

Electromagnetic metering pumps

Electromagnetic metering pumps with various controls and abnormality detections



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Conventional electromagnetic metering pumps generally suffer from low resistance to exposure of external liquids. With improved sealing of not only the control unit but also the pump unit, a remarkable improvement to this exposure has been achieved in the EW series. With its tough construction and high tolerance to external liquids, the EW series can be widely used in applications ranging from incorporation into various devices to utilization as standard equipment in water treatment facilities.



Waterproof structure (IP65)

With the aim of improving resistance to exposure to liquid, the controller unit is installed on the back of the pump and the control panel is protected with a cover as standard equipment. A rubber gasket is provided between the pump head and the bracket to prevent water from entering from the periphery of the pump head.

High resolution

For discharge flow adjustment, a dual control system which controls the length of stroke and the number of strokes employed. Since stroke by stroke adjustment is possible, the discharge rate can be controlled in a wide range from a minimal flow rate to its maximum discharge.

High compression ratio

The compression rate is raised by reducing the dead volume of the pump head and increasing the length of stroke, aiming at higher self-priming capability and more effective venting.

Multifunctional controller

The controller includes a CPU and is equipped with double-level stop function and external control function. The display for the number of strokes utilizes a high temperature type LCD which provides extra resistance to the direct rays of the sun.

Various controls and abnormality detections are achieved by functions such as current signal, input pulse proportion, batch operation and various alarm output functions.

Discharge detection

Direct connection to the IWAKI FCP flow counter (excluding certain low-pressure models) allows effective monitoring of pump discharge (number of shots). Gas lock, abnormal pressure, etc., are also detectable.

Displaying flow rate

Pump flow rate may be displayed (L/h) by inputting actual flow rate to the controller.

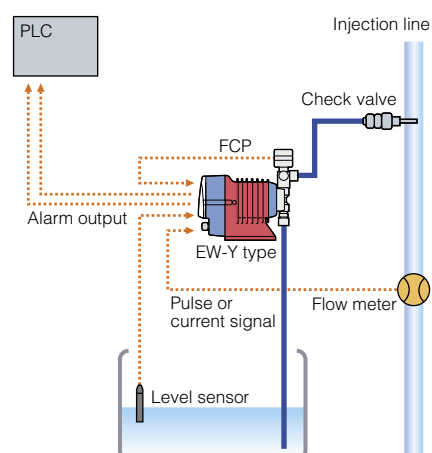
Alarm output function is provided as standard function

Two types of alarm outputs are provided as standard functions. (Mechanical relay output, Photo-MOS relay output)

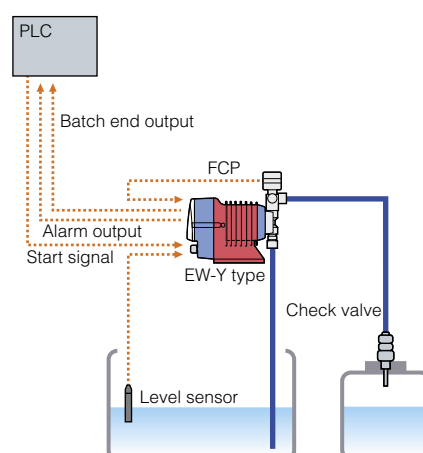


Application examples

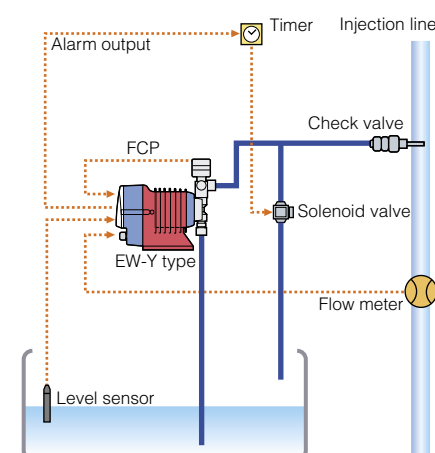
• Proportional injection with flow meter



