SLOVENSKI STANDARD
SIST ISO 7858-1:2001

01-november-2001

Merjenje pretoka vode v zaprtih vodih - Kombinirani merilniki za hladno pitno vodo - 1. del: Specifikacije

Measurement of water flow in closed conduits -- Combination meters for cold potable water -- Part 1: Specifications

Mesurage de débit d'eau dans les conduites fermées -- Compteurs combinés d'eau potable froide -- Partie 1: Spécifications

Ta slovenski standard je istoveten z: **ISO 7858-1:1998**

ICS:

91.140.60 Sistemi za oskrbo z vodo Water supply systems

SIST ISO 7858-1:2001 **en**

INTERNATIONAL STANDARD

ISO 7858-1

Second edition
1998-07-15

Measurement of water flow in closed conduits — Combination meters for cold potable water —

Part 1:
Specifications

Mesurage de débit d'eau dans les conduites fermées — Compteurs combinés d'eau potable froide —

Partie 1: Spécifications

Reference number
ISO 7858-1:1998(E)

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International Organization for Standardization
Case postale 56 • CH-1211 Genève 20 • Switzerland
Internet iso@iso.ch

Printed in Switzerland

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 7858-1 was prepared by Technical Committee ISO/TC 30, *Measurement of fluid flow in closed conduits*, Subcommittee SC 7, *Volume flowrate methods.*

This second edition cancels and replaces the first edition (ISO 7858-1:1985), which has been technically revised.

ISO 7858 consists of the following parts, under the general title *Measurement of water flow in closed conduits — Combination meters for cold potable water:*

— *Part 1: Specifications*

— *Part 2: Installation requirements*

— *Part 3: Test methods*

Measurement of water flow in closed conduits — Combination meters for cold potable water —

Part 1:
Specifications

1 Scope

This part of ISO 7858 defines the characteristics specific to combination meters as described in clause 4 for the measurement of flow of cold potable water in closed conduits.

2 Normative reference

The following standard contains provisions which, through reference in this text, constitute provisions of this part of ISO 7858. At the time of the publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this part of ISO 7858 are encouraged to investigate the possibility of applying the most recent edition of the standard indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 4064-1:1993, *Measurement of water flow in closed conduits — Meters for cold potable water — Part 1: Specifications.*

3 Definitions

For the purposes of this part of ISO 7858, the following definitions apply.

NOTE In this part of ISO 7858, the capital letter Q signifies the flowrate of the combination meter, the lower case letter q signifies the flowrate of one of the component meters, completed by the subscript 1 or 2 according to whether it refers to the large or small meter or measuring element.

3.1
overload flowrate
Q_s
<combination meter> overload flowrate q_{s1} of the large meter or large measuring element

See ISO 4064-1.

3.2
minimum flowrate
Q_{min}
<combination meter> minimum flowrate q_{min2} of the small meter or of the small measuring element

3.3
transitional flowrate
Q_t
flowrate at which the maximum permissible error of the combination meter changes in value

NOTE The value Q_t characterizes the total flowrate of the three elements comprising the combination meter as defined in clause 4. This value is equal to:

— either the transitional flowrate q_{t2} of the small meter or measuring element;

— or the transitional flowrate q_{t1} of the large meter or measuring element.

3.4
permanent flowrate
Q_p
<combination meter> permanent flowrate q_{p1} of the large meter or measuring element

3.5
designation *N*
***N*-value**
<combination meter> *N*-value of the large meter or measuring element

3.6
flowrate range
<combination meter> range limited by the overload flowrate q_{s1} of the large meter or measuring element and by the minimum flowrate q_{min2} of the small meter or measuring element

3.7
pressure loss
system pressure loss caused by the presence of the complete combination meter

4 Versions of combination meter

4.1 General

This part of ISO 7858 is only to be applied in conjunction with ISO 4064-1, the provisions of which shall be complied with. In particular, the large and small meters shall be complete meters conforming to ISO 4064-1, except for modifications of the meter casings necessary for the interconnection of the component meters forming the combination meter. These casing modifications shall have no metrological effect upon the component meters.

4.2 Classic version

The combination meter in the classic version comprises three components:

— one large meter conforming to ISO 4064-1;

— one small meter conforming to ISO 4064-1;

— one changeover device functioning automatically without using any source of energy other than that of the fluid being measured.

Depending on the flowrate of the water passing through the combination meters, this changeover device directs the water:

— either through the small meter at low flowrates, and then through the large meter only at higher flowrates;

— or through the small meter at low flowrates, and then through both meters at higher flowrates.

The indicating device of each of the component meters displays a part of the total quantity; the reading of the total volume that has flowed through the combination meter requires the addition of the readings of each of the two meters.

In any case, the relevant requirements of ISO 4064-1 shall be complied with.

4.3 Integrated version

The combination meter in the integrated version comprises :

— an assembly integrating whole or part of the functions of the components under 4.2, within the same envelope;

— the function of the changeover device remaining identical to that of 4.2;

— the reading of the total volume that has flowed through the combination meter can be obtained from:

1) either two independent totalizers as described in 4.2;

2) or one totalizer which adds up the values from both components.

In any case, for the functions of the integrated components described in this part of ISO 7858, the requirements of ISO 4064-1 are fully applicable.

5 Technical characteristics

The technical characteristics are those of ISO 4064-1 with the following modifications and additions.

5.1 Dimensions (see figure 1)

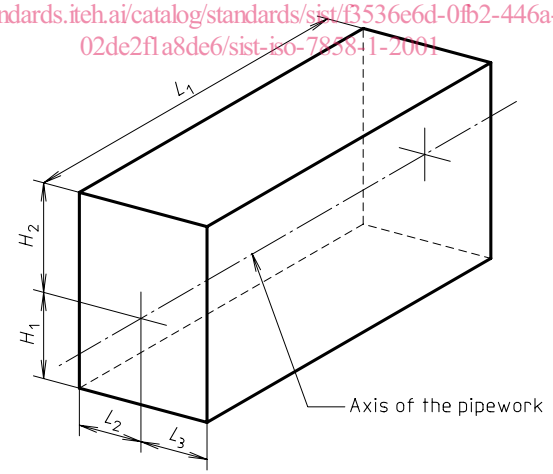

Figure 1

5.1.1 Length, L_1

The overall length of a combination meter may be a fixed dimension, in the same way as simple meters, or may be adjustable by means of a sliding coupling. In this case, the minimum possible adjustment of the meter overall length shall be ± 15 mm relative to the nominal value of L_1 defined in table 1.

5.1.2 Breadths L_2 and L_3

However the various components of the combination meter are arranged, the values of L_2 and L_3 given in table 1 shall not be exceeded.