



International
Standard

ISO/IEEE
11073-10421

**Health informatics — Device
interoperability —**

Part 10421:

**Personal health device
communication — Device
specialization — Peak expiratory
flow monitor (peak flow)**

*Informatique de santé — Interopérabilité des dispositifs — Partie
10421: Communication entre dispositifs de santé personnels —
Spécialisation des dispositifs — Moniteur de surveillance du
débit expiratoire de pointe (débit de pointe)*

Second edition
2024-08

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This second edition cancels and replaces the first edition (ISO/IEEE 11073-10421:2012), which has been technically revised.

The main changes are as follows:

- added support for Base-Offset-Time;
- defined new standard configuration 0x0835;
- updated normative references, to refer to ISO/IEEE 11703-20601;
- updated version of this device specialization;

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- updated the association details based on the new version;
- updated the wording in 6.3 regarding the Observational;
- updated the examples in 8.4.2 and Annex E to indicate the support of BaseOffsetTime;
- updated the qualifier in MDS and other objects to recommend BaseOffsetTime; also updated the description of the qualifiers in 6.5;
- added some text to 6.12 to further elaborate the DIM extensibility rule;
- corrected the use condition of GET MDS at E.4.1;
- updated the text in 8.5.2 regarding attribute-id-list, in order to be compliant with 20601-V4;
- added subclause 3.4 – Compliance with other standards;
- removed the year in the bibliography to represent the latest version;
- extended Table 1 to specify qualifier details for all possible configurations;
- made the IEEE std 11073-10101 as normative reference;
- updated the wording at 1.3 and 4.1 regarding the precedence of nomenclature between 10101, 20601, 104xx, and this standard;
- updated the usage of nomenclature-version. Tied it with the corresponding protocol-version.

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Health Informatics—Device Interoperability

Part 10421: Personal Health Device Communication—Device Specialization—Peak Expiratory Flow Monitor (Peak Flow)

Developed by the

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of the
IEEE Engineering in Medicine and Biology Society

Approved 30 March 2023

IEEE SA Standards Board

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Abstract: Within the context of the ISO/IEEE 11073 family of standards for device communication, a normative definition of communication is established in this standard between personal telehealth peak expiratory flow monitor devices and compute engines (e.g., cell phones, personal computers, personal health appliances, and set-top boxes) in a manner that enables plug-and-play interoperability. Appropriate portions of existing standards are leveraged, including ISO/IEEE 11073 terminology, information models, application profile standards, and transport standards. The use of specific term codes, formats, and behaviors is specified in telehealth environments restricting optionality in base frameworks in favor of interoperability. A common core of communication functionality is defined for personal telehealth peak expiratory flow monitor devices.

Keywords: forced expiratory volume, IEEE 11073-10421™, medical device communication, peak expiratory flow, peak expiratory flow monitor, peak flow, personal health devices

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Health Informatics—Device Interoperability—Part 10421: Personal Health Device Communication
Device Specialization—Peak Expiratory Flow Monitor (Peak Flow)

Introduction

This introduction is not part of IEEE Std 11073-10421™-2023, Health Informatics—Device Interoperability—Part 10421: Personal Health Device Communication—Device Specialization—Peak Expiratory Flow Monitor (Peak Flow).

The object classes and attributes in this standard are identified by nomenclature codes. Each code consists of a reference identifier (RefID) string and an integer code value. By using a consistent nomenclature, interoperability is enhanced as all implementations maintain the same semantic meaning for the numeric codes. This standard leverages the existing nomenclature codes in IEEE Std 11073-10101™. Between this standard, IEEE Std 11073-10101, ISO/IEEE 11073-20601, and other IEEE Std 11073-104zz, all required nomenclature codes for implementation are documented. New codes may be defined in newer versions/revisions of each of these documents. In the case of a conflict, where one term code has been assigned to two separate semantic concepts with different RefIDs, in general, the oldest definition in actual use should take precedence. The same policy applies when one RefID has two different code values assigned in different specifications. The resolution of such conflicts will be determined through joint action by the responsible working groups and other stakeholders, and any corrective action will be published as corrigenda.

NOTE—In this standard, IEEE 11073-104zz is used to refer to the collection of device specialization standards that utilize ISO/IEEE 11073-20601, where zz can be any number from 01 to 99, inclusive.⁶

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⁶ Notes in text, tables, and figures are given for information only and do not contain requirements needed to implement the standard.