Electromagnetic metering pumps

EW/Y type
Electromagnetic metering pumps with various controls and abnormality detections

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

<table>
<thead>
<tr>
<th>Wet-end materials</th>
<th>VC</th>
<th>VH</th>
<th>PC</th>
<th>PH</th>
<th>TC</th>
<th>SH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pump head</td>
<td>PVC</td>
<td>PVC</td>
<td>GFPRP</td>
<td>GFPRP</td>
<td>PVDF</td>
<td>SUS316</td>
</tr>
<tr>
<td>Valve</td>
<td>Alumina ceramic</td>
<td>Hasteloy C276</td>
<td>Alumina ceramic</td>
<td>Hasteloy C276</td>
<td>Alumina ceramic</td>
<td>Hasteloy C276</td>
</tr>
<tr>
<td>Valve seat</td>
<td>FKM</td>
<td>EPDM</td>
<td>FKM</td>
<td>EPDM</td>
<td>FKM</td>
<td>SUS316</td>
</tr>
<tr>
<td>Valve guide</td>
<td>PVC</td>
<td>PVC</td>
<td>GFPRP</td>
<td>GFPRP</td>
<td>PVDF</td>
<td>SUS316</td>
</tr>
<tr>
<td>Valve gasket</td>
<td>PTFE</td>
<td>PTFE</td>
<td>PTFE</td>
<td>PTFE</td>
<td>PTFE</td>
<td>PTFE</td>
</tr>
<tr>
<td>O-ring</td>
<td>FKM</td>
<td>EPDM</td>
<td>FKM</td>
<td>EPDM</td>
<td>FKM</td>
<td>–</td>
</tr>
<tr>
<td>Diaphragm</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
</tbody>
</table>

Note: Illustration shows PVC, GFPRP and PVDF type.

Pump identification

EW - F 11 VC - 20E P Y 2

- Series name: Leak electromagnetic metering pump EW series
- Drive unit symbol
  Average power consumption / Length of stroke
  B: 10W / 1mm  F: 16W / 1.25mm
- Effective diameter of diaphragm:
  08: 8mm  11: 10mm  16: 15mm  21: 20mm
  31: 30mm  36: 35mm  46: 45mm
- Wet-end material symbol
  For details, see the table of materials.
- Power supply voltage symbol
  20E: AC220V/230V/240V single phase
- Power cord terminal
  P: With plug
  No code: Crimp-style terminal
- Controller unit type
  Y: Y type
- Diameter of connecting tube (mm)
  2: 4x6  3: 6x6  5: 9x12  6: 10x12  9: Rct/4
  23: 6x12  24: 5x8
**Specifications of pump**

<table>
<thead>
<tr>
<th>Model</th>
<th>B08</th>
<th>F11</th>
<th>F16</th>
<th>F21</th>
<th>F31</th>
<th>G21</th>
<th>G31</th>
<th>G36</th>
<th>G46</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capacity</td>
<td>VC, VH, PC, PH</td>
<td>mL/h</td>
<td>0.6</td>
<td>1.5</td>
<td>2.5</td>
<td>3.6</td>
<td>9.0</td>
<td>4.7</td>
<td>9.9</td>
</tr>
<tr>
<td></td>
<td>TC, SH</td>
<td>mL/h</td>
<td>0.6</td>
<td>1.5</td>
<td>2.4</td>
<td>2.2</td>
<td>-</td>
<td>4.7</td>
<td>9.9</td>
</tr>
<tr>
<td>Max. discharge pressure</td>
<td>MPa</td>
<td>1.0</td>
<td>1.0</td>
<td>1.0</td>
<td>0.7</td>
<td>0.3</td>
<td>1.0</td>
<td>0.6</td>
<td>0.4</td>
</tr>
<tr>
<td>Stroke length (Effective adjustment range)</td>
<td>mm</td>
<td>1 (50-100%)</td>
<td>1.25 (40-100%)</td>
<td>1.5 (30-100%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stroke rate</td>
<td>1-180 rpm</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tbody>
</table>

**Power supply** (common to 50/60Hz)
- AC220V / 230V / 240V single phase

**Specifications of controller**

**Operation mode**
- MAN: 1 - 180 smp
- EXT
  - DIV (Dividing): 1 - 9999 : n
  - Mult (Multiply): n : 1 - 9999
  - ANA, R (Analog, rigid): 4 - 20, 0 - 20, 20 - 4 - 20 - 0 mA
  - ANA, V (Analog, variable): 2points 0.0 - 20.0 mA range 1 - 180 smp

**Input**
- Pulse: Potential free contact or open collector, Max. 100Hz
- Current: DC 0 - 20 mA (Input resistance 2KΩ)
- Level sensor: Potential free contact or open collector, 2 - steps contact

**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.

**Dimensions in mm**

**Optional accessory**
- Check valve: 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

**For high viscosity application**

**EW-HP6 models**
- Max. discharge capacity: 7.44L/hr (124mL/min)
- Max. discharge pressure: 0.35 MPa
- Max. stroke rate: 180 smp
- Main materials: GFRPP, EPDM, SUS316

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

**Additional note:** 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.