

## SLOVENSKI STANDARD SIST EN IEC 63345:2023

01-december-2023

### Sistemi energijske učinkovitosti - Preprost zunanji prikazovalnik za uporabnika

Energy Efficiency Systems - Simple External Consumer Display

Energie-Effizienz-Systeme - Einfache externe Verbraucheranzeige

Systèmes pour l'efficacité énergétique - Affichage simple et externe du client

Ta slovenski standard je istoveten z: EN IEC 63345:2023

ICS:

27.015 ds.iteh.a	Energijska učinkovitost. 46886 Ohranjanje energije na splošno	Energy efficiency. Energy 55/sist-en-iec-63345-20 conservation in general	
35.240.67	Uporabniške rešitve IT v gradbeništvu	IT applications in building and construction industry	
97.120	Avtomatske krmilne naprave	Automatic controls for	

en

household use

za dom

**SIST EN IEC 63345:2023** 

# iTeh Standards (https://standards.iteh.ai) Document Preview

SIST EN IEC 63345:2023

## EUROPEAN STANDARD

### **EN IEC 63345**

# NORME EUROPÉENNE

### **EUROPÄISCHE NORM**

October 2023

ICS 27.015; 29.020

Supersedes EN 50491-11:2015; EN 50491-11:2015/A1:2020

### **English Version**

# Energy efficiency systems - Simple external consumer display (IEC 63345:2023)

Systèmes pour l'efficacité énergétique - Affichage simple et externe du client (IEC 63345:2023)

Energie-Effizienz-Systeme - Einfache externe Verbraucheranzeige (IEC 63345:2023)

This European Standard was approved by CENELEC on 2023-10-25. CENELEC 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.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CENELEC member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye and the United Kingdom.

#### SIST EN IEC 63345:2023

https://standards.iteh.ai/catalog/standards/sist/36b4b88c-d60a-4237-88f4-6b2b9f335255/sist-en-iec-63345-202



European Committee for Electrotechnical Standardization Comité Européen de Normalisation Electrotechnique Europäisches Komitee für Elektrotechnische Normung

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

### EN IEC 63345:2023 (E)

### **European foreword**

The text of document 23K/87/FDIS, future edition 1 of IEC 63345, prepared by SC 23K "Electrical Energy Efficiency products" of IEC/TC 23 "Electrical accessories" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 63345:2023.

The following dates are fixed:

- latest date by which the document has to be implemented at national (dop) 2024-07-25 level by publication of an identical national standard or by endorsement
- latest date by which the national standards conflicting with the (dow) 2026-10-25 document have to be withdrawn

This document supersedes EN 50491-11:2015 and all of its amendments and corrigenda (if any).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CENELEC shall not be held responsible for identifying any or all such patent rights.

Any feedback and questions on this document should be directed to the users' national committee. A complete listing of these bodies can be found on the CENELEC website.

### **Endorsement notice**

The text of the International Standard IEC 63345:2023 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following notes have to be added for the standard indicated:

IEC 62056 (series) NOTE Approved as EN 62056 (series)

IEC 62056-5-3:2017 NOTE Approved as EN 62056-5-3:2017 (not modified)

IEC 62056-6-1:2017 NOTE Approved as EN 62056-6-1:2017 (not modified)

IEC 62056-6-2:2017 NOTE Approved as EN IEC 62056-6-2:2018 (not modified)

IEC 62746 (series) NOTE Approved as EN IEC 62746 (series)<sup>1</sup>

-

<sup>&</sup>lt;sup>1</sup> To be published.

EN IEC 63345:2023 (E)

# Annex ZA (normative)

# Normative references to international publications with their corresponding European publications

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.

