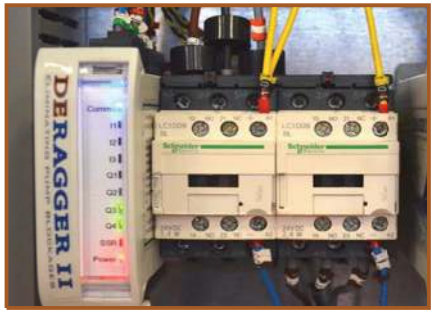
DERAGGER II®

ELIMINATING PUMP BLOCKAGES

The multi-award-winning DERAGGER II is a retrofit, patented electric pump management system that delivers **real-time monitoring** to automatically eliminate wastewater pump blockages **before they form**. Benefits include reduced operational costs, rapid payback, an improved environmental impact, and time saved from reactively dealing with blockages and ragging.



Technical Characteristics In Brief

Size:
Width 35mm
Height 100mm
Depth 115mm

Mounting:
TS35 Din rail

Protection degrees:
IP20

Supply voltage:
110Vac – 230Vac

Control Voltage:
24Vdc or 110 – 230Vac

Fault outputs:
1 x N/O
1 x N/C

Inputs:
Run, External Trip / Trigger and Reset

Current Ratings :
0 – 800A

Communications:
Modbus, Profibus DP

Customisable Clean Cycle

Anti-ragging/Blockage Prevention

- **Real-time monitoring and elimination**
- **Cleans pump on start up**
- **Timed clean trigger**
- **External trigger from PLC or low flow**
- **Trigger on 0-20mA analogue input**
- **Fully customisable clean cycle**

Customisable with Apps

Extra apps can be added to the unit for customised functionality, such as:

- **Wet well clean cycle**
  Allows the well to be pumped below its normal stop level for a user-defined period of time. This breaks down and passes forward any rags gathered at the bottom of the well, thus maintaining a clean well.
- **Odour control**
  Runs the pump through a clean, if it has not run for a while. This prevents stagnation and settling in the well.
- **Batch/volume pumping**
  On a start command, the pump will run for a user adjustable period of time to pump the well down, which is useful as a back up to level device.
- **Pump dry run protection**
  Monitors the pump's power, and on low torque will inhibit the pump. This provides dry run protection. If this happens regularly, the device can be set up to trip the pump.
- **Analogue input**
  Allows configuration of up to 5 separate setpoints on each of the 2 analogue inputs. The following Deragger actions can be triggered on rising above or falling below the setpoint threshold: Start, Stop, Clean, Trip or Alarm.
- **Pump data analysis**
  Stores one year's worth of data in relation to daily energy consumptions, power, current, flow and pump efficiency in terms of pumped volume to consumed energy ratio. Additionally stores alarms and pump trip events.

Local Pump Diagnostics

The **DERAGGER II** boasts sophisticated built-in diagnostics and power monitoring.

With 365 days of downloadable data, you can conveniently determine maintenance and replacement schedules for pumps.

Over 300 timestamp events, alarms and trips are stored on the device.

Diagnostic counters include:

- **No. of cleans**
- **No. of starts**
- **No. of trips**
- **Under / over current trips**
- **Under / over voltage trips**
- **Phase loss trips**
- **Motor run hours**
- **KW/Hrs**
- **Average daily KW/hrs**
- **Average daily run time**
- **Average daily current consumptions**
- **Average daily KW/pumped flow**

1 module, 4 starters

Remote Pump Data Analysis

The **DERAGGER II** locally logs 365 days of performance data. In addition, Clearwater Controls can provide enhanced pump analysis through our remote monitoring service.

Our secure server can read the data from site and provide either a daily, weekly or monthly detailed report on the performance of each pump. This is emailed directly to the plant/asset manager.

This service can also be used to send specific alarm data to the responsible person for the site, as well as create a maintenance predictor.

Pump Protection

The **DERAGGER II** has effective motor thermal protection tested to IEC 60947-4. On motor overload, the **DERAGGER II** trips out, the fault normally open and normally closed contacts change state, and the forward and reverse outputs are opened to stop the pump in the same way as a traditional thermal overload.

The overload protection has thermal curves that simulate the heating up and cooling down of the motor. All calculations are performed through sophisticated software that estimates the motor temperature using the True RMS motor current supplied by the power monitor.

The thermal protection adopts the standard three-phase IP55 motor as a model. It also takes into consideration if the motor is cooling while being driven or not being driven. The thermal image cooling time depends on the motor power, i.e., for each power there is a different cooling time. The estimated motor temperature is timestamped and stored in non-volatile memory. Therefore, by turning off the **DERAGGER II** the motor temperature is kept. When the **DERAGGER II** is energised again, the thermal image is updated from the memory and timestamp.

The **DERAGGER II** also contains the following pump protection:

- **Phase loss**
- **Current imbalance**
- **Under / over current**
- **Under / over voltage**
- **Frequency out of range**

Description	Value	Tolerance
Protection degree	IP20	
Mounting arrangement	TS35 Din rail	
Operating conditions	0 - 50C (Non condensing)	
Supply Voltage	85-265Vac (50/60Hz)	
Power consumption	4.5W typical	
Digital Input Voltage	3 x 110-230Vac optically isolated	+/-10%
Insulation	2.5kV	
Relays	3 x volt free SPNO (250V,3A max) 1x volt free SPDT (250V,10A max)	
Solid State relay	1 x SPNO (250V, 100mA max)	
Voltage measurement	Up to 600 Vac	
Analogue Inputs (4-20mA)	1 x passive, 1 x active/passive 15Vdc for loop power	
Status feedback	10 LED's	
Internal fuse size	1A	
Terminals	Torque 0.5Nm Conductor CSA 0.5-2.5mm²	
Communications	2 wire RS485 Modbus RTU, Profibus DP	

24V data available on request

THE MULTI-AWARD WINNING PATENTED DERAGGER II represents a truly cost efficient and powerful solution to pump ragging.

THE SOLUTION IS CLEAR