,7	16,7	
2MW524###	24V DC	0,22	9,0	2500	385	75	68	6,6	22,4	

Diagramma rendimento & Perdite di carico (ISO VG 32) Performance & Pressure drop diagram (ISO VG 32)



Fattore di correzione -F-(perdite di carico) Correction factor -F- (Pressure drop)

cSt	10	15	20	30	40	50	60	80	100	200	300
F	0,5	0,65	0,77	1	1,2	1,4	1,6	1,9	2,1	3,3	4,3

# Termostato bimetallico monocontatto serie TM4

## Bimetallic monocontact thermo-switch series TM4

I termostati serie TM4/A1-TM4/C1 permettono la chiusura o l'apertura di un contatto elettrico al raggiungimento di un valore fisso di temperatura. Il corpo del termostato consente una rotazione di 90° rispetto all'attacco di processo.

The thermo-switches TM4/A1-TM4/C1 series allow the closing or the opening of an electrical contact when the fluid temperature exceeds the set-point value of the thermo-switch. The special design of the body thermo-switch enables a 90° rotation compared to the main power supply connection.



### CARATTERISTICHE TECNICHE TECHNICAL FEATURES

Temperatura d'impiego : da -20°C a 120°C

Working temperature : from -20°C to 120°C

Frequenza di commutazione : 20 cicli/min

Commutation frequency : 20 cycles/min

Precisione d'intervento : +/-3.5°C

Switching accuracy : +/-3.5°C

Valore fisso d'isteresi: 12°C del valore impostato

Fixed hysteresis value : about 12°C

Corpo: ottone

Body material : brass

Attacco di processo: 1/2" BSP (guarnizione incorporata)

Thread connection : 1/2" BSP (seal included)

Pressione massima : 200 bar

Max pressure : 200 bar

Montaggio : in ogni posizione

Mounting : in any position

Peso : 70 gr.

Weight : 70 gr

### CARATTERISTICHE ELETTRICHE ELECTRIC FEATURES

Attacco elettrico secondo norme DIN 43650

Electric connection according to DIN 43650

Protezione elettrica secondo norme DIN 40050 IP65

Electric protection according to DIN 40050 IP65

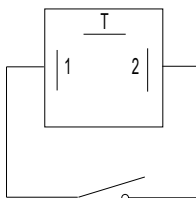
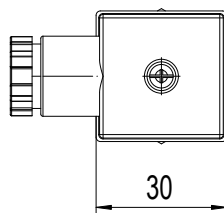
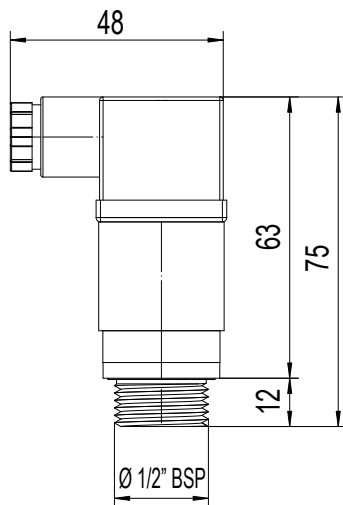
Massimo carico sui contatti

