

Electromagnetic metering pumps

The latest electromagnetic metering pump equipped with digital controller & multi-voltage



EHN Series is the latest electromagnet drive & diaphragm type metering pump. Pump head and driving mechanism employ those of experienced EH-R Series pumps while control unit is newly developed.



Specifications of pump (VC/VH)

Model		EHN-B11	EHN-B16	EHN-B21	EHN-B31	EHN-C16	EHN-C21	EHN-C31	EHN-C36
Max. discharge capacity	mL/min	38	65	100	230	80	130	270	450
	mL/shot	0.05 - 0.11	0.09 - 0.18	0.14 - 0.28	0.32 - 0.64	0.09 - 0.22	0.14 - 0.36	0.30 - 0.75	0.50 - 1.25
Max. discharge pressure	MPa	1.0	0.70	0.40	0.20	1.0	0.70	0.35	0.20
Stroke rate	spm	1 - 360							
Stroke length		50 - 100% (0.5 - 1.0mm)				40 - 100% (0.5 - 1.25mm)			
Connection (Hose dia.)	mm	Ø4 × Ø9		Ø8 × Ø13		Ø4 × Ø9		Ø8 × Ø13	
Power voltage		AC100 - 240V 50/60Hz single phase							
Air vent valve		○		×		○		×	
Accessory	Check valve	CA-1		CA-2-L		CA-1		CA-2	CA-2-L
	Braided hose	Ø4 × Ø9 or Ø8 × Ø13 made in PVC/3 m							

Note 1: The maximum discharge capacity of each model represents the figure when the pump is pumping clean water at maximum discharge pressure, rated voltage, ambient temperature, and 360 spm with stroke length 100%.

Note 2: 0.12MPa or more discharge pressure is needed to prevent over feeding (0.05MPa or more for the EHN-B31 and C36).

If the discharge pressure is at or below the required MPa, install a check valve or back pressure valve.

Operating condition: Liquid temperature range is 0 - 60 °C(0 - 40 °C for VC/VH)

Ambient temperature range is 0 - 40 °C

(FC/SH)

Model		EHN-B11	EHN-B21	EHN-C21	EHN-C31	EHN-C36
Max. discharge capacity	mL/min	38	100	130	270	410
	mL/shot	0.05 - 0.11	0.14 - 0.28	0.14 - 0.36	0.30 - 0.75	0.46 - 1.14
Max. discharge pressure	MPa	1.0	0.40	0.70	0.35	0.20
Stroke rate	spm	1 - 360				
Stroke length		50 - 100% (0.5 - 1.0mm)		40 - 100% (0.5 - 1.25mm)		
Connection	FC	Ø4 × Ø6			Ø10 × Ø12	
	SH	Rc 1/4				
Power voltage		AC100 - 240V 50/60Hz single phase				
Air vent valve		SH: ○		FC: ×		
Accessory		FC: BVC(Back pressure valve)			SH: CS-1S(Check valve)	

Note 1: The maximum discharge capacity of each model represents the figure when the pump is pumping clean water at maximum discharge pressure, rated voltage, ambient temperature, and 360 spm with stroke length 100%.

Operating condition: Liquid temperature range is 0 - 60 °C (on condition that liquid quality is not changed by freezing, viscosity change, or slurry interfusion).

Specifications of controller

Model		R	Y
Operation mode	Mode	EXT (Pulse dividing or multiply)	
	Mode selection	EXT & START/STOP keys	
Control	Setting	<ul style="list-style-type: none"> Manual stroke rate 1 - 360spm EXT <ul style="list-style-type: none"> Digital input operation Multiply 1 : n n=1 - 999 Dividing n : 1 n=1 - 999 	<ul style="list-style-type: none"> Manual stroke rate 1 - 360spm EXT <ul style="list-style-type: none"> Digital input operation Multiply 1 : n n=1 - 999 Dividing n : 1 n=1 - 999 Analogue input operation Set point 1 Amperage: 0 - 20 mA Stroke rate: 0 - 360 spm Set point 2 Amperage: 0 - 20 mA Stroke rate: 0 - 360 spm
	Setting method	3 operating keys	4 operating keys
	Stop	No voltage contact (Make off/Make on can be selected by changing controller setting)	
Display		4-digit LCD	
Input	Pulse	No voltage contact, Open collector	
	Stop	No voltage contact, Open collector	
Output	Sensor power	-	DC 12V 20mA or less
Power voltage		AC100 - 240V 50/60Hz single phase	

Optional accessories

Check valve

Mount the check valve at the end of discharge hose for the prevention of over feeding, backflow, and siphon action.

