INTERNATIONAL STANDARD

ISO 11786

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Agricultural tractors and machinery — Tractor-mounted sensor interface — Specifications

Tracteurs et matériels agricoles — Interface des capteurs montés sur le tracteur — Spécifications

Reference number
ISO 11786:1995(E)

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.

Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

International Standard ISO 11786 was prepared by Technical Committee ISO/TC 23, *Tractors and machinery for agriculture and forestry*, Subcommittee SC 19, *Agricultural electronics*.

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Agricultural tractors and machinery — Tractor-mounted sensor interface — Specifications

1 Scope

This International Standard specifies an electrical connector and its pin layout for mounting on an agricultural tractor with a nominal 12-volt battery supply for the purpose of providing an interface between tractor-mounted sensors and equipment requiring signals from those sensors. The connector also provides access to a low-current power source, to provide power primarily to instrumentation.

This International Standard therefore provides a short-term solution to data communication between a restricted set of tractor-mounted sensors and other equipment such as monitors, actuators and control systems on agricultural tractors and attached machinery, in anticipation of the availability of a standardized digital data bus system.

It allows limited data communication facilities for lower specification tractors not fitted with a digital data bus system.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

DIN 405-1:1975, *Knuckle thread: profiles, basic sizes, general plan.*

DIN 405-2:1981, *Knuckle thread: deviations and tolerances.*

3 Definitions

For the purposes of this International Standard, the following definitions apply.

3.1 ground speed signal: Actual forward speed of the tractor.

3.2 theoretical ground speed signal: Product of tractor drive wheel rotational speed and the rolling wheel circumference.

NOTE 1 This is the true ground speed where there is no wheel slip. The rolling circumference is defined in ISO 11795, *Agricultural tractor drive wheel tyres — Methods of measuring tyre rolling circumference.*

3.3 linkage position signal: Position of the tractor three-point linkage in the vertical plane between its lowest and highest points.

3.4 in-work/out-of-work signal: Binary status signal indicating that the three-point linkage is situated below (in-work) or above (out-of-work) an adjustable switching threshold.

3.5 CMOS: Complementary Metal-Oxide Semiconductor.

4 Connector

4.1 Dimensions

The connector shall have the dimensions shown in figure 1.

4.2 Pin allocation

A seven-pin female bulkhead connector shall be mounted on the tractor with the following pin allocation:

— Pin 1: true ground speed

— Pin 2: theoretical ground speed

— Pin 3: rear PTO rotational speed

— Pin 4: rear three-point implement in-work/out-of-work

— Pin 5: rear three-point linkage position

— Pin 6: power supply

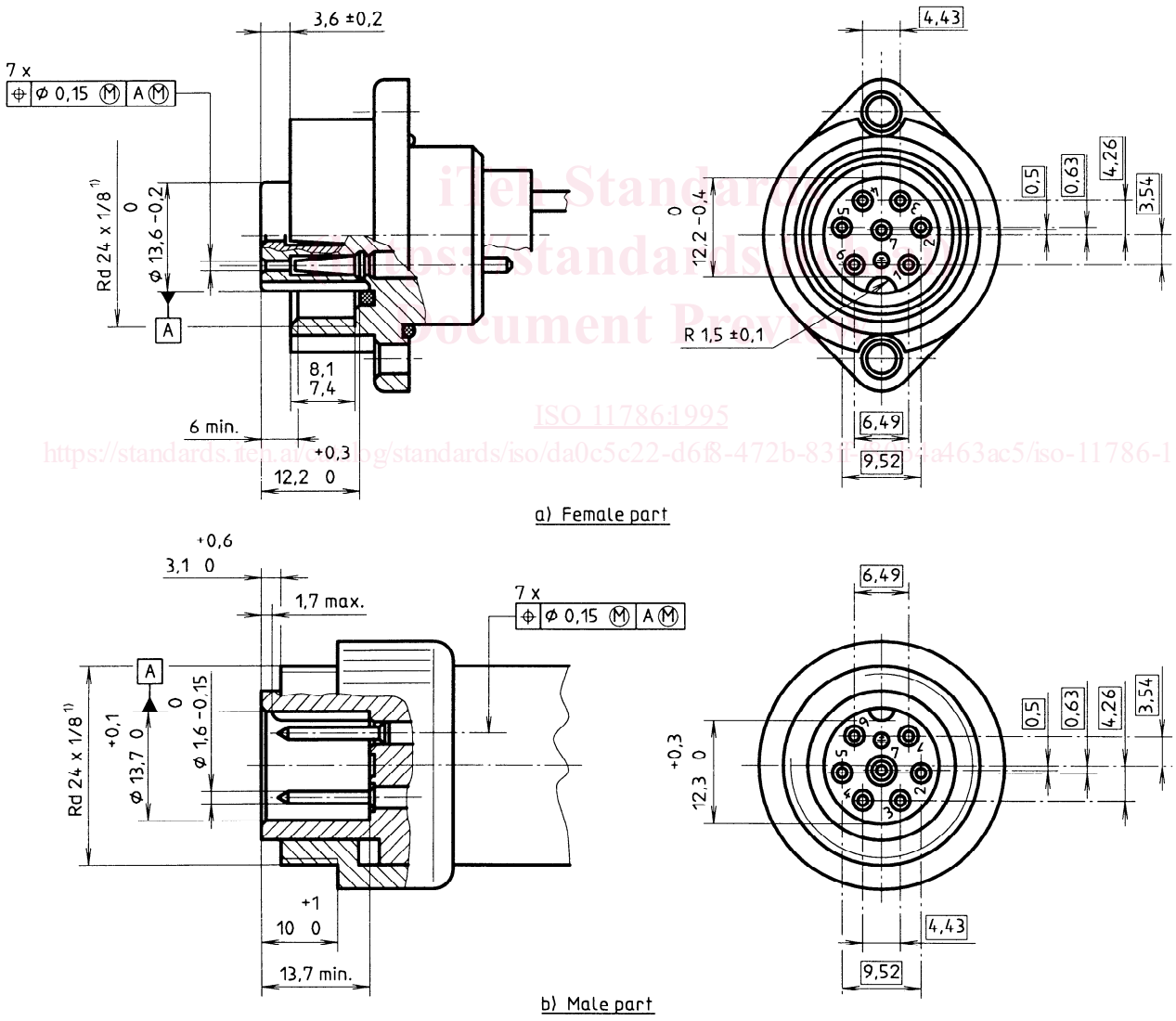
— Pin 7: common ground

Tractor designers may, at their discretion, connect any or none of the pins to the appropriate sources. The pin allocation shall not be changed.

4.3 Specification of connector

4.3.1 The female bulkhead connector shall contain seven pins in a polarized shell in accordance with figure 1. Pins 6 and 7 shall have a minimum current-carrying capacity of 5A.

Dimensions in millimetres



1) In accordance with DIN 405-1 and DIN 405-2.

Figure 1 — Seven-pin connector dimensions