



Upgraded software with New Features & Improved Functions

New Features

- Feedback control is now available with digital pulse signal operation in addition to analog control.
- Alarm output can be programmed for either normally open or normally closed operation.

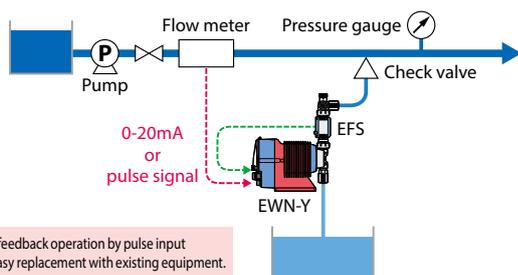
The new EWN-Y electromagnetic pump combined with EFS flow sensor provides accurate real time control & display of dosing rate.

The required flow rate is simply input to the pump. Through feedback from the EFS sensor, the pump constantly adjusts its speed to maintain the set dosing rate - even under changing temperature or suction & discharge pressure conditions.

The EFS is mounted directly on the pump to digitally display dosing rate per minute or hour - ALL WITHOUT ANY CALIBRATION.

The EWN-Y gives a proportional 4-20mA output signal of dosing rate and displays operating history such as total flow volume and power-on time.

Application Example



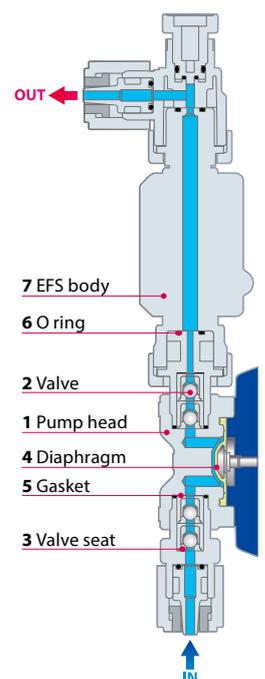
Flow rate feedback operation by pulse input enables easy replacement with existing equipment.

- The EWN-Y pump automatically recognizes the EFS sensor when connected and powered.
- Install a CBN check valve when discharge-line length is less than 3m. Use a CBN check valve (purchase separately) when discharge-line length is 3m or more.
- The EFS sensor may not measure dosing rate if non-conductive media such as oil are present. Remove such impurities from dosing pipework before using the EFS, to give the required minimum conductivity of 1000mS/m.

Wet-End Materials

	VC	VH	VS ^{Note}
1 Pump head		PVC	
2 Valve	Alumina ceramics	HASTELLOY® C276 equivalent	SUS316 equivalent
3 Valve seat	FKM	EPDM	
4 Diaphragm	PTFE+EPDM EPDM is not wet-end		
5 Gasket	PTFE		
6 O ring	FKM	EPDM	
7 EFS body	PVDF		
EFS electrode	Titanium	HASTELLOY® C22 or equivalent	

Note : EWN-B31 and C31, 36 only.



Specifications

Pump

		EWN-B11	EWN-B16	EWN-B21	EWN-B31	EWN-C16	EWN-C21	EWN-C31	EWN-C36
Max. discharge capacity	mL/min	38	65	100	200	80	130	270	420
	mL/shot	0.05 to 0.11	0.09 to 0.18	0.14 to 0.28	0.28 to 0.56	0.09 to 0.22	0.14 to 0.36	0.3 to 0.75	0.47 to 1.17
Max. discharge pressure	MPa	1.0	0.7	0.4	0.2	1.0	0.7	0.35	0.2
Stroke rate	% (spm)	0.1 to 100 (1 to 360)							
Stroke length	% (mm)	50 to 100 (0.5 to 1.0)				40 to 100 (0.5 to 1.25)			
Current	A	0.8				1.2			
Average power consumption	W	20				24			

• The specification above is based on pumping clean water at room temperature and rated voltage.
 • Flow rates were collected at the maximum discharge pressure, 100% stroke length and 360spm.