Note: CB type is an option.

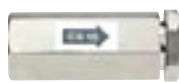
CA type: Standard accessory



CB type: In-line type check valve. Install it between hoses.



CS type: Stainless type for high liquid temperature. General model and boiler model are available.



Model	Connection		Set press. MPa	Material Body	Material Spring	Material O-ring	Applicable pump	Wet end material code	
	IN	OUT							
CA-1VC-4	ø4xø9	R3/8, R1/2 Thread	0.17 ±0.04	PVC	Hastelloy C276	FKM	B11 · 16 · 21	VC	
CA-1VE-4	Hose					EPDM	C16 · 21	VH	
CA-1VC-4x6	ø4xø6					FKM	C16 · 21	VC	
CA-1VE-4x6	Hose					EPDM	C31	VH	
CA-2VC-8	ø8xø13	R3/8, R1/2 Thread	0.05 +0.04 -0.03	PVC	Hastelloy C276	FKM	B31	VC	
CA-2VE-8						Hose	EPDM	C36	VH
CA-2VCL-8						Hose	FKM	C36	VC
CA-2VEL-8						Hose	EPDM	C36	VH
CA-1VCH-4	ø4xø9	Hose	0.34 ±0.04	PVC	Hastelloy C276	FKM	B11 · 16 · 21	VC	
CA-1VEH-4						Hose	EPDM	C16 · 21	VH
CA-1VH-4						Hose	EPDM	C16 · 21	VH
CA-1VEH-4						Hose	EPDM	C16 · 21	VH
CB-1VC-4	ø4xø9	ø4xø9	0.17 ±0.04	PVC	Hastelloy C276	FKM	B11 · 16 · 21	VC	
CB-1VE-4	Hose	Hose				EPDM	C16 · 21	VH	
CB-2VC-8	ø8xø13	ø8xø13				FKM	C31	VC	
CB-2VE-8						Hose	EPDM	C31	VH
CB-2VCL-8	ø8xø13	ø8xø13	0.05 +0.04 -0.03	PVC	Hastelloy C276	FKM	B31	VC	
CB-2VEL-8						Hose	EPDM	C36	VH
CB-1VCH-4	ø4xø9	ø4xø9	0.34 ±0.04	PVC	Hastelloy C276	FKM	B11 · 16 · 21	VC	
CB-1VEH-4						Hose	EPDM	C16 · 21	VH
CS-1S	Rc1/4	Rc1/4	0.2 ±0.03	SUS316	Hastelloy C276	—	B11 · 21 C21 · 31 C36	SH	
CS-1SL	Thread	Thread	0.05 ±0.03						
CS-1E	ø4xø6	R3/8	0.12 ±0.04	SUS304	Hastelloy C276	EPDM	B11 · 16 · 21 C16 · 21	VH	
CS-1E-2		Thread							R1/2

Backflow prevention valve

Mount the backflow prevention valve at the end of discharge hose for the prevention of backflow.



Model	Connection		Material Body	Material Rubber	Applicable pump	Wet end material code
	IN	OUT				
CV-1VC-1	ø4xø9	Hose	PVC	FKM	B11 · 16 · 21	VC
CV-1VE-1				EPDM	C16 · 21	VH
CV-1VC-2	ø4xø6	Hose	PVC	FKM	B11 · 16 · 21	VC
CV-1VE-2				EPDM	C16 · 21	VH
CV-2VC-4	ø8xø13	Hose	PVC	FKM	B31	VC
CV-2VE-4				EPDM	C31 · 36	VH

Back pressure valve

The back pressure valve enhances the dosing accuracy and prevents backflow. Set pressure is adjustable.



Model	Connection		Set press. MPa	Material			Applicable pump	Wet end material code
	IN	OUT		Body	Valve	O-ring		
BVC-1TV-4H	ø4xø6	R3/8, R1/2 Thread	0.2 ±0.02	PVDF	FKM	Note	B11 · 21	FC
BVC-1TV-10H	ø10xø12						C21	
BVC-1TV-10H	Hose						C31	
BVC-1PVL-8H	ø8xø13	R3/8, R1/2 Thread	0.2 ±0.02	PVC	FKM	FKM	C31	VC
BVC-1PEL-8H					Hose	EPDM	EPDM	C31

Note: Gasket (made in PTFE)

Accumulator

Mount the accumulator on discharge side hose to reduce vibration comes from pulsation.



