PT/427/1018 - AS October 2018

Assessment Schedule for the Functionality of the DERAGGER+ Pump Controller as manufactured by Clearwater Controls Ltd.

independent certification of your products & services

1. SCOPE

This schedule specifies the requirements for the DERAGGER+ wastewater pump controller, as manufactured by Clearwater Controls Ltd.

It is applicable to the use of the product in a control panel containing interface relays and other switchgear.

2. PRODUCT DESCRIPTION

2.1 Introduction

The DERAGGER+ anti-ragging technology monitors pumps in real time to identify and eliminate blockages before they form, meaning pumps no longer need to be lifted and cleaned.

The system comprises an electronic pump manager. It is connected between a pumping station controller and a pump starter relay and in parallel with the pump motor.

The system may be configured to provide full pump diagnostic information including individual phase voltage, current and power to Kw/Hrs, run time and a number of start counters.

2.2 Relevant Standards

The following standards of relevant content were identified for pumping station controllers:

- Sewers for Adoption 7th Edition(1)
- Sewers for Scotland 3rd Edition(2)

2.3 Approval History

This is the first WRc Approved™ certification for the DERAGGER+ Pump Controller.

3. REQUIREMENTS AND TESTING

3.1 Type Testing

Evidence from independently run trials will be used to assess the performance of the DERAGGER+.

When installed across a representative sample of wastewater pumping stations the DERAGGER+ shall demonstrate a consistent reduction in the frequency of site visits to manually unblock the pump.

When installed across a representative sample of wastewater pumping stations the DERAGGER+ shall on average demonstrate energy savings of >15% where pumps have been recently manually cleaned. Where pumps have not been recently manually cleaned savings shall be greater.

The performance shall be considered with reference to pump condition, energy use and blockage history.

3.2 Manufacture

To ensure the quality and performance of the DERAGGER+, the manufacturing process shall include appropriate systems for the:

- Specification of component materials;
- verification that component materials received are to specification;
- handling and storage of all component materials;
- fabrication and quality of workmanship; and
- testing of units prior to dispatch.

The manufacture of the DERAGGER+ and related Quality Control procedures shall comply with requirements to ensure the

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stated performance of the product is reliably achieved.

3.3 Installation

Installation, in accordance with the installation documentation, shall be undertaken by appropriately trained personnel.

Health and safety considerations shall be addressed within the installation documentation.

4. APPROVAL

The DERAGGER+ has been audited and has successfully met all of the requirements stated within this assessment schedule.

5. REFERENCES

1. Sewers for Adoption 7th Edition, Water UK/WRc plc, 2012.
2. Sewers for Scotland 3rd Edition, 2015.

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Assessment Schedule for the DERAGGER PRO Pumping Station Controller as manufactured by Clearwater Controls Ltd

Independent certification of your Products & services

1. SCOPE

This schedule specifies the functional characteristics for the DERAGGER PRO produced by Clearwater Controls Ltd. for control of wastewater pumping stations.

It is applicable for the use of the product in conjunction with the Clearwater DERAGGER II or the Clearwater Power Monitor.

2. PRODUCT DESCRIPTION

2.1 Introduction

The DERAGGER PRO is a pumping station controller. It can only be used in conjunction with one or more Clearwater Controls DERAGGER+ or Power Monitor.

The system allows the control of wastewater pumps via DERAGGER+ units, a level sensor and optional flow meter. The system provides:

- wet well level control;
- monitoring of flow and motor efficiency when used in conjunction with a flow meter;
- pump motor diagnostics;
- logging.

The system provides the following connectivity:

- A colour touch-screen user interface.
- Two USB interfaces for connection of additional data storage and for manual backup and restore operations. An RS232 Modbus interface for connection to a telemetry controller.
- An RS485 internal network interface for connection to up to sixteen DERAGGER+ or Power Monitor units.
- 2 x RS485 Modbus interface for connection to a telemetry/SCADA controller.
- An Ethernet interfaces for connection to a telemetry controller, SCADA, or to the internet. An internal Ethernet interface for connection to up to sixteen DERAGGER+ or Power Monitor units.

2.2 Relevant Standards

The following standards of relevant content were identified for pumping station controllers:

- Sewers for Adoption 7th Edition(1)
- Sewers for Scotland 3rd Edition(2)

2.3 Approval History

This is the first WRc Approved™ certification for the DERAGGER PRO.

3. REQUIREMENTS AND TESTING

3.1 Type Testing

When used in conjunction with appropriate DERAGGER+ or Power Monitor units, the DERAGGER PRO shall demonstrate compliance with the pumping station controller functional requirements of Sewers for Adoption 7th Edition contained in clauses:

- F3.3.8 (Abnormal operation of the electrical assembly).
- F3.3.9 (Telemetry signals).
- F3.3.10 (Ultrasonic level controllers), when used with an appropriate sensor head.

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The DERAGGER PRO shall demonstrate compliance with the following clauses of Sewers for Scotland:

- Part 3 – Mechanical & Electrical Specification for Pumping Stations: Section 3C (Electrical specification).

3.2 Manufacture

To ensure the quality and performance of the DERAGGER PRO, the manufacturing process shall include appropriate systems for the:

- Specification of materials and components.
- Verification that materials and components received are to specification.
- Handling and storage of all materials and components.
- Fabrication and quality of workmanship.
- Testing of units prior to dispatch.

The manufacture of the DERAGGER PRO and related Quality Control procedures shall comply with requirements to ensure the stated performance of the product is reliably achieved.

3.3 Installation

When installed in accordance with the installation documentation(3), the installation shall be practicable and suitable for conditions that could reasonably be expected on site and shall be reasonably expected to perform as described.

4. APPROVAL

The DERAGGER PRO system has been audited and has successfully met all of the requirements stated within this assessment schedule.

Signed:

5. REFERENCES

1. Sewers for Adoption 7th Edition, Water UK/WRc plc, 2012.
2. Sewers for Scotland 3rd Edition: 2015.
3. Clearwater Control DERAGGER PRO Installation Instructions (Catalogue link below).

   http://clearwatercontrols.co.uk/clearwater-downloads/

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