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Irrigation techniques — Remote monitoring and control for irrigation —

Part 1: General considerations

Techniques d'irrigation — Surveillance et commande à distance pour l'irrigation —

Partie 1: Considérations générales

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ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Email: copyright@iso.org
Website: www.iso.org

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Foreword

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This document was prepared by Technical Committee ISO/TC 23, *Tractors and machinery for agriculture and forestry*, Subcommittee SC 18, *Irrigation and drainage equipment and systems*.

A list of all parts in the ISO 21622 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Introduction

In this document, any telecontrol system intended to control and/or monitor processes related to irrigation, is referred to as remote monitoring and control system (RMCS). Different control devices can be used to monitor and control an irrigation entity. The different requirements and constrains of the different irrigation entities will determine and guide the choice of the type of device required in each case.

Monitoring and control of an irrigation entity may be based on different controller technologies (or a combination thereof) and monitoring data provided by third parties available in the cloud. Some of these technologies can be used for other purposes unrelated to irrigation. This is the case of programmable logic controllers (PLCs), remote terminal units (RTUs), industrial personal computers (IPCs) or single board computers (SBCs), among others. They are normally non-specialized hardware solutions subject to international standards, such as IEC 61131, using standard programming languages and communication protocols and supporting other kinds of automation logic. As non-specialized hardware solutions, the majority are subject to other standards required in industry.

On the other hand, there are controllers that have been developed specifically for irrigation purposes, with similar capabilities to non-specialized technologies, but which have not been subject to a standardization process until now.

Irrigation techniques — Remote monitoring and control for irrigation —

Part 1:
General considerations

1 Scope

This document defines the general considerations applicable to any type of remote monitoring and control system (RMCS) used in irrigation.

The document also includes some specific clauses on RMCS that fully or partially incorporate controllers developed for irrigation. These controllers are specific hardware developments designed for specific irrigation monitoring and/or control requirements.

An indication is given at the beginning of each section that clearly defines when it is specifically intended for controllers developed for irrigation.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 21622-3, *Irrigation techniques — Remote monitoring and control for irrigation — Part 3: Interoperability*

IEC 60529, *Degrees of protection provided by enclosures*

IEC 60870-1-1, *Telecontrol equipment and systems — Part 1: General considerations — Section One: General principles*

IEC 60870-2-1, *Telecontrol equipment and systems — Part 1: Operating conditions — Section 1: Power supply and electromagnetic compatibility*

IEC 60870-2-2, *Telecontrol equipment and systems — Part 2: Operating conditions — Section 2: Environmental conditions (climatic, mechanical and othernon electrical influences)*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at https://www.electropedia.org/

3.1
accumulator
reusable electrical battery which can be charged, discharged with a load, and recharged multiple times