• Batch control



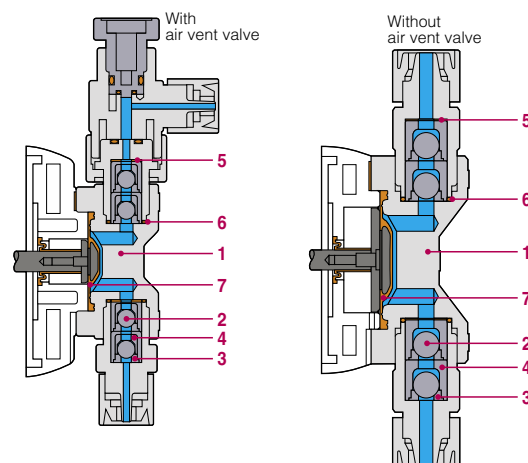
• Automatic air elimination system



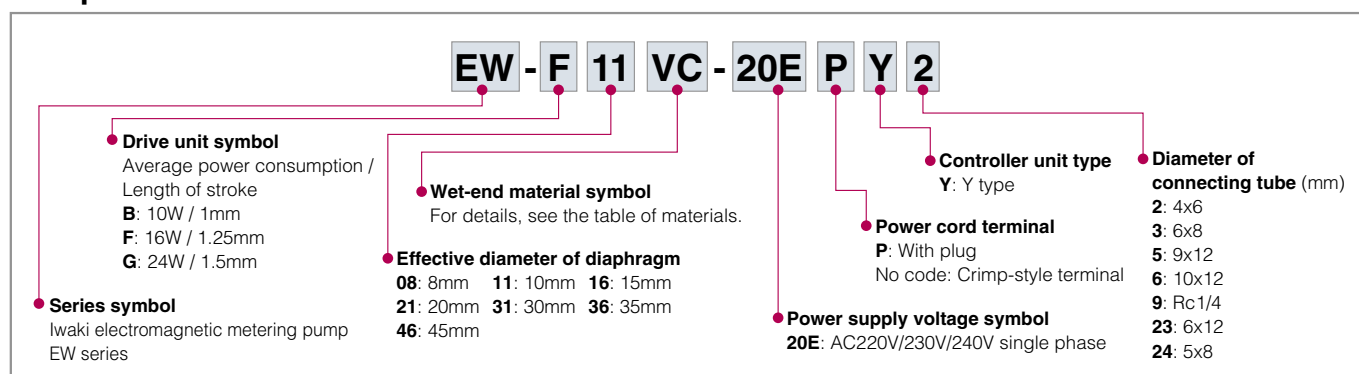
Wet-end materials

	VC	VH	PC	PH	TC	SH
1 Pump head	PVC	PVC	GFRPP	GFRPP	PVdF	SUS316
2 Valve	Alumina ceramic	Hastelloy C276	Alumina ceramic	Hastelloy C276	Alumina ceramic	Hastelloy C276
3 Valve seat	FKM	EPDM	FKM	EPDM	FKM	SUS316
4 Valve guide	PVC	PVC	GFRPP	GFRPP	PVdF	SUS316
5 Valve gasket	PTFE					
6 O ring	FKM	EPDM	FKM	EPDM	FKM	—
7 Diaphragm	PTFE coated EPDM					

Note : Illustration shows PVC, GFRPP and PVdF type.



Pump identification



Specifications of pump

Model			B08	F11	F16	F21	F31	G21	G31	G36	G46
Capacity	VC, VH, PC, PH	L/h	0.6	1.5	2.5	3.6	9.0	4.7	9.9	15.1	24.0
		mL/shot	0.056	0.142	0.233	0.333	0.833	0.433	0.917	1.40	2.20
	TC, SH	L/h	0.6	1.5	2.4	—	—	4.7	9.9	13.8	TC: 24.0, SH: 22.8
		mL/shot	0.056	0.142	0.222			0.433	0.917	1.28	TC: 2.20, SH: 2.11
Max. discharge pressure		MPa	1.0	1.0	1.0	0.7	0.3	1.0	0.6	0.4	0.2
Stroke length (Effective adjustment range)		mm	1 (50-100%)	1.25 (40-100%)				1.5 (30-100%)			
Stroke rate			1-180spm								
Power supply (common to 50/60Hz)			AC220V / 230V / 240V single phase								
Average current		A	0.4					0.6			
Average power consumption		W	10	16				24			

Note 1: The maximum discharges are values obtained while utilizing clear water under maximum discharge pressures. Under lower discharge pressures, larger amounts than the above are discharged.

