MXM
series

Magnetic drive pumps

Magnetic drive pumps with an excellent balance of features and performance

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Magnetic drive pumps with an excellent balance of features and performance

The MXM series of pumps have now been added to the line-up of Iwaki' s magnetic drive process pumps, which have earned high acclaim and the trust of users all around the world. The new MXM series feature an excellent balance of the characteristics required of chemical pumps, including corrosion resistance, durability and safety. They employ a non-contact, self-radiating bearing structure to better withstand difficult operating conditions. The advent of the MXM series has further expanded the array of choices offered by Iwaki's process magnetic drive pumps.

Better withstanding difficult operating conditions

The proven non-contact system and self-radiating bearing structure deliver substantial improvements in tolerance of dry running and poor suction conditions.

Non contact system

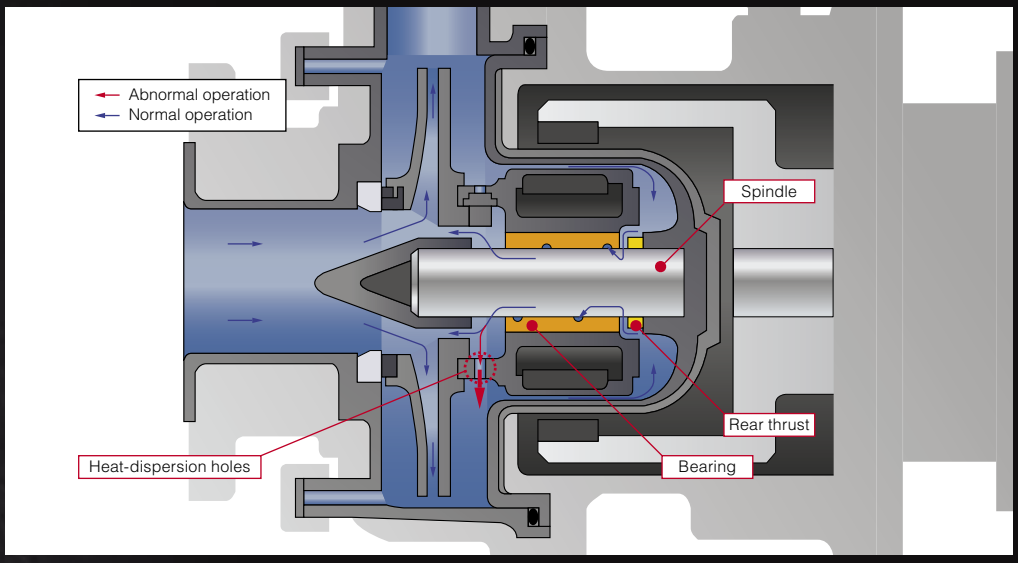
Unlike conventional magnetic drive pumps, the MXM series are designed to prevent contact between the bearing and the rear thrust faces, even during dry running or air ingress into the suction. By preventing contact, the rear thrust ring minimizes heat generation to prevent melting of plastic parts.