Model	Connection		Capacity ml	Material Body	Material		Applicable pump	Wet end material code
	IN	OUT			Vladar	O-ring		
AQ-V-1	ø4xø9	ø4xø9	66	PVC	FKM	FKM	B11 · 16 · 21 C16 · 21	VC
AQ-E-1	Hose	Hose			EPDM	EPDM		VH
AQ-V-2	ø4xø6	ø4xø6			FKM	FKM		VC
AQ-E-2	Hose	Hose			EPDM	EPDM		VH
AQ-V-4	ø8xø13	ø8xø13	66	PVC	FKM	FKM	B31	VC
AQ-E-4	Hose	Hose			EPDM	EPDM	C31 · 36	VH

Hose flange

The hose flange is the adapter for connecting hose to flange. Hose flange with the check valve is also available.



Model	Connection		Material Body	Material Check valve model	Applicable pump	Wet end material code
	Hose	Flange				
15FCA-1VC	ø4xø9	JIS10K15AFF	PVC	CA-1VC	B11 · 16 · 21	VC
15FCA-1VE				CA-1VE	C16 · 21	VH
15FCA-2VC				CA-2VC	C31	VC
15FCA-2VE				CA-2VE	C31	VH
15F×4	ø4xø9	JIS10K15A	PVC	—	B11 · 16 · 21 C16 · 21	—
15FS×4				—	C16 · 21	—
15F×8	ø8xø13	JIS10K15AFF	PVC	—	B31 C31 · 36	—
20FCA-1VC				CA-1VC	B11 · 16 · 21	VC
20FCA-1VE				CA-1VE	C16 · 21	VH
20FCA-2VC				CA-2VC	C31	VC
20FCA-2VE	ø8xø13	JIS20K20AFF	PVC	CA-2VE	C31	VH
20F×4	ø4xø9			—	B11 · 16 · 21 C16 · 21	—
20F×8	ø8xø13	—	—	—	B31 C31 · 36	—

Note: Please ask us for ø4xø6, ø9xø12 connection.

Hose joint

The hose joint offers a secure connection between hose and pipe.



Thread connection

Model	Connection		Material Body	Applicable pump	Wet end material code
	Hose	Thread			
V4-3/8-1	ø4×ø9	3/8	PVC	B11 · 16 · 21 C16 · 21	VC VH
V4-1/2-1		1/2			
V8-3/8-4		3/8			
V8-1/2-4	ø8×ø13	1/2		B31 C31 · 36	

VP plumbing connection

Model	Connection		Material Body	Applicable pump	Wet end material code
	Hose	VP plumbing			
V4-16-1	ø4×ø9	VP16	PVC	B11 · 16 · 21 C16 · 21	VC VH
V4-20-1		VP20			
V8-16-4		VP16			
V8-20-4	ø8×ø13	VP20		B31 C31 · 36	

Note: ø4×ø6, ø9×ø12 connection is prepared.

Air vent valve

Use the air vent valve for the B31, C31, and C36 types as necessary.



Model	Connection		Material		Applicable pump	Wet end material code
	Hose	Body	Rubber			
AV-E30/35VC-4	ø8×ø13	PVC	FKM	EPDM	B31 · C31 · 36	VC
AV-E30/35V6-4						VH

Note: Please contact to Iwaki for 9×12 connection.

Multifunction valve

The multifunction valve functions as a back pressure valve, air vent valve, and relieve valve. The set pressure of the back pressure valve is fixed to 0.2MPa.



Model	Connection		Material			Applicable pump	Wet end material code
	Hose	Body	Diaphragm	Rubber			
MFV-SVC-1	ø4×ø9	PVC	PTFE+EPDM	FKM	EPDM	B11 · 16 · 21 C16 · 21	VC
MFV-SVH-1							VH

Strainer with a foot valve

Mount the strainer at the end of suction hose. The strainer with a foot valve prevents backflow and foreign matter interfusion. Inlet bore can be selected according to hose bore.



Model	Connection		Material			Applicable pump	Wet end material code
	Hose	Strainer	Body	Valve ball	Rubber		
FSV-4x9	ø4×ø9	Aflon	PVC	Alumina ceramic	FKM	B11 · 16 · 21, C16 · 21 B31, C31 · 36	VC
FSV-8x13	ø8×ø13						
FSE-4x9	ø4×ø9			Hastelloy C276	EPDM		
FSE-8x13	ø8×ø13						

Note1: For ø4× ø6 and ø9× ø12, contact us.