Maximum contact load : AC 220V – 10A

AC 125V – 15A

DC 12V – 10A

DC 24V – 5A

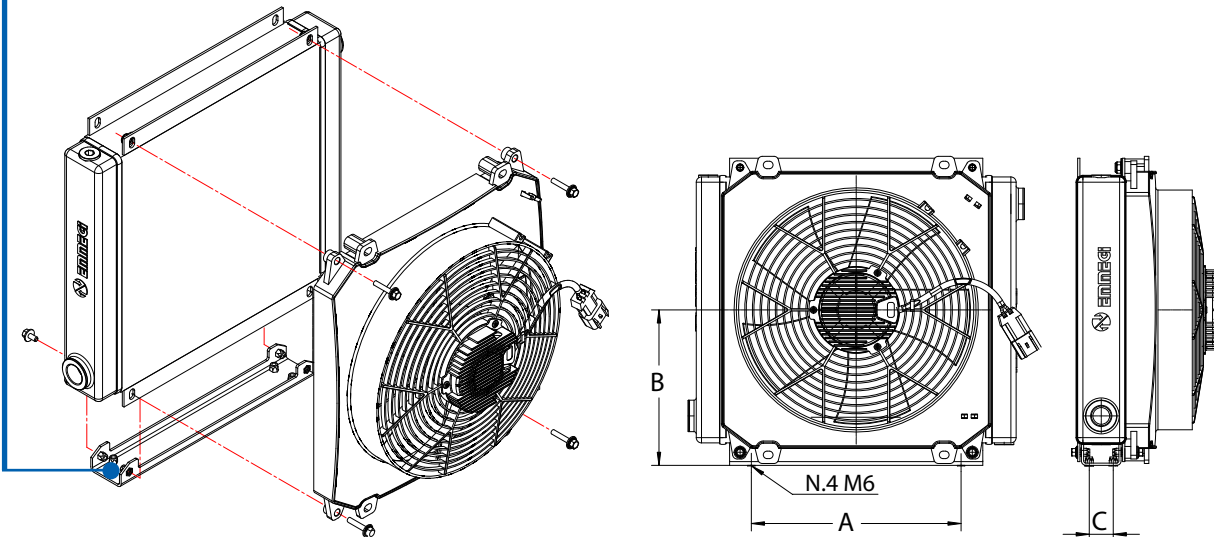


Tipo NA Type NO	Taratura Temperature range	Codice Code
TM 44 / A1	40 - 28 °C	0510540
TM 45 / A1	50 - 38 °C	0510550
TM 46 / A1	60 - 48 °C	0510560
TM 47 / A1	70 - 58 °C	0510570
TM 48 / A1	80 - 68 °C	0510580
TM 49 / A1	90 - 78 °C	0510590
Tipo NC Type NC	Taratura Temperature range	Codice Code
TM 44 / C1	40 - 28 °C	0510340
TM 45 / C1	50 - 38 °C	0510350
TM 46 / C1	60 - 48 °C	0510360
TM 47 / C1	70 - 58 °C	0510370
TM 48 / C1	80 - 68 °C	0510380
TM 49 / C1	90 - 78 °C	0510390



## STAFFE DI FISSAGGIO SERIE 1 (ARTICOLO OPTIONAL)

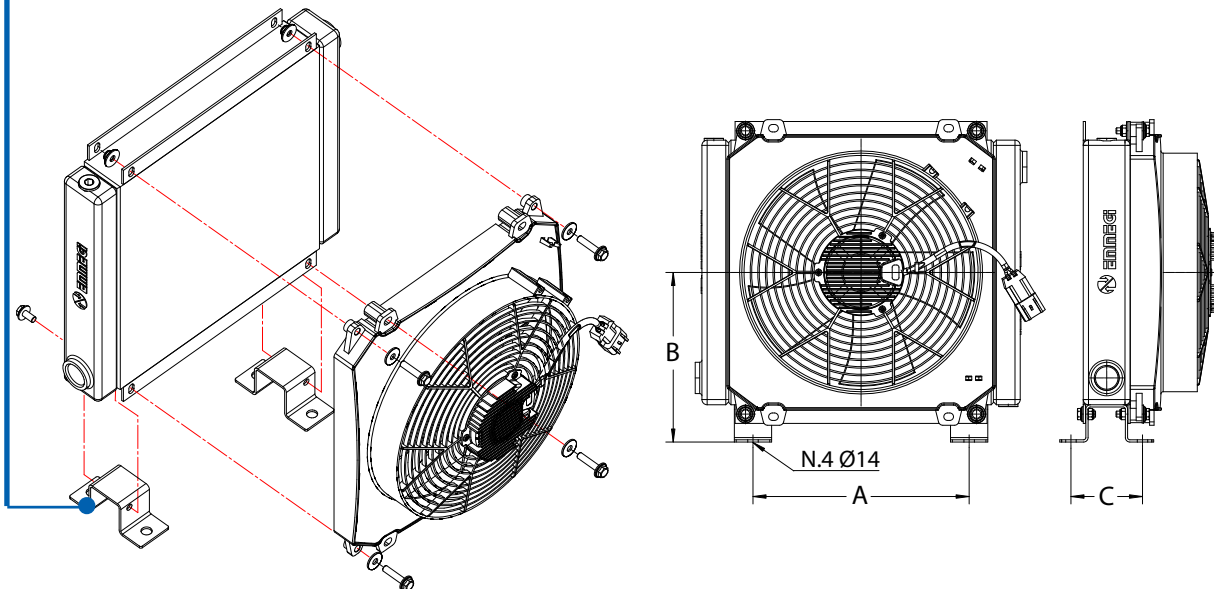
### 1 Series supporting frame (OPTIONAL)



