

RINGKØBING-SKJERN FORSYNING A/S

**Vaccum Drainage Søndervig**

PROJECT NUMBER 70.1090.01

**TECHNICAL SPECIFICATIONS**



2020-03-23

VEM - VKV - VAND & KLIMA NORD

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## 1 Technical Specifications for Vacuum valves

The tender consists of 110 pieces of vacuum flow valves that is to be installed in a pit with a diameter of 800 mm inside. The pit is collecting the sewer water from 2-6 summer cottages. There is only one chamber in the pit therefore the valve must be resistant to be flooded with sewer water.

The pit has a pre-welded outlet pipe with a diameter of 63 mm and is 0,7 meters from the surface. The valve must be controlled by a float ball with an adjustable level and there must be an automatic air inlet to the vacuum system. For maintains and security there must be a 50 mm ball valve for bypass and a 63 mm ball valve for closing the vacuum line.

For installation there must be an installation guide written in Danish

The vacuum interface valve shall be vacuum operated on opening and spring assisted for closing. Each operating cycle air and sewage shall be removed from the sewage sump simultaneously. The air/water ratio should always be constant so that the air/water ratio in the whole vacuum network will be constant. An air/water ratio of 1,5 to 1 at 100kPa (= atmospheric pressure) should be guaranteed so that in the vacuum network the air/water ratio will become resp. 3:1 at 50kPa (= negative pressure), 3.75:1 at 40kPa, 5.:1 at 30kPa, 7,5:1 at 20kPa etc...

The vacuum interface unit shall transport air & water simultaneously, air afterwards a cycle is not allowed.

All equipment in the interface unit chamber should be of non-corrosive execution and fully submersible operable at all times

For monitoring the valve must be delivered with sensor output for open, close and alarm. A sensor for high level of sewer water in the pit and at control box for connecting the sensors with the output cable. The control box must be with an easy access design and installation. The pits are from 1,5 – 2 meters deep therefore the cables need to be designed for that variation.

A valve monitoring system should be installed with below mentioned Specifications:

- Send data via internet to a webportal.
- All data should be visible via the webportal from any location.
- Exact location of the collection chambers should be mentioned.
- Actual status registration and notification of data including graphs per week, month or year should be monitored.
- Direct information of valve position (open/close) should be given.
- The number of cycles, including time registration an alarm notification should be recorded.
- Send an SMS and e-mail during alarm high level volume in the collection Chamber.

Following documentation is to be delivered immediately after award of contract:

- Drawing of the vacuum system inside the pit

Following documentation is to be delivered together with the first batch:

- User and maintains manual for the vacuum system written in Danish
- Installations manual both for the water and for the electrical part written in English

## 2 Schedule of delivery/procedure for ordering

The equipment described in the technical descriptions is to be delivered in min. batch of 20 pcs. The delivery address is Ringkøbing-Skjern Forsyning, Ånumvej 28, Dk-6900 Skjern.

The first batch must be delivered at the abovementioned address at the **1<sup>st</sup> of May 2020**.

The rest of the batches will be ordered in the period from 1<sup>st</sup> of May 2020 to 1<sup>st</sup> of June 2021.

The subsequent batches must be delivered at the mentioned site within a maximum of 10 days.