

## Metallic Centrifugal Magnet Drive Pumps



### Extensive Hydraulic Performance, Seal-less, Corrosion Resistant , Leak Free

- » Compact, metallic centrifugal magnet drive pumps
- » Excellent heat and pressure resistance
- » Pump materials offer excellent corrosion resistance
- » Can transfer liquid below freezing
- » Magnet drive is supported by the exclusive SiC-D bearing.
- » High efficiency and leak free design
- » Easy to disassemble and reassemble

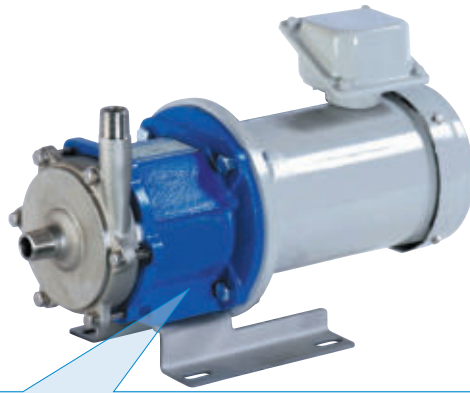
Pump Type	MMP	
Frequency (Hz)	50	60
Max. Head (m)	20	28
Max. Capacity (LPM)	80	80
Operating Temperature (°C)	-30 to 150 See note below	
Maximum Specific Gravity	2	
Maximum Viscosity (mPa•s,cP)	100	
Design pressure (MPaG)	0,6 / 1	
Flange standard	R Thread/ NPT Thread	
Impeller type	Closed	
(Synchronized) rotation speed(rpm)	1500 / 1800 / 3000 / 3600	
Bore (Suction x Discharge) (mm)	15 x 15 to 25 x 20	
Motor Output (kW)	0,37 to 0,55	
Pump Material	Stainless Steel 316	

Note: Below -20°C or above 120°C please contact your dealer/distributor.

# Small Sized Standard Centrifugal Pumps

Magnet Drive Pumps MMP

## for Equipment Use



### TYPE MMP

Motor output :

0,37kW to 0,55kW



### Construction and materials

90	SPACER #1	SS400(304SS)	1
64	BOLT WITH WASHER	304SS	4 <sup>s</sup>
63	BOLT WITH WASHER	304SS	4 <sup>s</sup>
62	BOLT WITH WASHER	304SS	6 <sup>s</sup>
61	SET SCREW	SCM435	1
50	BASE	304SS	1
45	BUSHING	SiC-D	2
33	O RING #3	PTFE	1
29	THRUST RING	SiC	1
20B	MAGNET MAGNET COUPLING(M)	RARE EARTH FCD	1 <sup>s</sup>
20A	MAGNET MAGNET COUPLING(P)	RARE EARTH 316SS	1 <sup>s</sup>
15	FRAME ADAPTER #2	FC200	1
8	SHAFT	SiC	1
4	REAR CASING	316SS	1
2	CASING	316SS	1
1A	PIN	316SS	2
1	IMPELLER	316SS	1

MARK	NAME OF PART	MAT'L	No.REQ'D
------	--------------	-------	----------

#1. Spacer "90" is attached to MMH and MML.  
 #2. Frame adapter "15" for MMH and MML comes in 304SS.  
 #3. ORING "33" for MMH and MML comes in GASKET.

### Pump Type Identification

**MMP21 - 1 F05 R N**  
 [1] [2] [3] [4][5]

[1] Pump type & size  
 [2] Impeller dia.: MMP11: 93  
 MMP21: 122  
 MMP22: 84

[3] Motor Type, Output & Magnet Coupling

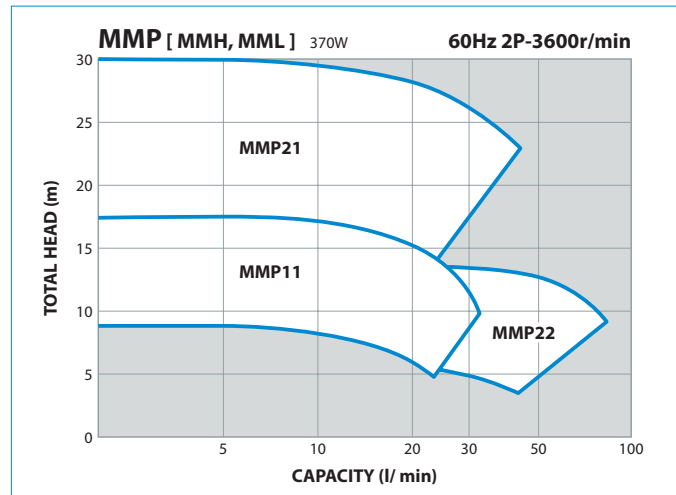
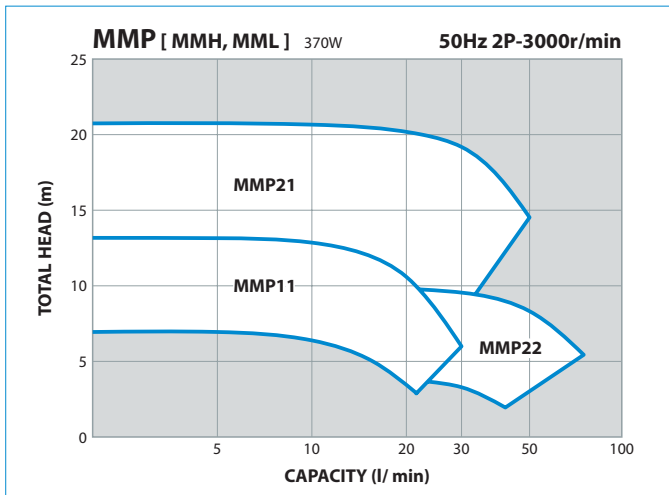
Code	Motor Type	Motor Output (kW)	Magnet Coupling Type	Motor Frame
F03	Flange	0,37	R25x6N	71
F05	IEC Motor	0,55		

