SLOVENSKI STANDARD
oSIST prEN 14116:2026

01-junij-2026

Cisterne za prevoz nevarnega blaga - Digitalni vmesnik za napravo za prepoznavanje proizvoda za tekoča goriva

Tanks for transport of dangerous goods - Digital interface for product recognition devices for liquid fuels

Tanks für die Beförderung gefährlicher Güter - Digitale Schnittstelle für das Produkterkennungssystem für flüssige Kraft□ und Brennstoffe

Citernes destinées au transport de matières dangereuses - Interface numérique du dispositif de reconnaissance de produits pétroliers

Ta slovenski standard je istoveten z: **prEN 14116**

ICS:

13.300	Varstvo pred nevarnimi izdelki	Protection against dangerous goods
23.020.20	Posode in vsebniki, montirani na vozila	Vessels and containers mounted on vehicles
35.240.60	Uporabniške rešitve IT v prometu	IT applications in transport

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

DRAFT
prEN 14116

April 2026

ICS 13.300

Will supersede EN 14116:2012+A2:2018

English Version

Tanks for transport of dangerous goods - Digital interface for product recognition devices for liquid fuels

Citernes destinées au transport de matières dangereuses - Interface numérique du dispositif de reconnaissance de produits pétroliers

Tanks für die Beförderung gefährlicher Güter - Digitale Schnittstelle für das Produkterkennungssystem für flüssige Kraft- und Brennstoffe

This draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee CEN/TC 296.

If this draft becomes a European Standard, CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

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Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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European foreword

This document (prEN 14116:2026) has been prepared by Technical Committee CEN/TC 296 “Tanks for the transport of dangerous goods”, the secretariat of which is held by AFNOR.

This document is currently submitted to the CEN Enquiry.

This document will supersede EN 14116:2012+A2:2018.

prEN 14116:2026 includes the following significant technical changes with respect to EN 14116:2012+A2:2018:

— Figure 9 in 5.9 has been revised to accurately reflect the description in the text.

Introduction

Product recognition, the subject of this document, is the digital interface that allows product data and/or other information to be transferred between transport tanks and other installations.

1 Scope

This document covers the digital interface at the product loading and/or discharge coupling which is used for the transfer of product related information and specifies the performance requirements, critical safety aspects and tests to provide compatibility of devices.

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.

EN 13616:2004, *Overfill prevention devices for static tanks for liquid petroleum fuels*

EN IEC 60079-0, *Explosive atmospheres — Part 0: Equipment — General requirements (IEC 60079-0)*

EN 60079-11, *Explosive atmospheres — Part 11: Equipment protection by intrinsic safety "i" (IEC 60079-11)*

ISO 2859-1, *Sampling procedures for inspection by attributes — Part 1: Sampling schemes indexed by acceptance quality limit (AQL) for lot-by-lot inspection*

ISO 8601, *Data elements and interchange formats — Information interchange — Representation of dates and times*

3 Terms, definitions and abbreviations

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 Terms and definitions

3.1.1
message
defined data set

3.1.2
telegram
frame that contains at least one standardised message

3.1.3
maximum input voltage
U_i
according to EN 60079-11

3.1.4
maximum output voltage
U_0
according to EN 60079-11

3.1.5
maximum input current
I_i
according to EN 60079-11

3.1.6
maximum output current
I_0
according to EN 60079-11

3.1.7
maximum input power
P_i
according to EN 60079-11

3.1.8
maximum output power
P_0
according to EN 60079-11

3.1.9
maximum internal capacitance
C_i
according to EN 60079-11

3.1.10
maximum internal inductance
L_i
according to EN 60079-11

3.1.11
Multiple Product Identification Device
MultiPID
electronic device emulating at least one PID, extended by the ability of bi-directional communication

3.2 Abbreviations

ASCII	American Standard Code for Information Interchange
CPDP	Comité Professionnel Du Pétrole
ESD	Electro-Static Discharge
LSB	Least Significant Bit
MSB	Most Significant Bit
PID	Product Identification Device
PRD	Product Recognition Device
RON	Research Octane Number

4 Functions

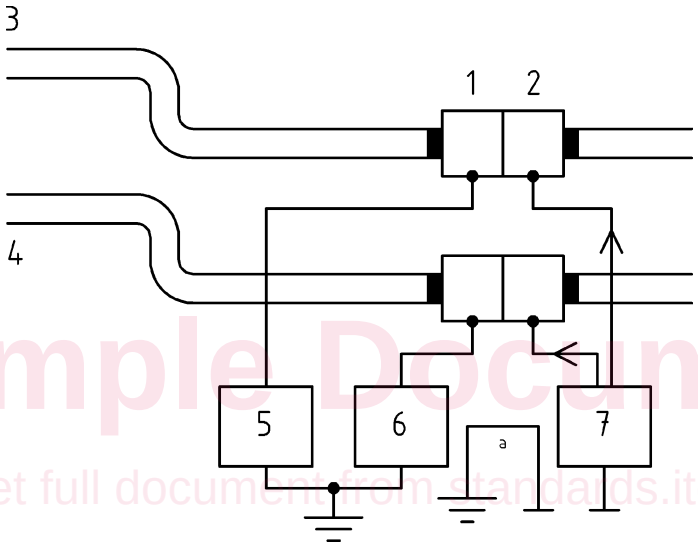
Whenever a physical connection according to Figure 1 or Figure 2 is made, the digital interface enables the transfer of product recognition data to the transport tank. The purpose of this digital interface is to provide the data for the following types of applications:

a) automatic product identification for each compartment or tank;

b) cross over prevention;

c) overfill prevention (optional).