Note2: PVDF strainers (FSTC type) are also available.

Note3: Mesh size is 20 mesh.

Foot valve with a strainer

Mount the foot valve at the end of suction hose. The foot valve with a strainer and a ceramic weight ball prevents backflow and foreign matter interfusion. Inlet bore can be selected according to hose bore.



Model	Connection		Material			Applicable pump	Wet end material code
	Hose	Strainer	Body	Valve ball	Rubber		
FSC-4x6	ø4×ø6	PE	PVC	Alumina ceramic	FKM	B11 · 16 · 21 C16 · 21	VC
FSC-4x9	ø4×ø9						
FSC-8x13	ø8×ø13						

Note1: For ø9×ø12, contact us.

Note2: Mesh size is 150 mesh.

Reducing joint

Use the reducing joint to a connection between different bore hoses.



Model	Connection		Material		Applicable pump	Wet end material code
	Hose	Hose	Body	O-ring		
HJ-1/2V	ø4×ø9	ø4×ø6	PVC	FKM	B11 · 16 · 21 C16 · 21	VC
HJ-1/18V		ø6×ø11				
HJ-2/3V		ø6×ø8				

Note1: VH type is available as option.

Note2: Same bore hoses are available as option.

T-joint

Use T-joint for a branch pipe.



Model	Connection		Material Body	Applicable pump	Wet end material code
	Hose	Body			
TJ-4H	ø4×ø9	PVC	B11 · 16 · 21, C16 · 21 B31, C31 · 36	VC, VH	
TJ-8H	ø8×ø13				

Flow counter/Controller

The pressure sensor detects pulsation to monitor the flow. Air lock and hose disconnection are also can be detected.



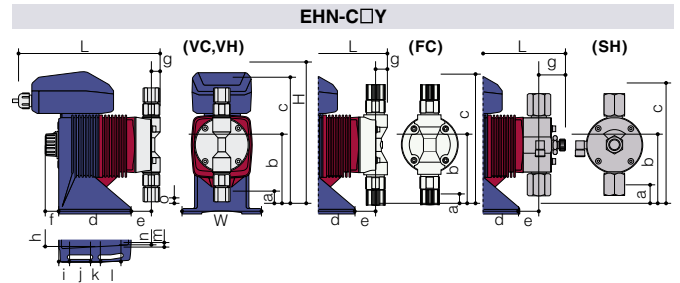
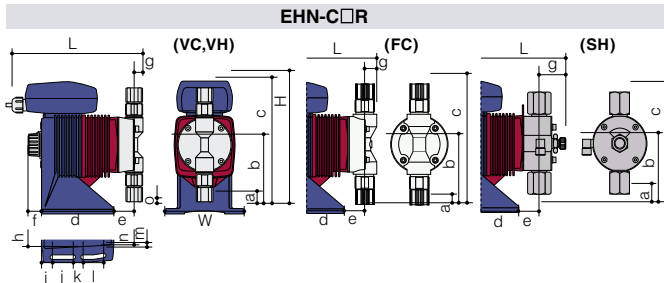
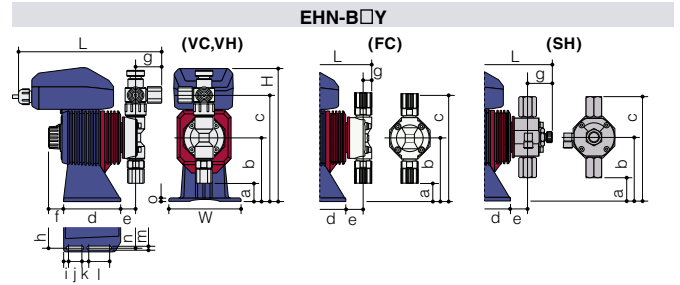
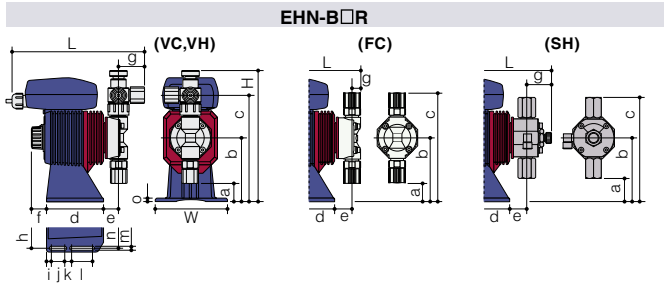
Flow counter