Note 2: To prevent overfeeding, discharge pressure should be 0.12 MPa or higher. (For F31, G36 and G46, it should be 0.05 MPa or higher.)

Note 3: Liquid temperature range VC/VH: -10 to 40°C, PC/PH/TC/SH: -10 to 60°C (Without dew condensation.)

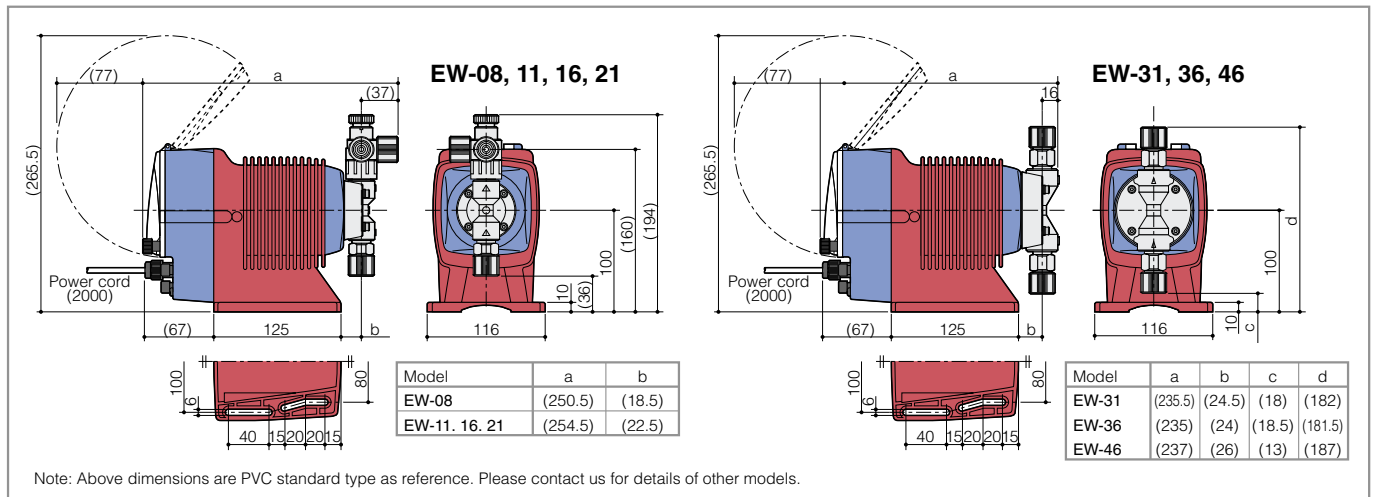
Note 4: Max. discharge pressure when pumping liquid at temperature 0 to -10°C is limited to 70% of rated max. discharge pressure.

Specifications of controller

Operation mode	MAN		1 - 180 spm
	EXT	DIV (Dividing)	1 - 9999 : n
		Mult (Multiply)	n : 1 - 9999
		ANA. R (Analog, rigid)	4 - 20, 0 - 20, 20 - 4, 20 - 0 mA
Input	ANA. V (Analog, variable)		2points 0.0 - 20.0 mA range 1 - 180spm
	Pulse		Potential free contact or open collector, Max. 100Hz
	Current		DC 0 - 20 mA (Input resistance 200)
	Level sensor		Potential free contact or open collector, 2 - steps contact
Output	Flow counter		Open collector (With DC 12 V power output)
	Output 1	Mechanical relay AC 250 V 2 A	
		Pre - STOP, STOP, Count UP, Flow alarm	
		STOP is standard. One or more can be selected among above as option.	
	Output 2	Photo - MOS relay AC / DC 24 V 0.1 A	
		Pre - STOP, STOP, Synchronous with stroke, Count UP, Flow alarm, Pump operation	
		Synchronous with stroke is standard. One can be selected among above as option.	

Note: When OUT 1 and OUT 2 are used at the same time, voltage is limited to AC / DC 24 V.