Controller

Operation mode	MAN control	Operation at MAN speed	0.1 to 100.0% (1 to 360spm)
		Feedback control	0.1 to 999.9mL/min 0.001 to 59.994L/H 0.001 to 15.828GPH
EXT control		ANA.R (analogue rigid)	4-20, 20-4, 0-20, 20-0mA (proportional operation with stroke rate)
		ANA.V (analogue variable)	2 point setting (set point 1 and 2, flow rate or stroke rate)
		BATCH (batch operation)	0.1 to 99999.9mL 0.001 to 99.999L 0.001 to 26.385G
		PLS (pulse operation)	2 point setting (set point 1 and 2, flow rate or stroke rate) ^{Note1}
Display	LCD		14x5 backlit LCD ^{Note2} indicates operating conditions, a flow rate and units.
	LED	ON Green/Orange x1	Lights orange as powered on. Blinks green while ready for operation
		STOP Red/Orange x1	Lights red at STOP signal input, Lights orange at Pre-STOP signal input
		OUT Red x1	Flashes at each output
Keypad	5 keys		START/STOP, EXT, ▲, ▼, Disp
Control function		STOP/Pre-STOP	Pump keeps running during Pre-STOP signal input Operation stop at STOP signal input ^{Note3}
		Priming (PRIME)	Max spm operation by pressing ▲ and ▼ keys
		Key lock	Keypad lock and release
		Inter lock	Operation stop at contact input ^{Note3}
		Calibration	Setting of the liquid volume per shot
		Buffer	BATCH Buffer on/off, Accumulated to the maximum volume at each rate
	Upper limit ^{Note4}		Stroke rate 100.0% (fixed rate), Standard: 360spm / High compression: 180spm / High pressure and viscosity: 240spm
Input		Buffer pulse ^{Note5}	No voltage contact or open collector ^{Note6}
		Analogue	0 to 20 mADC (input resistance 220Ω)
		STOP/Pre-STOP (level sensor)	No voltage contact or open collector ^{Note6}
		AUX	No voltage contact or open collector ^{Note6}
		Interlock	No voltage contact or open collector ^{Note6}
		Batch Start/Stop	No voltage contact or open collector ^{Note6}
	Pulse	No voltage contact or open collector ^{Note6}	
Output		OUT1	No voltage contact (mechanical relay) 250VAC at 3A (resistance load), Enable or disable the alarms of STOP, Pre-STOP, Interlock, Batch, Out of measurement and Poor flow
		OUT2	No voltage contact (photoMOS) 24 VAC/DC at 0.1A, Enable or disable the alarms of STOP, Pre-STOP, Interlock, Batch, Out of measurement and Poor flow or Synchronous output (sensor/pump) ^{Note7}
		Analogue	4 to 20mADC (The max load resistance is 500Ω)
Buffer memory			Nonvolatile memory
Power voltage ^{Note8}			100 to 240VAC 50/60Hz

Electromagnetic flow sensor

Model	Capacity	Accuracy	Pump
EFS-05	Above 40mL/min	±5%RD	EWN-B11/16/21, EWN-C16/21
	Below 40mL/min	±2mL/min	
EFS-10	Above 120mL/min	±5%RD	EWN-B31, EWN-C31/36
	Below 120mL/min	±2mL/min	

Note1: The maximum frequency of the input pulse is 500Hz (Duty 50:50).

Note2: A push of any keypad lightens the backlit LCD. The LCD stops lightening 1 minute after the last key operation. When the backlit LCD lights up, key operation is possible.

Note3: Operation start at contact input is also programmable.

Note4: The pump can not run over the upper limit even if set to run beyond that speed in an EXT mode.

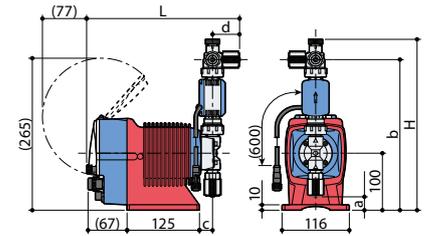
Note5: The maximum frequency of the input pulse is 100Hz (Duty 50:50).

Note6: The maximum applied voltage is 12V at 2.3mA. The minimum application load should be 1mA or below when using a relay.

Note7: Output can be programmed to open or close with Alarm.

Note8: Observe the allowable voltage of 90 to 264VAC. Otherwise failure may result.

Dimension in mm



Model	H	L	a	b	c	d
EWN-B11, B/C16-21	(299)	(265)	(24)	(264)	(23)	(47)
EWN-B/C31	(311)	(267)	(6)	(276)	(25)	(48)
EWN-C36	(311)	(267)	(7)	(276)	(24)	(48)

Pump Identification

EWN - B 11 VC 1 J Y - FT - □□

1 2 3 4 5 6 7 8 9

1 Series name

2 Drive unit symbol
(Average power consumption)
B: 20W C: 24W

3 Diaphragm diameter
11: 10mm 16: 15mm
21: 20mm 31: 30mm
36: 35mm

4 Wet-end material symbol
VC, VH, VS
For details, see the table of materials.

5 Connection
1: Ø4 x Ø9 (B11,B16,B21,C16,C21)
4: Ø8 x Ø13 (B31,C31,C36)

6 Power code
J: With Japan/Asia cord

7 Controller function code
Y: High functional

8 Electromagnetic flow sensor code

Code	Dia.	Body material	Electrode	O ring
FF	05/10	PVDF	Titanium	FKM
FT			HASTELLOY® C22 or equivalent	
FH				EPDM

9 Special configuration code

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() Country codes

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.

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