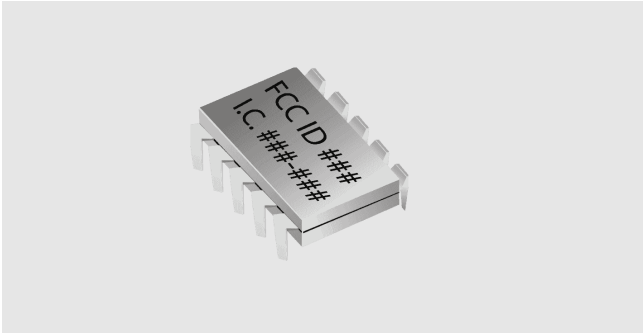


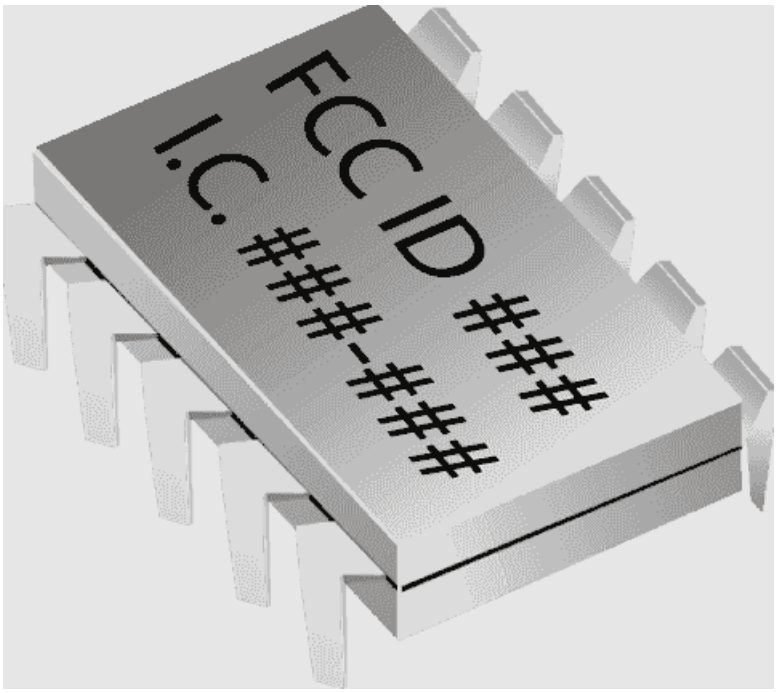

# Delaval CCM315 Control and Communication Module Instruction Manual



Contents



## Delaval CCM315 Control and Communication Module




## Applicant

### Applicant name:

DeLaval International AB
Gustaf De Lavals väg 15 Sweden

## Type Model

### Type model:

- CCM315 – Control and communication module with Bluetooth BLE
- PVS100 – Pulsation and vacuum sensor with Bluetooth BLE

## Safety precautions

### Note to operator

It is the operator’s responsibility to see that any person involved with the use or operation of this equipment follows all safety and operational instructions. Under no circumstances should this equipment be used if the equipment is faulty or the operator does not completely understand the operation of the equipment.

### Disclaimer

The information, instructions and parts listed are applicable and current on the date when issued. DeLaval reserves the right to make changes without notice.

