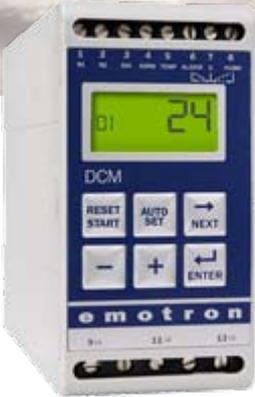


# Drainage control the easy way



Emotron DCM control unit



## Keeping dry and saving money

*Drainage has never been easier or more cost-efficient. Controlling and supervising your submersible pumps using an Emotron DCM will result in considerable savings. You can safely leave the pump unattended knowing that operation will be adjusted to the flow and that the pump will not be drawing air or causing unnecessary wear. No energy is wasted, wear is minimized and damage is prevented. You can even stop worrying about level sensors, because you don't need them anymore!*

### **Drain water, not your wallet**

You can save a lot of money by ensuring the reliable and efficient operation of your submersible pumps. The Emotron DCM control unit has been developed especially for this purpose. It offers automatic control and supervision without level sensors.

An Emotron DCM is the ideal choice for tough environments which demand a great deal from equipment, for example construction sites, quarries, mines and tunneling works. Whether there are site issues due to sludge and mud or the pumps frequently need to be moved between sites, the Emotron DCM easily meets all challenges in a cost-efficient way. You will benefit from optimized operation, extended pump lifetime and reduced energy, maintenance and installation costs.

### **The pump motor as a sensor**

The harsh conditions in drainage applications often make it impractical to use level sensors, floats or switches. They require constant monitoring due to the risks of being blocked by sludge or mud, or being moved by objects floating in the liquid.

This is not a problem with the Emotron DCM, since it uses the pump motor as a sensor. Voltage and current are measured in order to calculate the motor input power, resulting in a very accurate load value over the entire load range. This monitoring technique ensures maximum reliability. It also saves you the cost of buying and installing external sensors, not to mention the level of attention required to ensure they do their job. You can of course still connect a high level switch as an extra safety measure if you wish.

### **Energy savings with automatic control**

Drainage pumps are often left unattended, running around the clock whether or not there is water to pump. This ensures the site is always dry, but it also wastes energy and quickly wears out pump components. Adapting pump operation to the actual flow will dramatically cut energy consumption and maintenance costs.

The Emotron DCM offers a very cost-efficient and reliable solution: it ensures operation is continuously and automatically adapted to the flow rate by calculating the appropriate pumping cycle. The pump's running time is measured during operation and a rest period is determined based on this measurement. A high inflow results in a long run period, and thus a shorter rest period. A low inflow consequently leads to a longer rest. This means the pump is always started at the same level.

**No more snoring pumps**

Continuously running pumps are also at risk of starting to draw air once the pit has been pumped free of liquid. Many submersible pumps actually spend more time “snoring” than doing their work, causing unnecessary energy consumption and wear. The impeller and other pump parts are quickly worn out when drill cuttings, gravel or other particles accumulate in the pump hydraulics.

In addition to this, the Emotron DCM constantly monitors the power supply to the motor and detects any deviation from pre-set levels, preventing pump damage and minimizing downtime. The control unit immediately activates an alarm or stops the pump if a problem arises.

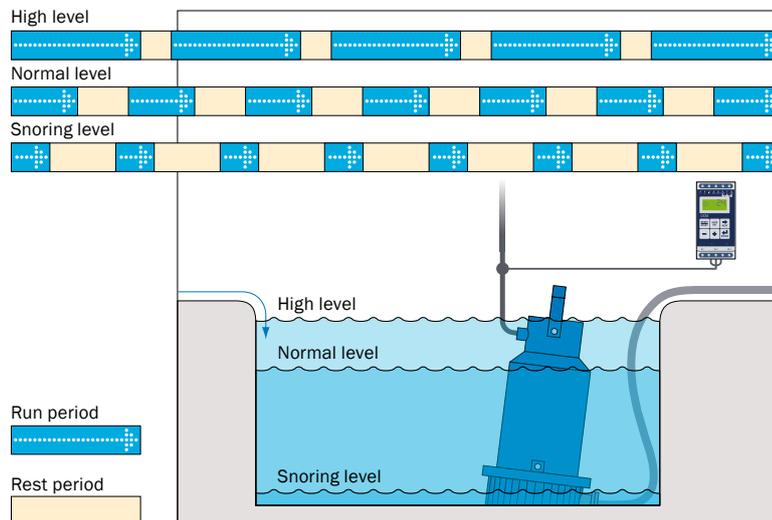
**Quick set-up and maintenance free**

The Emotron DCM is an extremely reliable and maintenance-free electronic device that does not require constant monitoring to ensure proper function. The compact unit is mounted on a standard DIN rail inside the cabinet, close to the pump motor contactor, and is thus protected from any harsh environment.

Levels for starting and stopping the pump are easily set using a unique Auto set function. It takes just three seconds and the push of a single key to get started. The Auto set can be used regardless of whether there is liquid in the pit.

**Continuous status information**

Any situation that can cause a problem when starting a pump is immediately detected and an alarm is activated. Parameters which can be monitored by an Emotron DCM include phase sequence, phase asymmetry, pump motor temperature, undervoltage, overvoltage and current from a current transformer.



The display presents a variety of data. The operator can easily keep track of, for example, total pumping time, pumping time since the latest start, number of starts, time delay before next start and high-level pumping time. The control unit also displays measured voltage, power and peak power.

**Parallel pumps for maximum reliability**

Emotron DCM technology can also be used in dual-pump systems. Two control units are used to monitor two submersible pumps that run alternately, for example in sewage treatment and water purification plants. This master/slave solution offers high reliability. If a problem occurs with one pump, the control unit automatically starts the other pump, preventing unnecessary downtime.



*Drainage control with an Emotron DCM is easy and cost-efficient. No need to worry about snoring pumps or blocked sensors.*

**Technical data**

Supply voltage	3 x 100 to 240 VAC 3 x 380 to 500 VAC 3 x 525 to 690 VAC (±10%)
Frequency	45 to 65 Hz
Current input	Up to 999 A via current transformer
Protection class	IP20
Approvals	CE (up to 690 VAC), UL and cUL (up to 600 VAC)

For further technical information, please see the Emotron DCM data sheet.

*Different water levels for starting the pump can be entered via the control panel. The Emotron DCM then uses an algorithm to calculate the appropriate run and rest periods. Pump operation is automatically adapted to the pit filling rate, minimizing energy consumption and component wear.*

# Dedicated drive

Emotron develops products for starting, protecting, controlling and stopping machines and processes driven by electric motors. Our drive is to create measurable benefits for our customers through reliable, cost-efficient and user-friendly solutions. By focusing on selected applications, such as pumps, cranes and lifts, we can offer functionality optimized for specific needs.

Since 1975 we have established a solid position as an innovative and pioneering company. Research and development takes place at our head office in Sweden and at our subsidiaries in Germany and the Netherlands. Germany is also the location for the Emotron technical centres for lift and crane solutions. We have sales offices in Sweden, Germany, the Netherlands, China and Latin America, as well as a worldwide network of distributors and service partners.



## Products for your specific needs



Our complete product portfolio offers optimum solutions for your specific needs. The products are all based on the same technology platform and can easily be integrated in complete solutions. Wide power range, high protection class and compliance with global standards mean they fulfil the highest demands.

- Shaft power monitors – protect your process from damage and unplanned downtime.
- Softstarters – ensure smooth starts and safe stops.
- Variable speed drives – minimize energy consumption and wear.



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