Dimensions in mm



Optional accessory	Check valve	CA: Available in PVC and CFRPP.	CB: In-line type to be connected in the middle of a hose; made of PVC.
		CCA: Available in PVdF.	CS: Made of stainless steel.

www.iwakipumps.jp

IWAKI CO.,LTD. 6-6 Kanda-Sudacho 2-chome Chiyoda-ku Tokyo 101-8558 Japan TEL : (81)3 3254 2935 FAX : 3 3252 8892

EUROPE / U.S.A.

European office : IWAKI Europe GmbH	TEL: (49)2154 9254 0	FAX: 2154 9254 48
Austria : IWAKI (Austria) GmbH	TEL: (41)26 674 93 00	FAX: 26 674 93 02
Belgium : IWAKI Belgium N.V.	TEL: (32)13 67 02 00	FAX: 13 67 20 30
Denmark : IWAKI Nordic A/S	TEL: (45)48 24 2345	FAX: 48 24 2346
Finland : IWAKI Suomi Oy	TEL: (358)9 2745810	FAX: 9 2742715
France : IWAKI France S.A.	TEL: (33)1 69 63 33 70	FAX: 1 64 49 92 73
Germany : IWAKI Europe GmbH	TEL: (49)2154 9254 50	FAX: 2154 9254 55
Holland : IWAKI Holland B.V.	TEL: (31)297 241121	FAX: 297 273902
Italy : IWAKI Italia S.R.L.	TEL: (39)02 990 3931	FAX: 02 990 42888
Norway : IWAKI Norge AS	TEL: (47)66 81 16 60	FAX: 66 81 16 61
Spain : IWAKI Iberica Pumps, S.A.	TEL: (34)943 630030	FAX: 943 628799
Sweden : IWAKI Sverige AB	TEL: (46)8 511 72900	FAX: 8 511 72922
Switzerland : IWAKI (Schweiz) AG	TEL: (41)26 674 93 00	FAX: 26 674 93 02
U.K. : IWAKI Pumps (UK) Ltd.	TEL: (44)1743 231363	FAX: 1743 366507
U.S.A. : IWAKI America Inc.	TEL: (1)508 429 1440	FAX: 508 429 1386

ASIA / OCEANIA

Australia : IWAKI Pumps Australia Pty Ltd.	TEL: (61)2 9899 2411	FAX : 2 9899 2421
China : IWAKI Pumps Co., Ltd.	TEL: (852)2607 1168	FAX: 2607 1000
Hong Kong : IWAKI Pumps Co., Ltd.	TEL: (86)21 6272 7502	FAX: 21 6272 6929
Shanghai : IWAKI Pumps (Shanghai) Co., Ltd.	TEL: (86)20 8435 0603	FAX: 20 8435 9181
Guangzhou : GFTZ IWAKI Engineering & Trading Co., Ltd.	TEL: (86)10 6442 7713	FAX: 10 6442 7712
Beijing : GFTZ IWAKI Engineering & Trading Co., Ltd. (Beijing office)	TEL: (82)2 2630 4800	FAX: 2 2630 4801
Korea : IWAKI Korea Co.,Ltd.	TEL: (60)3 7803 8807	FAX: 3 7803 4800
Malaysia : IWAKIm Sdn. Bhd.	TEL: (65)6316 2028	FAX: 6316 3221
Singapore : IWAKI Singapore Pte Ltd.	TEL: (62)21 6906606	FAX: 21 6906612
Indonesia : IWAKI Singapore (Indonesia Branch)	TEL: (886)2 8227 6900	FAX: 2 8227 6818
Taiwan : IWAKI Pumps Taiwan Co., Ltd.	TEL: (66)2 322 2471	FAX: 2 322 2477
Thailand : IWAKI (Thailand) Co.,Ltd.	TEL: (84)613 933456	FAX: 613 933399
Vietnam : IWAKI Pumps Vietnam Co., Ltd.		



Caution for safety use: Before use of pump, read instruction manual carefully to use the product correctly.

Actual pumps may differ from the photos. Specifications and dimensions are subject to change without prior notice. For further details please contact us.