SERIE 1 1 SERIES				
MODELLO MODEL	Dimensioni Dimensions			Staffe di fissaggio / Staffe di fissaggio P/N
	A	B	C	
MS1/MA1/MV1/MW1	170	124	32	0519610
MS2/MA2/MV2/MW2	210	173	32	0519620
MS3/MA3/MV3/MW3	280	204	32	0519630
MS4/MA4/MV4/MW4	380	258	32	0519640
MS5/MA5/MV5/MW5	380	258	64	0519650

## STAFFE DI FISSAGGIO SERIE 2 (ARTICOLO OPTIONAL)

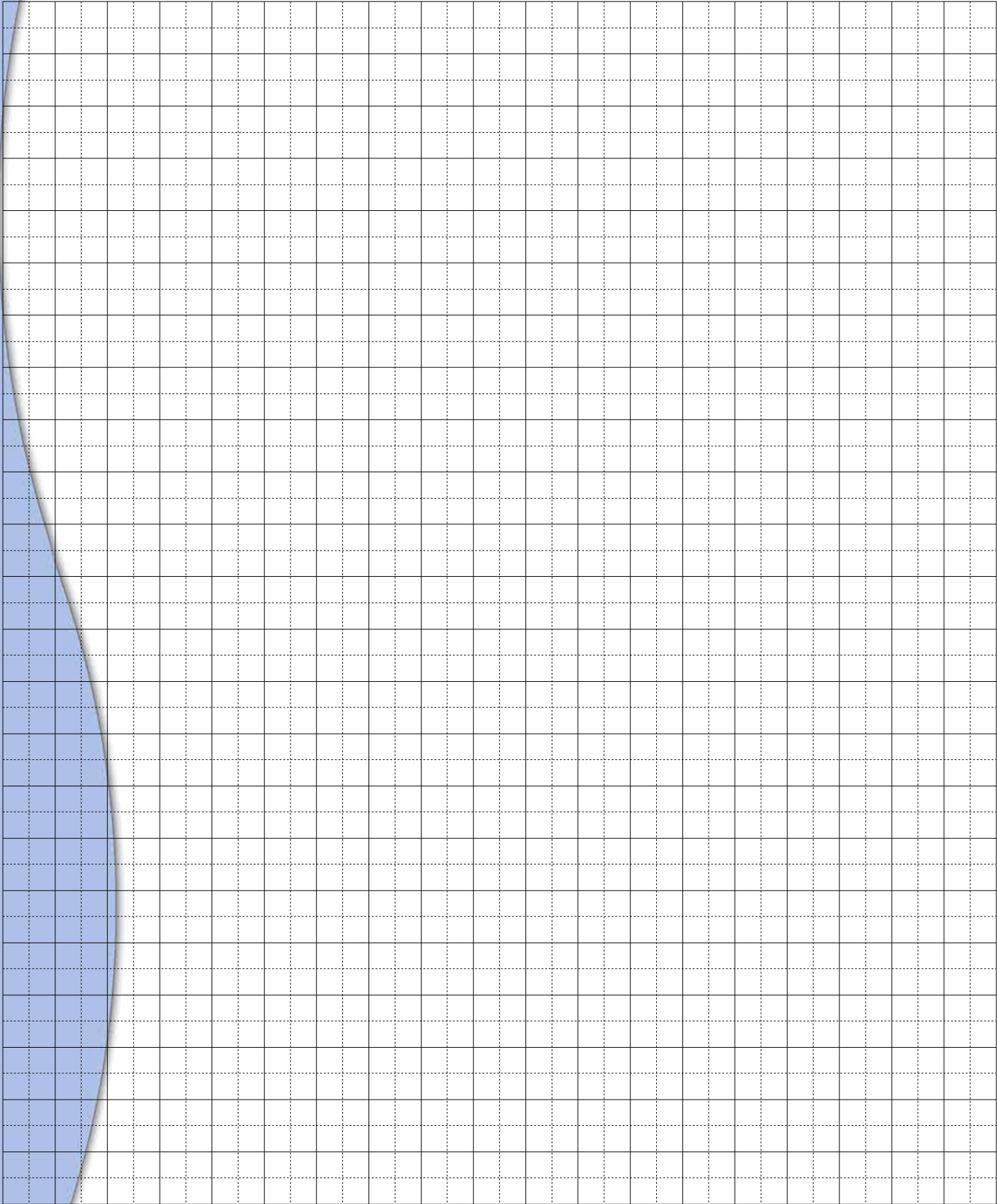
### 2 Series Supporting frame (OPTIONAL)