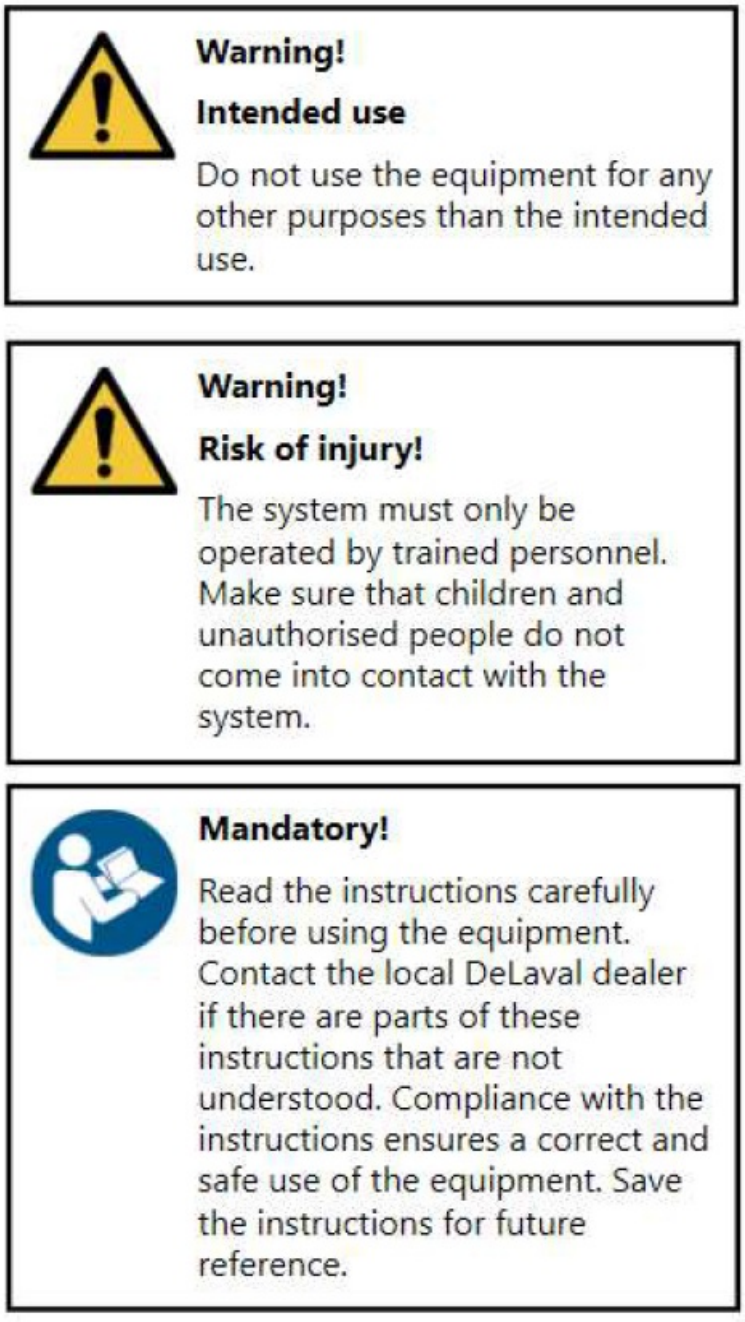
### Definitions of admonishments

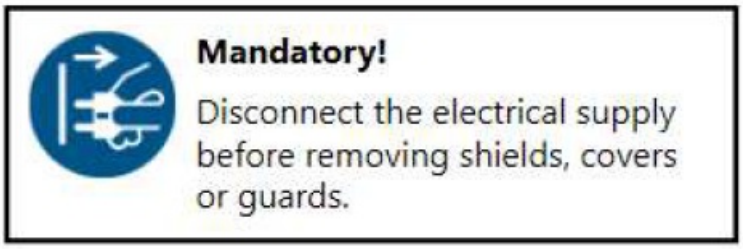
Admonishments are safety related warning messages.
Admonishments provide important information intended to prevent incorrect or hazardous use of equipment, machinery or software, and support risk assessment. The following list defines the different types of

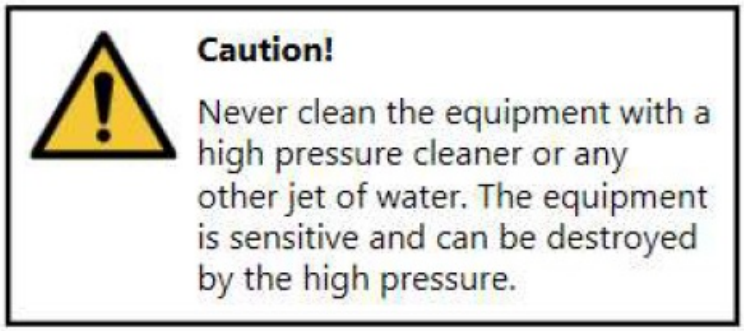
admonishments used in DeLaval documentation:

- Danger: Refers to imminent and severe risk. Failure to comply with instruction will result in serious injury or death.
- Warning: Refers to a potential but severe risk. Failure to comply with instruction could result in injury or death.
- Caution: Refers to a limited risk. Failure to comply with instruction could result in minor injury.
- Mandatory: Refers to an action or behavior which is essential to safe and successful use of the equipment.
- Prohibited: Refers to an action or behavior which is incompatible to safe and successful use of the equipment.
- Note! Is intended to draw attention to specific points of importance in the text and advice to prevent equipment damage.

**Safety regulations**




**Safety labels on the equipment**


## Regulatory

### FCC Statement

NOTE: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Changes or modifications to the equipment not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.
To comply with FCC/IC RF exposure limits for general population / uncontrolled exposure, the antenna(s) used for this transmitter must be installed to provide a separation distance of at least 20 cm from any persons and must not be co-located or operating in conjunction with any other antenna or transmitter.

**ISED Canada Statement**

This Device complies with Industry Canada License-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

## Operating instructions

#### Introduction

DeLaval InService™ Remote (ISR) is a cloud based asset management system, providing remote monitoring of equipment performance. Keeping equipment optimized at all times is important to maintain good udder health. Sensors are installed on vacuum systems and pulsators, where data and alarms are delivered to both farmer and service technician. The farmer and service technician can, at any time, access the ISR user interface to check the farm status, see historical alarms, configure system, etc. The system can be accessed by using PC, tablet or smart phone. A selectable number of pulsation curves and milking points are saved daily, every 10th milking by default. They can be retrieved and be compared to identify changes indicating potential problems.
Three types of messages can be delivered to the farmer/service technician:

- Alarm (red) – An urgent fault occurred that needs to be corrected immediately.
- Warning (yellow) – Values over time show a decreasing performance that should be resolved as soon as possible to avoid malfunctions in the near future.
- Notification (blue) – Configurable notifications from specific digital inputs (currently not in use).

If an alarm occurs, a text message and/or e-mail is sent to the recipient, defined by the user. The user can add/remove alarm recipients at any time.
Depending on the service agreement, the service technician can either call the customer, or go to the farm, to solve the problem.

#### DeLaval InService™ Remote pulsation and vacuum sensor PVS100 \

Wireless sensors monitor values to find any deviation from the correct levels. If incorrect values are found, an alert is sent to the CCM315 and forwarded to ISR application and ISR Cloud. PVS100 function is configured in user interface.
The PVS100 has two LED indicators at the top. Depending on the sensor function, each LED represents:

- Each channel for the PVS100 pulsation sensor.
- Each vacuum port for the PVS100 vacuum sensor.

**Light behaviour of the PVS100 pulsation sensor**

Light behaviour Light colour Description
Fixed light – power is on but no vacuum/milking Green Last vacuum OK

- Yellow Last vacuum warning

- Red Last vacuum alarm
- Blue Rebooting/Downloading/Updating software

Blinking with 1 Hz – active milking (vacuum above 20 kPa) Green Vacuum with no alarm