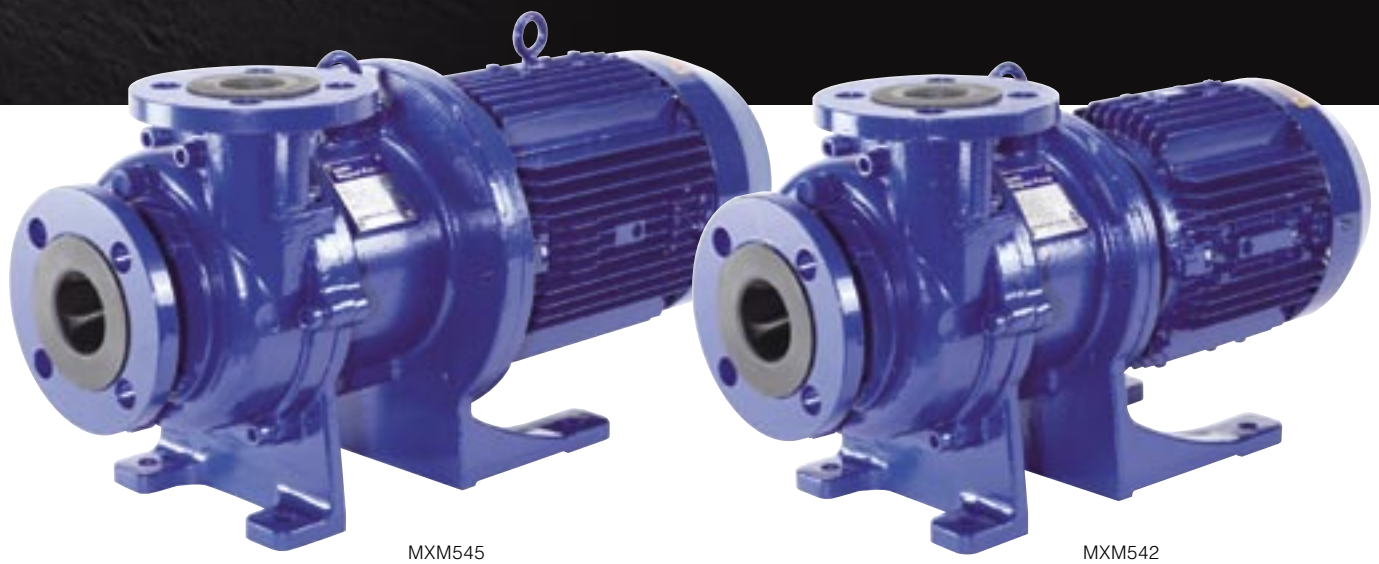
Self radiation structure

(PAT.PEND)

(International patent applied)

Through heat-dispersion holes provided in the fixed portions of the impeller and the magnet capsule, the liquid around the spindle and the bearing is forced to circulate so that heat generated by sliding can be reduced effectively. Thus, thermal deformation and melt are prevented.





MXM545

MXM542

Significantly improved safety and durability

Exceptional corrosion resistance

The MXM series employ optimum anti-corrosive materials such as carbon fiber reinforced ETFE (CFRETFE), fine ceramic and carbon for parts that come in contact with liquid. The most suitable impeller size and motor output can be selected for the required liquid density.

Impeller+Magnet capsule

Spindle+Bearing

Robust structure

The pumps have an external armour of high strength ductile cast iron for use in heavy duty chemical process applications.The sealing performance between the front casing and the rear casing is drastically enhanced by our original structure (patent pending), offering high reliability.