NOTE 1 Where an International Publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

NOTE 2 Up-to-date information on the latest versions of the European Standards listed in this annex is available here: www.cencenelec.eu.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	EN/HD	<u>Year</u>
ISO 4217	-	Codes for the representation of currencies	S -	-
ISO/IEC 8859-1	-	Information technology - 8-bit single-byte coded graphic character sets - Part-1: Lat alphabet No. 1		-

iTeh Standards (https://standards.iteh.ai) Document Preview

#### SIST EN IEC 63345:2023

# iTeh Standards (https://standards.iteh.ai) Document Preview

SIST EN IEC 63345:2023



**IEC 63345** 

Edition 1.0 2023-09

# INTERNATIONAL STANDARD

# NORME INTERNATIONALE



**Energy efficiency systems – Simple external consumer display** 

Systèmes pour l'efficacité énergétique - Affichage simple et externe du client

(https://standards.iteh.ai)
Document Preview

SIST EN IEC 63345:2023

https://standards.iteh.ai/catalog/standards/sist/36b4b88c-d60a-4237-88f4-6b2b9f335255/sist-en-iec-63345-2023

INTERNATIONAL ELECTROTECHNICAL COMMISSION

COMMISSION ELECTROTECHNIQUE INTERNATIONALE

ICS 27.015, 29.020 ISBN 978-2-8322-7559-7

Warning! Make sure that you obtained this publication from an authorized distributor.

Attention! Veuillez vous assurer que vous avez obtenu cette publication via un distributeur agréé.

### CONTENTS

		RD		
IN	TRODU	ICTION	7	
1	Scop	e	8	
2	Norm	native references	8	
3	Term	s, definitions and abbreviated terms	8	
	3.1	Terms and definitions	8	
	3.2	Abbreviated terms		
4	-	sification		
5		irements for the data interface		
J	•	General		
	5.1 5.2			
	_	Minimization of data transmission		
	5.3	Data consistency		
6	5.4	Filtering of message types and data points		
6		ormity and testing		
7		ring functional blocks of MDC		
	7.1	MDC Heat Meter (M_HEATM)		
	7.1.1	,		
	7.1.2	•		
	7.1.3			
	7.1.4			
	7.2	MDC Heat cost allocator (M_HCA)		
	7.2.1	Aims and objectives		
	7.2.2	Mooumont Provious		
	7.2.3			
	7.2.4	•		
	7.3	MDC Water meter (M_WATERM)		
	7.3.1			
	7.3.2	•		
	7.3.3			
	7.3.4	•		
	7.4	MDC Generic Meter (M_GENERICM)		
	7.4.1	Aims and objectives		
	7.4.2	•	19	
	7.4.3			
	7.4.4	•		
	7.5	MDC Gas Meter (M_GASM)		
	7.5.1	Aims and objectives		
	7.5.2	'		
	7.5.3			
	7.5.4	Data point overview	21	
	7.6	MDC Electricity Meter (M_ELECM)		
	7.6.1	Aims and objectives		
	7.6.2	•	23	
	7.6.3		23	
	7.6.4	Data point overview		

	7.7.1	Aims and objectives	25	
	7.7.2	Functional specification	25	
	7.7.3	Constraints	25	
	7.7.4	Data point overview	25	
	7.8	MDC Valve (M_VALVEM)	26	
	7.8.1	· — · · ·		
	7.8.2	Functional specification	26	
	7.8.3	·		
	7.8.4	Data point overview	26	
8	Mete	ring data model		
	8.1	General		
	8.2	Boolean value		
	8.3	1-octet unsigned counter value		
	8.4	Datapoint types "2-octet float value"		
	8.5	2-octet unsigned counter value		
	8.6	4-octet signed unsigned counter value		
	8.7	4-octet signed time period		
	8.8	Datapoint Type "MeteringValue"		
	8.8.1			
	8.8.2			
	8.8.3	3 3		
	8.8.4	· ·		
	8.8.5	i lah Standards		
	8.9	DPT Active Energy		
	8.10	DPT for tariff information		
	8.11	DPT Currency		
	8.12	DPTs for price information	35	
	8.13	Format of DPT_DateTime		
	8.13	GIGT FN ITC (22.45.2022		
		2 Remarks to the coding of DPT_DateTime		
	8.15	Datapoint type DPT_Metering_DeviceType  Datapoint type Character Set		
	8.16	Datapoint type DPT_VarString_8859_1		
	8.17			
	8.18	DPT_Gas_Measurement_condition		
	8.19	Datapoint type DPT_Meter_BreakerValve_State  Datapoint type DPT_Meter_Mode		
	8.20			
	8.21	Datapoint type DPT_Power_Threshold_Status		
Λ.		Datapoint type DPT_Battery_Status		
А		(informative) Cross reference mapping this document and COSEM/OBIS		
	A.1	General		
	A.2	Generic data points: MDC Generic Meter (M_GENERICM)		
	A.3	Electricity data points: MDC Electricity Meter (M_ELECM)		
	A.4	MDC heat heatmeter (M_HEATM)		
	A.5	MDC Heat Cost Allocator (M_HCA)		
	A.6	MDC Water Meter (M_WATERM)		
	A.7	MDC Gas Meter (M_GASM)		
	A.8	MDC Valve (M_VALVEM)		
R	ihlioarai	nhv	78	

