INTERNATIONAL STANDARD

ISO 20112-1

First edition
2018-06

Tractors and machinery for agriculture and forestry — Camera interface between tractor and implement —

Part 1: Analogue camera interface

Tracteurs et matériels agricoles et forestiers — Interface de caméra entre tracteur et l'équipement —

Partie 1: Interface de caméra analogique

Reference number
ISO 20112-1:2018(E)

© ISO 2018



COPYRIGHT PROTECTED DOCUMENT

© ISO 2018

All rights reserved. Unless otherwise specified, or required in the context of its implementation, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Fax: +41 22 749 09 47
Email: copyright@iso.org
Website: www.iso.org

Published in Switzerland

Contents

Page

Foreword ..... **iv**

1 Scope **1**

2 Normative references **1**

3 Terms and definitions **1**

4 Technical description of the camera interface **2**

4.1 Physical link configuration 2

4.2 Connector plug (male) for installation inside tractor cabin 3

4.3 Connector receptacle (female) to be fitted to the video cable of the camera 5

4.4 Pin assignment 5

4.5 Electrical requirements 6

Bibliography **7**

© ISO 2018 – All rights reserved

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see the following URL: www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 23, *Tractors and machinery for agriculture and forestry*, Subcommittee SC 19, *Agricultural electronics*.

A list of all parts in the ISO 20112 series can be found on the ISO website.

© ISO 2018 – All rights reserved

Tractors and machinery for agriculture and forestry — Camera interface between tractor and implement —

Part 1: Analogue camera interface

1 Scope

This document defines the physical link between analogue cameras mounted on implements and operator terminals or monitors installed in tractor cabins. The interface supports up to two analogue video streams and provides electrical power to the cameras. It is designed to be installed inside the cab of agricultural equipment.

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 15003, *Agricultural engineering — Electrical and electronic equipment — Testing resistance to environmental conditions*

Recommendation *ITU-R BT.470-7, Conventional analogue television systems*[1)]

3 Terms and definitions

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

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

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

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

3.1
camera control unit
CCU
device used to combine images from multiple cameras into a single video stream

3.2
CAN Bus
controller area network bus

3.3
discrete I/O's
electrical input and output lines

3.4
ISOBUS network
set of devices which are coupled together by and use the ISO 11783 network

1) Available from: http://www.itu.int/dms_pubrec/itu-r/rec/bt/R-REC-BT.470-7-200502-I!!PDF-E.pdf

© ISO 2018 – All rights reserved