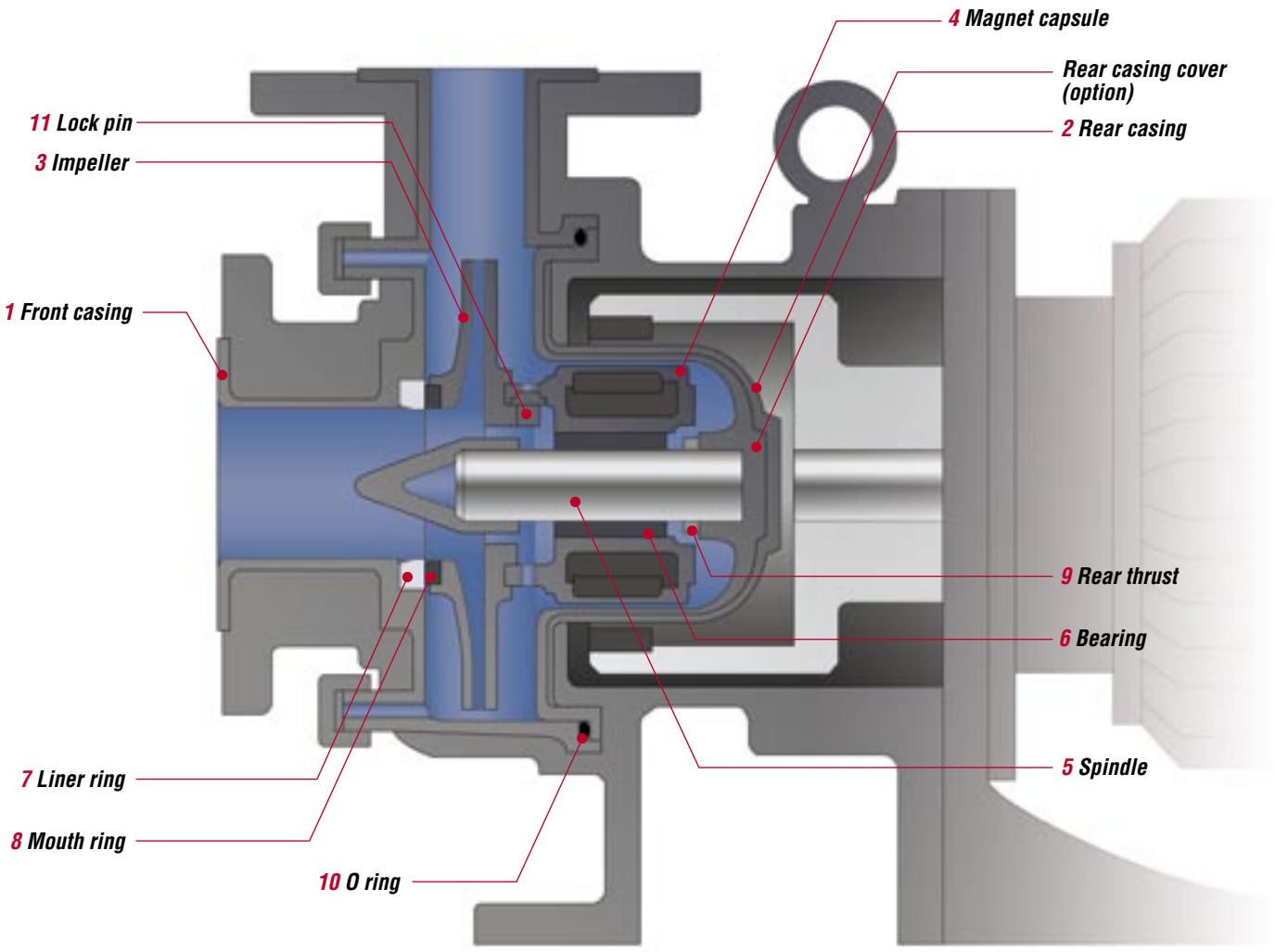
Cover+Front casing

Enhanced safety

The MXM features a unique rear casing shape designed to prevent stress concentration. This increases both the pump's pressure resistance and the mechanical strength of the spindle support. The high temperature model uses a dual structure incorporating an FRP rear casing cover. In addition to further increasing the pump's pressure resistance, it improves safety with dual containment preventing liquid leakage in the event of unexpected damage to the rear casing.

Rear casing+Rear casing cover (Option)

Construction and materials



Wet-end materials

Part \ Material code	CF	FF	KK
1 **Front casing**	CFRETFE		
2 **Rear casing**			
3 **Impeller**			
4 **Magnet capsule**			
5 **Spindle**	High-purity alumina ceramic		SiC
6 **Bearing**	High-density carbon	High-purity alumina ceramic	
7 **Liner ring**	High-purity alumina ceramic		
8 **Mouth ring**	PTFE with filler		
9 **Rear thrust**	CFRPFA		
10 **O ring**	FKM/EPDM/AFLAS®/ DAI-EL PERFLUOR®		
11 **Lock pin**	CFRETFE		

Pump identification

MXM 54 2 - 150 1 E CF V J - H
1 2 3 4 5 6 7 8 9 10

1	Series symbol	**MXM**
2	Pump size (Suction X Discharge)	**54**: 50mm × 40mm
3	Motor output	**2**: 1.5kW **3**: 2.2kW **5**: 3.7kW
4	Impeller size	**150, 140, 130, 125, 120, 110**
5	Impeller range	**1, 2, 3, 4**
6	Main material	**E**: CFRETFE
7	Material of Bearing / Spindle	**CF**: High density carbon / High purity alumina ceramic **FF**: High purity alumina ceramic / High purity alumina ceramic **KK**: SiC/SiC
8	Material of O ring	**V**: FKM **E**: EPDM **A**: AFLAS® **P**: DAI-EL PERFLUOR®
9	Standard for pipe connection and motor	**J**: JIS flange + JIS motor **I**: ISO flange + IEC motor **A**: ANSI flange + JIS motor
10	Special code	**H**: High temperature version (with rear casing cover) **B**: With base plate **S**: Other special order *Special code may overlap.

