



PUMP PROTECTOR

**DRN**

## Detects unusual pump operating conditions including dry-running and overload

The DRN model protects equipment (including pumps) from damage!

Minimizes production downtime.

Identifies possible causes of alarms so they can be investigated and addressed.

**Multiple Input** — Two analog, one digital, one temperature input and one current input

**Easy operation** — Equipped with EASY setup mode to remember the operation status and set the lower/upper limit values, as well as AUTO setup mode

**Bar graph** — Visible indication of current operating status

**Logging capability** — Data log feature for preventative maintenance scheduling

**Communication** — RS485 external communication capability

### Specifications

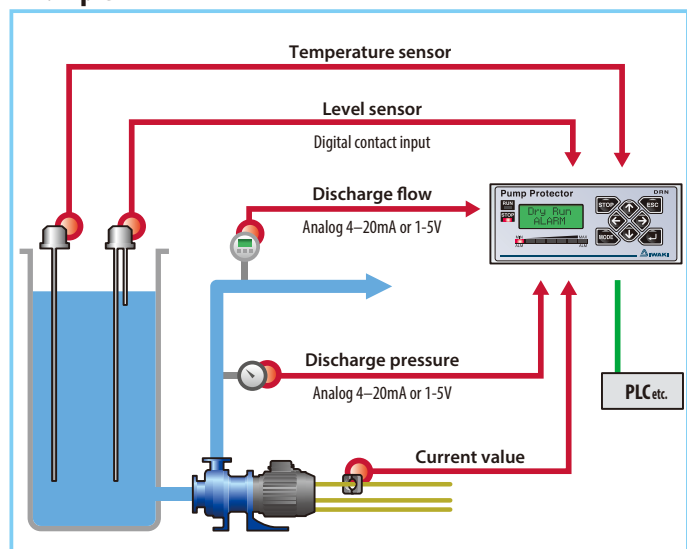
Model	DRN-01	DRN-02
Amperometric range	0.5–30.00A	5.0–200.0A
Unit's source voltage	AC100–240V 50/60Hz 10VA	
Operating temperature	0–40°C	
Operating humidity	35–85%RH	
Current sensor	JS10FL	JS24FL
Analog input 1	4–20mA or 1–5V	
Analog input 2	4–20mA or 1–5V	
Temperature range	–50–200°C (Pt100, K thermocouple)	
Digital contact input	No-voltage contact signal (also for external reset)	
Contact output	For pre-alarm: AC250V 8A (load resistance) 1c For pump-stopping: AC250V 8A (load resistance) 1a	
Logging capability	Past records (with the calendar)	
Communication	RS485 incorporated	
Supported models	MX, SMX, MXM, MDM, MDE, MDW	
External dimension in mm	D71 x W108 x H90	

\* Not used as an inverter.

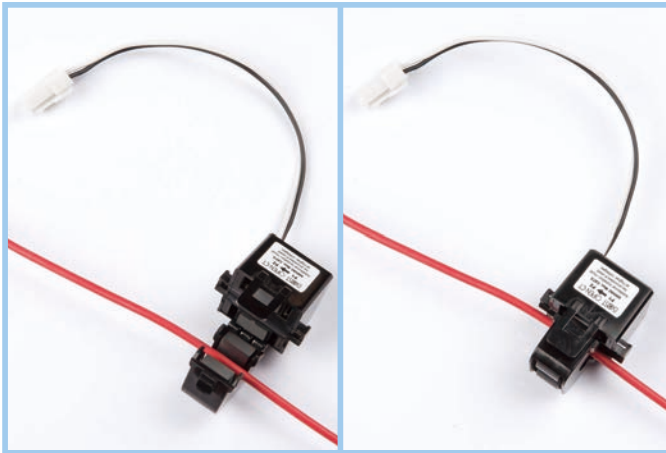
\* Safety: UL 61010-1  
CAN/CSA-C22.2 No. 61010-1-12  
EN61010-1 EN61326-1, EN50581

\* EMC: EN61326-1  
\* RoHS: EN50581

### Example

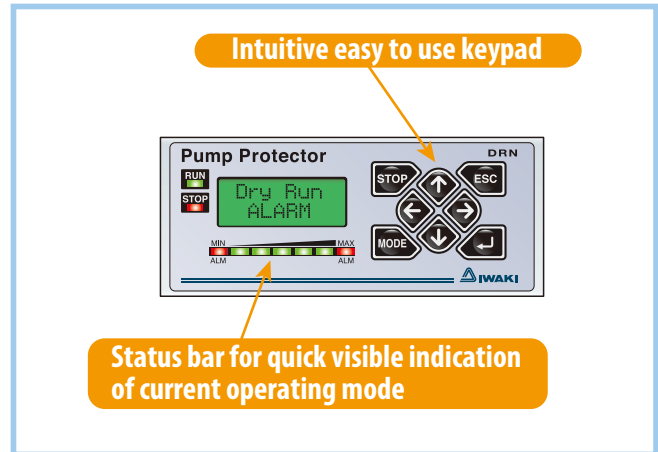


**Clamp-type current sensor for ease of installation**



No modification of motor leads necessary.

**Improved operability and visibility**



Normal operation : Green Signal  
Abnormal operation : Red Signal

**Features**

Item	Description
<b>Input</b>	1. Motor current measurement (DRN-01: 0.5–30.00A, DRN-02: 5.0–200.0A)
	2. Discharge pressure measurement (4–20mA or 1–5V)
	3. Analog measurement (4–20mA or 1–5V)
	4. Temperature measurement (-50–200°C K-thermocouple or platinum resistance temperature detector Pt100)
	5. Digital contact input (for external reset, setup change or level sensor)
<b>Setup methods</b>	1. EASY setup (set lower/upper limits based on the logged pump status at low/high flow rate)
	2. AUTO setup (automatically set lower/upper limit based on normal pump status)
	3. MANUAL setup (manually set lower/upper limit)
<b>Bar graph display</b>	Visual indication of current pump operation within a programmed range
<b>Log review</b>	The built-in calendar enables review of various items, including:
	1. Time and cause of alarm (20 most recent alarms)
	2. Time of maintenance (10 most recent operations)
	3. Cumulative operating time of a pump and a DRN device
	4. Cumulative number of times MC relay and ALM relay are activated
	5. Setting
6. Model	
<b>Pre-alarm</b>	When measured value exceeds the pre-alarm set value, a pre-alarm is issued before stopping the pump.
<b>Pump-stopping output</b>	When measured value is out of the lower/upper limit range, the pump shut off relay is activated.
<b>Current offset</b>	Offsets the measured current value.
<b>Scaling</b>	Changes the measurement range and unit.
<b>Temperature offset</b>	Offsets the measured temperature.
<b>Maintenance time notice</b>	Displays a notification that the device should be maintained.
<b>Dual detection</b>	Monitors motor current and discharge pressure. When an alarm is activated for either, displays the assumed cause. (LowFlow, OverLoad, DryRun, HighFlow)
<b>Automatic cavitation detection</b>	Automatically detects cavitation and issues a warning.
<b>Communication</b>	RS485 communication.
<b>Other Features</b>	Keypad lock, Initialization.



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**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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