Figure 1 – Metering system topology from CEN/CLC/ETSI/TR 50572	10
Table 1 – Measurable quantities	11
Table 2 – Data point overview M_HEATM	14
Table 3 – Data Point overview M_HCA	16
Table 4 – Data point overview M_WATERM	18
Table 5 – Data point overview M_GENERICM	20
Table 6 – Data point overview M_GASM	21
Table 7 – Data point overview M_ELECM	23
Table 8 – Data point overview M_BREAKERM	25
Table 9 – Data point overview M_VALVEM	27
Table 10 – Boolean value	28
Table 11 – 1-octet unsigned counter value	28
Table 12 – Datapoint types "2-octet float value"	29
Table 13 – 2-octet unsigned counter value	29
Table 14 – 4-octet signed unsigned counter value	30
Table 15 – 4-octet signed time period	30
Table 16 – Coding general	31
Table 17 – Coding ValInfField	32
Table 18 – Coding status	33
Table 19 – Display format for metering data	34
Table 20 – DPT Active Energy	34
Table 21 – DPT for tariff information	
Table 22 – DPT Currency	35
Table 23 – DPTs for price information	36
Table 24 – Coding of DPT_DateTimehttps://doi.org/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/10.1001/	36
Table 25 – Datapoint type DPT_Metering_Device Type	40
Table 26 – Datapoint type Character Set	41
Table 27 – Datapoint type DPT_VarString_8859_1	42
Table 28 – DPT_Gas_Measurement_Condition	42
Table 29 – Datapoint type DPT_Meter_BreakerValve_State	43
Table 30 – Datapoint type DPT_Meter_Mode	44
Table 31 – Datapoint type DPT_Power_Threshold_Status	44
Table 32 – Datapoint type DPT_Battery_Status	45
Table A.1 – MDC Generic Meter (M_GENERICM)	46
Table A.2 – MDC Electricity Meter (M_ELECM)	49
Table A.3 – MDC Heat Heatmeter (M_HEATM)	56
Table A.4 – MDC Heat Cost Allocator (M_HCA)	62
Table A.5 – MDC Water Meter (M_WATERM)	66
Table A.6 – MDC Gas Meter (M_GASM)	71
Table A.7 – MDC Valve (M VALVEM)	75