Specifications

Model	Pump size Suction X Discharge	50Hz			60Hz			Motor Output kW
		Impeller size	Capacity L/min	Head m	Impeller size	Capacity L/min	Head m	
MXM54-1 (Impeller range 1)	50mm X 40mm	150	200	18	150	200	30.5	1.5/2.2/3.7
		140	200	18.5	140	200	29	
		120	200	14.5	–	–	–	
MXM54-2 (Impeller range 2)		–	–	–	130	200	21.5	
		–	–	–	110	200	16	
MXM54-3 (Impeller range 3)		150	300	20.5	130	300	26	
		140	300	19.5	120	300	21	
		130	300	17	–	–	–	
MXM54-4 (Impeller range 4)		150	400	25	150	200	41	
		140	400	20.5	140	400	29.5	
		125	400	15.5	130	400	26	
		110	400	9.5	120	400	21.5	

Note1: Liquid temp. range
standard: -10 to 90 °C, High temp. version (with rear casing cover): -10 to 105 °C (10 to 105 °C when AFLAS® O ring is used)
Note2: Max allowable pressure range
standard: 0.45MPa, High temp. version (with rear casing cover): 0.7MPa

Notes for selection

(1) The performance curves in this catalogue represent the data measured using clear water at 20 °C.

(2) Choose the pump model suited to the liquid gravity.
Make sure that the motor output is at least five to ten percect higher than theoretically required.

Shaft power (Sp) × liquid gravity × 1.1 < Motor output

(Note) The shaft power (Sp) increases in proportion to the liquid gravity.
As the viscosity rises, the shaft power is higher while the head and the discharge are lower.
The power and the performance need to be adjusted.

(3) No magnetic drive pump supports continuous closed running. Be sure to ensure the mininum flow volume.

- Minimum flow volume
  Impeller range 1, 2 and 3: 20 L/min.
  Impeller range 4: 50 L/min.

(4) The pressure resistance of the pump is as follows.
Be sure to ensure that the internal pressure of the pump does not exceed the value specified below.

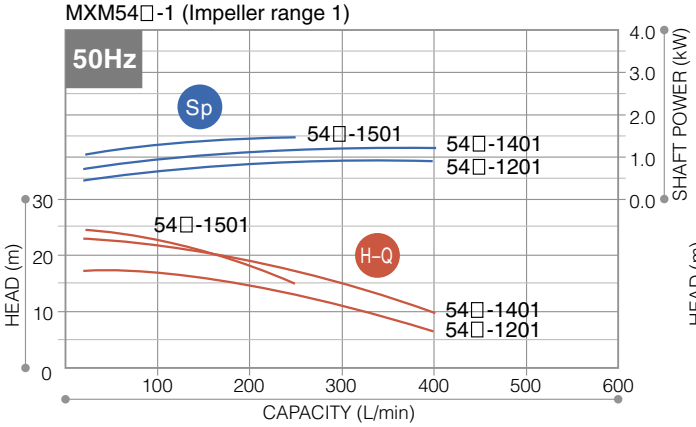
- Standard model
  -10 °C to 90 °C (without rear casing cover): 0.45MPa
- High temperature version
  -10 °C to 105 °C (with rear casing cover): 0.7MPa

(5) FF material models

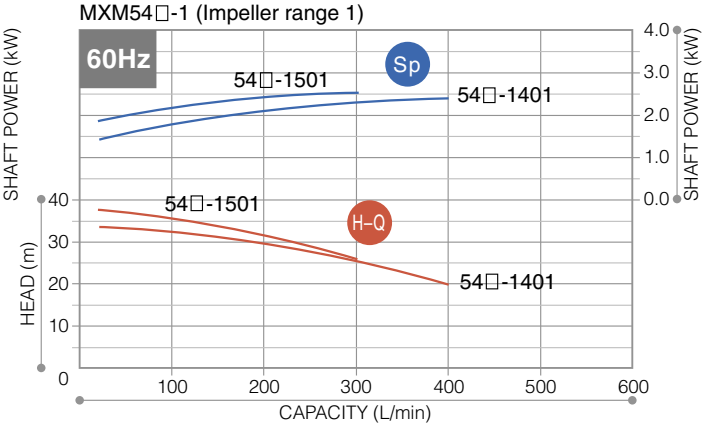
- Liquid should be 1m Pa·s (cP) or more.
- HQ performance is somewhat different from CF/KK models.
  If you need to know the detail, please contact with us.
- FF material models are prohibited to run under dry running or air sucking operation.