[4] Pipe Connection & Pump Material: R: R Threads & 316SS  
 N: NPT Threads & 316SS

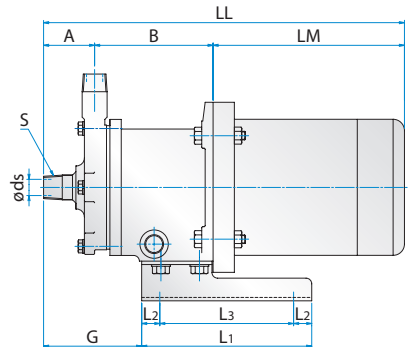
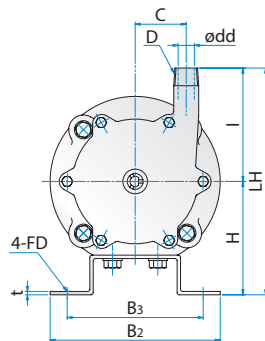
[5] Temp. Code  
 MMP11 & MMP22 L: -30 ~ -21°C N: -20 ~ +150°C  
 MMP21 L: -30 ~ -21°C N: -20 ~ +120°C  
 H: +121 ~ +150

## Selection charts

## Magnet Drive Pumps MMP



## Outline dimension



(In the unit of mm)

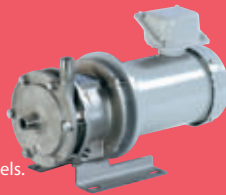
PUMP SIZE	MOTOR		BORE				PUMP & MOTOR							BASE PLATE						MASS APPROX.(kg)					
	FRAME SIZE	OUTPUT (W)	SUCT ds	S S	DISCH dd	D	A	B	C	H	I	LH	LM	LL	G	L1	L2	L3	B2	B3	t	FD	PUMP	MOTOR	TOTAL
MMP11	71	370	15	R1/2	15	R1/2	45	111	45	100	100	200	231	387	86 (70)	150	16	118	150	120	3	ø9.5	8,0	11,0	19,0
MMP21	71	370/550	20	R3/4	20	R3/4	50	112	50	100	120	220	231	393	77	150	16	118	150	120	3	ø9.5	11,0	11,0	22,0
MMP22	71	370/550	25	R1	20	R3/4	60	113	45	100	100	200	231	404	103 (87)	150	16	118	150	120	3	ø9.5	10,0	11,0	21,0

#LM,LL dimensions and motor weight may vary depending on motor used.

#Figures in brackets are for MMH11,22 and MML11,22.

### For liquid of high temperature TYPE MMH [ RT~+280°C ]

Open spacer between pump and motor eliminates excess heat transfer to motor. For high temperatures, SmCo magnets and high temperature gasket material are used. High pressure containment is standard on these models. >230°C, Flange Fitting and No Casing Drain.



### For liquid of low temperature TYPE MML [ -80°C~+150°C ]

Sealed spacer protects motor from excess cold temperatures. Nd magnets and low temperature gasket material is used in these pumps. Nitrogen purge port is provided to prevent moisture from freezing in the frame adapter.



## Dry running protector DRN series (Option)

Model DRN is electric current sensing type dry running protector. It detects the decreased load current (lower limit) to stop the pump when it runs dry or runs with air sucking in. It can detect overload, too.



### Specifications

MODEL	DRN-01	DRN-02
Amperometric range	0-30,00A	0-200,0A
Unit's source voltage	AC100-240V 50/60Hz 10VA	
Operating temperature	0-40°C	
Operating humidity	35-85%RH	
Current sensor	J510FL	J524FL
Analog input 1	4-20mA or 1-5V	
Analog input 2	4-20mA or 1-5V	
Temperature range	-50-200°C (Pt100,K thermocouple)	
Digital contact input	No-voltage contact signal (also for external reset)	
Contact output	For pre-alarm: AC250V 8A (load resistance) 1c For pump-stopping: AC250V 8A (load resistance) 1a	
Logging capability	Past records (with the calendar)	
Communication	RS485 incorporated	
Supported models	M, MMP, MP, MTF0	
External dimension in mm	D71 x W108 x H90	

\* Not used as an inverter.

\* Safety: UL 61010-1  
CAN/CSA-C22.2 No. 61010-1-12  
EN61010-1 EN61326-1, EN50581

\* EMC: EN61326-1  
\* RoHS: EN50581