### INTERNATIONAL ELECTROTECHNICAL COMMISSION

# ENERGY EFFICIENCY SYSTEMS – SIMPLE EXTERNAL CONSUMER DISPLAY

### **FOREWORD**

- 1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
- 2) The formal decisions or agreements of IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested IEC National Committees.
- 3) IEC Publications have the form of recommendations for international use and are accepted by IEC National Committees in that sense. While all reasonable efforts are made to ensure that the technical content of IEC Publications is accurate, IEC cannot be held responsible for the way in which they are used or for any misinterpretation by any end user.
- 4) In order to promote international uniformity, IEC National Committees undertake to apply IEC Publications transparently to the maximum extent possible in their national and regional publications. Any divergence between any IEC Publication and the corresponding national or regional publication shall be clearly indicated in the latter.
- 5) IEC itself does not provide any attestation of conformity. Independent certification bodies provide conformity assessment services and, in some areas, access to IEC marks of conformity. IEC is not responsible for any services carried out by independent certification bodies.
- 6) All users should ensure that they have the latest edition of this publication.
- 7) No liability shall attach to IEC or its directors, employees, servants or agents including individual experts and members of its technical committees and IEC National Committees for any personal injury, property damage or other damage of any nature whatsoever, whether direct or indirect, or for costs (including legal fees) and expenses arising out of the publication, use of, or reliance upon, this IEC Publication or any other IEC Publications.
- 8) Attention is drawn to the Normative references cited in this publication. Use of the referenced publications is 345-2023 indispensable for the correct application of this publication.
  - 9) Attention is drawn to the possibility that some of the elements of this IEC Publication may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.

IEC 63345 has been prepared by subcommittee 23K: Electrical energy efficiency products, of IEC technical committee 23: Electrical accessories. It is an International Standard.

The text of this International Standard is based on the following documents:

Draft	Report on voting	
23K/87/FDIS	23K/89/RVD	

Full information on the voting for its approval can be found in the report on voting indicated in the above table.

The language used for the development of this International Standard is English.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at <a href="https://www.iec.ch/members\_experts/refdocs">www.iec.ch/members\_experts/refdocs</a>. The main document types developed by IEC are described in greater detail at <a href="https://www.iec.ch/publications">www.iec.ch/publications</a>.

IEC 63345:2023 © IEC 2023

**-6-**

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under webstore.iec.ch in the data related to the specific document. At this date, the document will be

- · reconfirmed,
- · withdrawn,
- · replaced by a revised edition, or
- amended.

IMPORTANT – The "colour inside" logo on the cover page of this document indicates that it contains colours which are considered to be useful for the correct understanding of its contents. Users should therefore print this document using a colour printer.

## iTeh Standards (https://standards.iteh.ai) Document Preview

SIST EN IEC 63345:2023

IEC 63345:2023 © IEC 2023

**-7-**

### INTRODUCTION

The reduction of  ${\rm CO}_2$  emissions is one the most challenging tasks today.

Providing the consumers with more information about their energy usage will allow them to make more informed choices and hence reductions.

Standardizing the communications interfaces between the metering systems and display will allow interoperability between the meter and display.

## iTeh Standards (https://standards.iteh.ai) Document Preview

SIST EN IEC 63345:2023

## ENERGY EFFICIENCY SYSTEMS – SIMPLE EXTERNAL CONSUMER DISPLAY

#### 1 Scope

This document specifies a data model to abstract the metering world towards a simple external consumer display. The data model, as described by means of functional blocks contained in this document, lays down the format of metering data accessible by a simple external consumer display. This data interface would be typically part of the meter communication functions and be accessed by a simple external consumer display via the H1 interface of CEN/CLC/ETSI TR 50572 between the display and the meter communication functions.

The data interface specified in this document may also be accessed by the LNAP or NNAP through the C or M interface, after which the data could be accessed by HBES devices through the H2 and H3 interfaces.

In other words, in this way the same data model can be used both on the H1 as well as the H2 and H3 interfaces.

This document does not specify the communication mechanisms used on the data interface, nor the applied data privacy and security mechanisms, nor the ergonomics of the simple external consumer displays, where national regulations can apply.

The document does also not specify the communication protocol used between the meters and the meter communication functions. However, it takes into account existing standards such as the EN 13757 series (in particular EN 13757-3:2018 and its Annex H) and the IEC 62056 series for the definition of the data model.

### 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/IEC 8859-1, Information technology – 8-bit single-byte coded graphic character sets – Part 1: Latin alphabet No. 1

ISO 4217, Codes for the representation of currencies

### 3 Terms, definitions and abbreviated terms

#### 3.1 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:

- IEC Electropedia: available at https://www.electropedia.org/
- ISO Online browsing platform: available at https://www.iso.org/obp