Performance curves (CF/KK models)

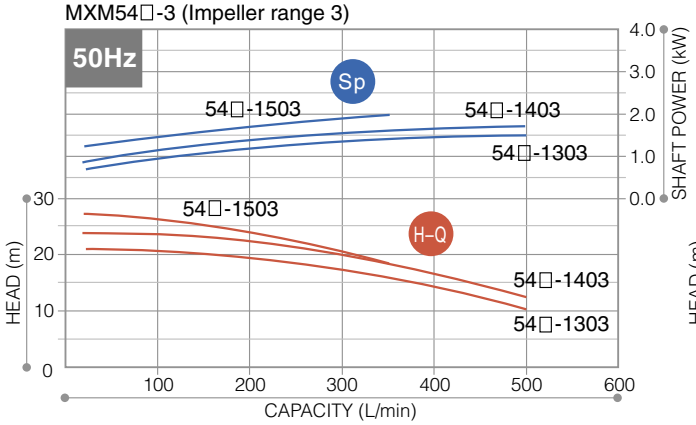
MXM54□-1 (Impeller range 1)



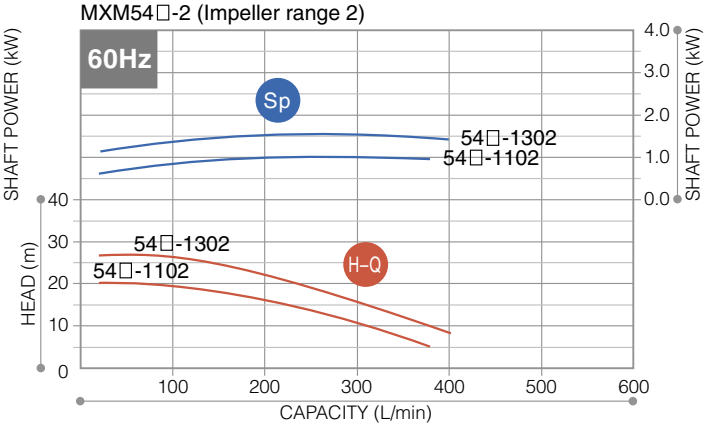
MXM54□-1 (Impeller range 1)



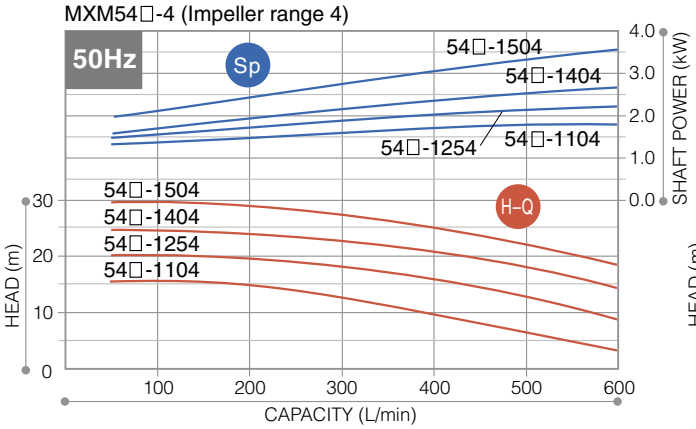
MXM54□-3 (Impeller range 3)



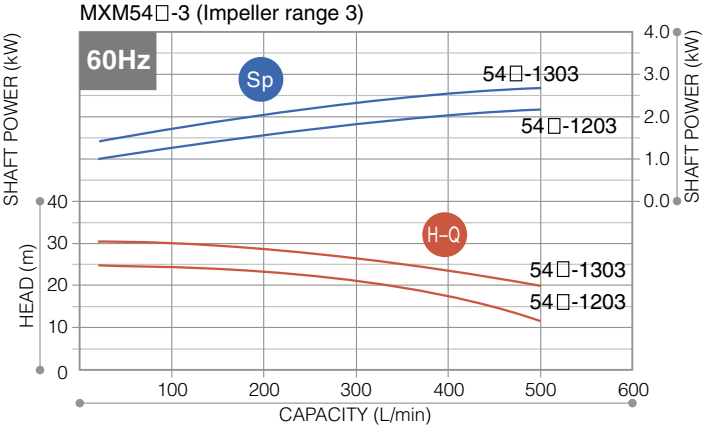
MXM54□-2 (Impeller range 2)