SERIE 2 2 SERIES				
MODELLO MODEL	Dimensioni Dimensions			Staffe di fissaggio / Staffe di fissaggio P/N
	A	B	C	
MS1/MA1/MV1/MW1	130	86	96	0562950
MS2/MA2/MV2/MW2	220	195	96	0562930
MS3/MA3/MV3/MW3	290	227.5	96	0562930
MS4/MA4/MV4/MW4	380	280.5	96	0562930
MS5/MA5/MV5/MW5	380	280	127	0562920

N.B. Considerare N. 2 Pz. per scambiatore  
P-S. Consider to use N. 2 Pcs for heat exchanger





The page contains a large grid of graph paper. The grid is composed of 20 columns and 30 rows of small squares. A blue decorative border is located on the left side of the page, curving from the top left corner down towards the bottom left corner. The grid is intended for taking notes or drawing diagrams.

*Alla ricerca di un continuo miglioramento del prodotto, EMMEGI S.p.A. si riserva il diritto di approntare modifiche ai dati e alle caratteristiche illustrate nel catalogo.*

*La riproduzione, anche parziale, del presente catalogo è vietata ai termini di legge.*

*Questo catalogo sostituisce tutti i precedenti.*

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*This catalogue replace all the previous one.*

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[sales@emmegiinc.com](mailto:sales@emmegiinc.com)

## CHINA

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Ph. + 86 10 88820971- Fax + 86 10 88820972  
<http://www.emmegi-heat-exchangers.com>  
[stefano@emmegi-heat-exchangers.com](mailto:stefano@emmegi-heat-exchangers.com)

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Visitors: Nybrovagen 4  
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Fax + 46 (0) 431- 415099  
<http://www.emmegi-heat-exchangers.com>  
[info.nordic@emmegi-heat-exchangers.com](mailto:info.nordic@emmegi-heat-exchangers.com)

## UK

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<http://www.emmegi.co.uk>  
[jquigley@emmegi.co.uk](mailto:jquigley@emmegi.co.uk)

## TURKEY

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