Model	Material			Applicable controller	Applicable pump	Wet end material code
	Sensor	Body	Rubber			
FCP-1VC	Alumina ceramic	PVC	FKM	FCU-01 S3D2-CK	B11 · 16 · 21 C16 · 21	VC
FCP-1VE			EPDM			VH

Controller

Model	Electric specification				Applicable pump	Note
	power voltage	setting method	Output	Warning time		
FCU-01	AC100/200V	DIN Rail	open collector (3 output)	1 - 20 min	B11 · 16 · 21 C16 · 21	Iwaki product Omron product
S3D2-CK	AC100 - 240V		relay output (1c)	0.1 - 1/1 - 10s		

Dimensions (mm)



EHN-R (VC,VH)

Model	W	H	L	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
EHN-B11,16,21	100	(184)	(192)	(26)	90	(150)	81.5	(25)	(21)	(37)	88	7	16	10	32	6.2	88	5
EHN-B31	100	(174)	(174)	(8)	90	(172)	81.5	(27)	(21)	(16)	88	7	16	10	32	6.2	88	5
EHN-C16,21	116	(194)	(210.5)	(36)	100	(160)	105	(27)	(18)	(37)	100	8	37	15	30	7	95	8
EHN-C31	116	(189)	(191.5)	(17.5)	100	(182.5)	105	(29)	(18)	(16)	100	8	37	15	30	7	95	8
EHN-C36	116	(189)	(191)	(18)	100	(182)	105	(28.5)	(18)	(16)	100	8	37	15	30	7	95	8

EHN-R (FC,SH)

Model	W	H	L	a	b	c	d	e	f	g
EHN-B11,21FC	100	(174)	(167)	(27)	90	(153)	81.5	(25)	(21)	(12)
EHN-C21FC	116	(189)	(185.5)	(37)	100	(163)	105	(27)	(18)	(12)
EHN-C31FC	116	(189)	(191.5)	(18.5)	100	(181.5)	105	(29)	(18)	(16)
EHN-C36FC	116	(189)	(191)	(18.5)	100	(181.5)	105	(28.5)	(18)	(16)
EHN-B11,21SH	100	(174)	(188)	(34)	90	(146)	81.5	(24)	(21)	(34)
EHN-C21SH	116	(189)	(209)	(44)	100	(156)	105	(26)	(18)	(36.5)
EHN-C31SH	116	(189)	(209)	(34)	100	(166)	105	(28)	(18)	(34.5)
EHN-C36SH	116	(189)	(208.5)	(31)	100	(169)	105	(28)	(18)	(34)

EHN-Y (VC,VH)

Model	W	H	L	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
EHN-B11,16,21	100	(191)	(208.5)	(26)	90	(150)	81.5	(25)	(21)	(37)	88	7	16	10	32	6.2	88	5
EHN-B31	100	(191)	(189.5)	(8)	90	(172)	81.5	(27)	(21)	(16)	88	7	16	10	32	6.2	88	5
EHN-C16,21	116	(206.5)	(227)	(36)	100	(160)	105	(27)	(18)	(37)	100	8	37	15	30	7	95	8
EHN-C31	116	(206.5)	(208)	(17.5)	100	(182.5)	105	(29)	(18)	(16)	100	8	37	15	30	7	95	8
EHN-C36	116	(206.5)	(207.5)	(18.5)	100	(181.5)	105	(28.5)	(18)	(16)	100	8	37	15	30	7	95	8

EHN-Y (FC,SH)

Model	W	H	L	a	b	c	d	e	f	g
EHN-B11,21FC	100	(191)	(183.5)	(27)	90	(153)	81.5	(25)	(21)	(12)
EHN-C21FC	116	(206.5)	(202)	(37)	100	(163)	105	(27)	(18)	(12)
EHN-C31FC	116	(206.5)	(208)	(18.5)	100	(181.5)	105	(29)	(18)	(16)
EHN-C36FC	116	(206.5)	(207.5)	(18.5)	100	(181.5)	105	(28.5)	(18)	(16)
EHN-B11,21SH	100	(191)	(204.5)	(34)	90	(146)	81.5	(24)	(21)	(34)
EHN-C21SH	116	(206.5)	(225.5)	(44)	100	(156)	105	(26)	(18)	(36.5)
EHN-C31SH	116	(206.5)	(225.5)	(34)	100	(166)	105	(28)	(18)	(34.5)
EHN-C36SH	116	(206.5)	(225)	(31)	100	(169)	105	(28)	(18)	(34)

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