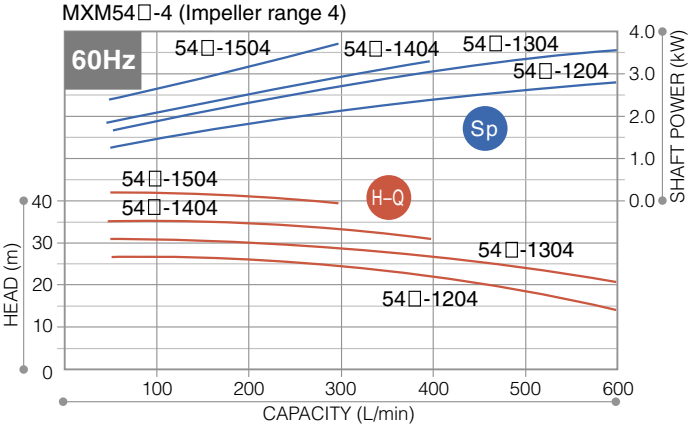
MXM54□-4 (Impeller range 4)



MXM54□-3 (Impeller range 3)

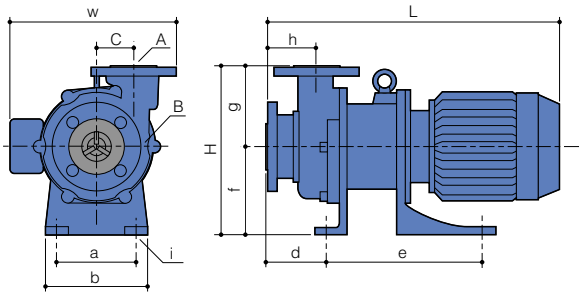


MXM54□-4 (Impeller range 4)

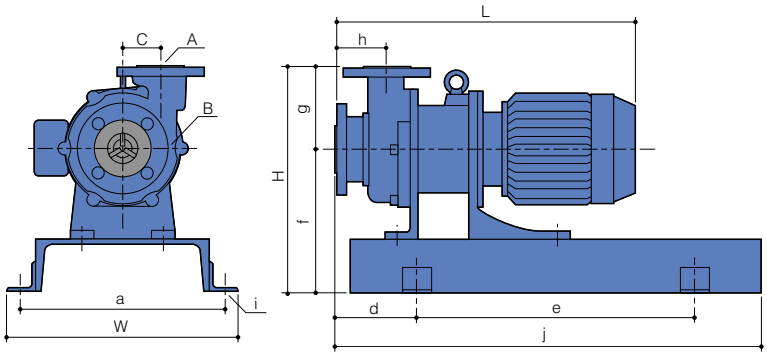


Dimensions in mm

Without base



With base



Without base

Model	W	H	L	A	B	a	b	c	d	e	f	g	h	i	Mass kg Less motor
MXM542	294	295	517	40A	50A	140	180	65	106	275	155	140	87	4-ø14	25
MXM543															
MXM545	306		589												30

With base

Model	W	H	L	A	B	a	c	d	e	f	g	h	i	j	Mass kg Less motor
MXM542	400	385	517	40A	50A	350	65	140	480	245	140	87	4-ø19	735	55
MXM543															
MXM545			589												60

Optional accessories

Iwaki dry running protector DR series

Model DR 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 over-load, too.

- Current figure to be set is indicated on LCD.
- Both top/bottom figures can be set.
  Top:Over-load
  Bottom:Dry running, air sucking-in operation, operation with suction side closed
- Built-in current transformer
- DIN rail mounting
- It is unable to use DR when inverter is employed in the system.

DR-20

Specification

50/60Hz

Model		DR-10	DR-20
Motor power		200 to 240V three phase	380 to 440V three phase
Applied motor		0.4 to 7.5kW	0.75 to 15kW
Power control		100 to 240V single phase	
Power	V	100V ±10%single phase	200 to 240V ±10%single phase
	Input	3.5W	
Detective current		0.5 to 32.0A	
Current transformar(CT)		Built-in	
Outer dimension		D80 X W153 X H122	