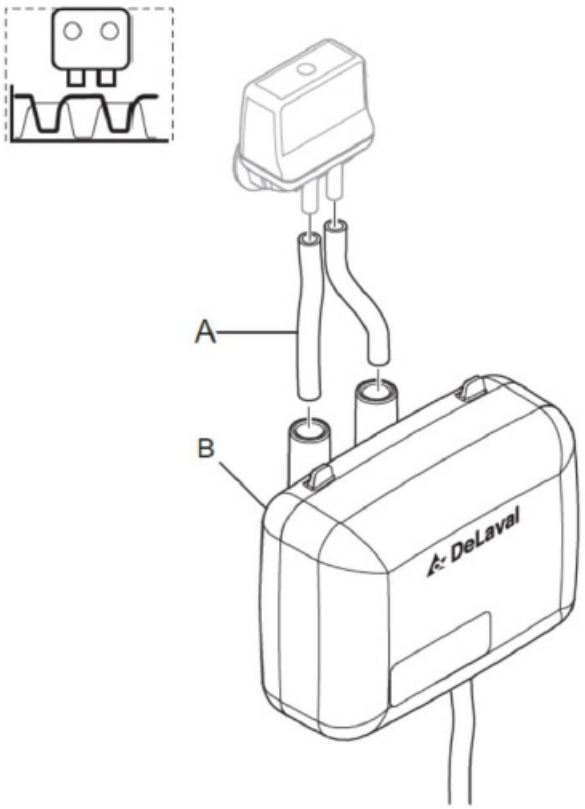
- Yellow Vacuum with warning
- Red Vacuum with alarm

Blinking with 2 Hz – every second blink is blue. The alternate blinking lasts as long as information is being sent via Bluetooth, and minimum for 5 seconds. Green/Blue

- Vacuum with no alarm and transferring information through Bluetooth
- Yellow/Blue Vacuum with warning and transferring information through Bluetooth
- Red/Blue Vacuum with alarm and transferring information through Bluetooth

**Technical data**

**General**




- Electrical supply:
  - 12-24 VDC (limited to maximum 100W LPS)
- Alternative power supplies:
  - 150004868, Power Supply 24VDC 3,8A UL
  - 91626280, DeLaval power supply unit PSU60
  - 91626281, DeLaval power supply unit PSU240 Global
- Power consumption:

- Normal conditions: less than 100 mA
- During start-up: peaks up to 250 mA

**Bluetooth**

- Frequency range: 2402-2480 Hz
- Channel bandwidth: 2 MHz

**Ambient conditions for PVS100 pulsation sensor**

- Temperature
  - Normal operation: +5°C to +40°C
  - Storage/Transport: -40°C to +70°C
- Humidity (relative humidity)
  - Normal operation: 50% – 85%
  - Storage/Transport: 30% – 70%
- Range of environmental conditions
  - Maximum altitude: 2000 MAMSL
  - Over voltage category: II
  - Pollution degree: 3
  - Operation environment is in the barn and/or outside under the roof

#### DeLaval communication and controlmodule CCM315

CCM315 is controlled by the system controller. It is connected to a local farm network through the Ethernet cable. The CCM315 communicates with sensors through Bluetooth (BLE standard).

**Technical data**

**General**


- Dimensions:
  - Length: 51 mm
  - Width: 107 mm
  - Height: 125.4 mm
- Power supply:
  - 24 VDC (24-28 VDC, limited to maximum 100 W – LPS)
- Alternatives:
  - 2150004868, Power Supply 24VDC 3,8A UL
  - 91626280, DeLaval power supply unit PSU60
  - 91626281, DeLaval power supply unit PSU240 Global
- Power consumption:
  - Normal conditions: less than 160 mA
  - During start-up: peaks up to 250 mA

**Bluetooth**

- Frequency range: 2402-2480 Hz
- Channel bandwidth: 2 MHz
- Antenna Gain 0dBi

**Temperature**

- Normal operation: +5°C to +40°C
- Storage/Transport: -40°C to +70°C
- Humidity (relative humidity)
  - Normal operation: 50% – 85%

- Storage/Transport: 30% – 70%

### Range of environmental conditions

- Maximum altitude: 2000 MAMSL
- Over voltage category: II
- Pollution degree: 3
- Operation environment is in the barn and/or outside under the roof

## Documents / Resources

| | |
|---|---|
|  | Delaval CCM315 Control and Communication Module [pdf] Instruction Manual<br>PVS100, UCSPVS100, CCM315, UCSCCM315, CCM315 Control and Communication Module, Control and Communication Module |