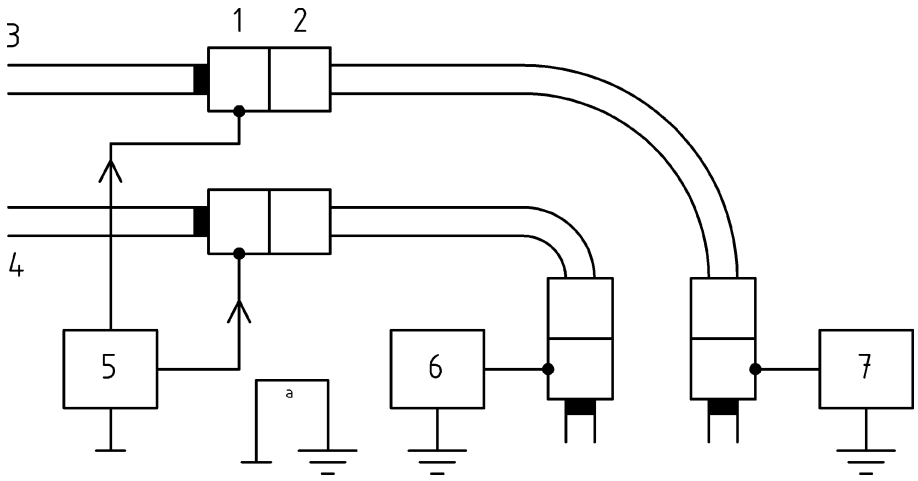
Bi-directionality may add the ability of communication between the stationary parts and the tank vehicle, e.g. the transfer of data of measured quantities in both directions.



Key

1 pipework of loading arm with insulated coupling
2 pipework of transport tank with insulated coupling
3 vapour line
4 product line
5 PID, vapour
6 PID, product
7 PRD
[a] required, if only one connection is established

Figure 1 — Loading



Key

1 pipework of transport tank with insulated coupling
2 conductive hoses [b] and pipework of stationary tank with insulated couplings
3 vapour line
4 product line
5 PRD
6 PID, product
7 PID, vapour
[a] required, if only one connection is established
[b] if the discharge hoses are not conductive then the conductivity of these hoses shall be achieved by other means

Figure 2 — Unloading

PRD supplies an intrinsically safe circuit.

5 Design characteristics

5.1 General

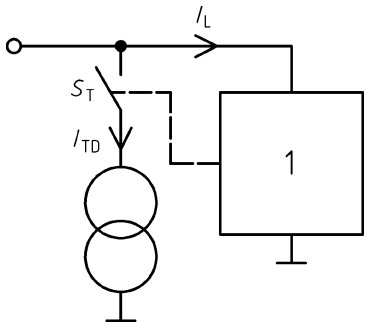
The PRD shall be located on the transport tank. The PID shall be connected in series to a current loop with the PRD.

The PRD reads the PID by powering the PID through the hose or loading arm. The PID then sends its data by modulating the supply current, which is sensed by the PRD; see Figure 3.

The PID sends its data, using messages, which are numbered from 1 to 255.

The PID always transmits “message #1”. By implementing more messages, it is possible to program the PID with other types of information; see 6.6.

Since the PID modulates the supply current, PIDs shall not be connected in parallel.



Key

Components:

1 electronic circuit

S_T modulating switch

I_L supply current without modulation

I_{TD} supply current amplitude

Figure 3 — Basic circuit diagram of PID

5.2 Temperature range

Unless otherwise specified, the operating temperature range shall be −20 °C to +50 °C.

Where the product recognition device is subjected to temperatures outside the specified temperature range, all applicable temperature values shall be extended. All other requirements shall remain unchanged.

5.3 Materials of construction

The manufacturer shall provide with the equipment a full material specification for those parts, which may come into contact with the substances according to Clause 1.

5.4 PRD

The PRD shall provide an intrinsically safe power supply with the values according to Table 1 to the PID.

Table 1 — DC electrical characteristics of PRD

Parameter	Unit	Min	Nom	Max	Ex-values [a]
Open-circuit voltage	V	11	12	15	U_0 = 15
Short-circuit current	mA	-	-	300	I_0 = 300
Output power	W	-	-	1,1	P_0 = 1,1
[a] Maximum value to ensure compliance with EN 60079-11.					

Explosive protection shall be at least Ex ia IIA according to EN IEC 60079-0 and EN 60079-11.