

DIN EN ISO 11073-10441:2016-11 (E)

Health informatics - Personal health device communication - Part 10441: Device specialization - Cardiovascular fitness and activity monitor (ISO/IEEE 11073-10441:2015); English version FprEN ISO 11073-10441:2016

Contents	Page
1. Overview	1
1.1 Scope	1
1.2 Purpose	2
1.3 Context	2
2. Normative references.....	2
3. Definitions, acronyms, and abbreviations	3
3.1 Definitions	3
3.2 Acronyms and abbreviations	4
4. Introduction to ISO/IEEE 11073 personal health devices	4
4.1 General	4
4.2 Introduction to ISO/IEEE 11073-20601 modeling constructs	4
4.3 Compliance with other standards.....	5
5. Cardiovascular fitness and activity monitor device concepts and modalities.....	5
5.1 General concepts.....	6
5.2 3D Acceleration (RT-SA).....	7
5.3 3D Angular acceleration (RT-SA).....	7
5.4 Activity intensity (numeric).....	7
5.5 Activity time (enumeration)	7
5.6 Age (numeric).....	7
5.7 Altitude (numeric)	8
5.8 Altitude gain (numeric).....	8
5.9 Altitude loss (numeric)	8
5.10 Ascent time and distance	8
5.11 Body height (numeric).....	9
5.12 Body weight (numeric).....	9
5.13 Breathing rate (numeric).....	9
5.14 Cadence (numeric).....	9
5.15 Calories ingested (numeric).....	9
5.16 Carbohydrate calories ingested (numeric)	9
5.17 Descent time and distance (numeric).....	9
5.18 Distance (numeric)	9
5.19 Energy expended (numeric).....	10
5.20 Estimated weight loss (numeric).....	10
5.21 Heart rate (numeric).....	10
5.22 Incline (numeric)	10
5.23 Latitude (numeric)	10
5.24 Longitude (numeric)	10
5.25 Maximum recommended heart rate (numeric).....	10
5.26 Proportional integral mode (PIM) (numeric).....	10
5.27 Power (numeric)	11
5.28 Program identifier (enumeration)	11
5.29 Resistance (numeric)	11
5.30 Root mean square (RMS) (numeric).....	11
5.31 Session (enumeration)	11
5.32 Session-subsession-start-indicator (enumeration).....	11

5.33 Slopes (numeric).....	12
5.34 Speed (numeric).....	12
5.35 Stride length (numeric).....	12
5.36 Subsession (enumeration).....	12
5.37 Sustained physical activity threshold (numeric).....	12
5.38 Time above threshold (TAT) (numeric).....	12
5.39 TAT-threshold (numeric).....	13
6. Cardiovascular fitness and activity monitor domain information model.....	13
6.1 Overview	13
6.2 Class extensions.....	13
6.3 Object instance diagram	13
6.4 Types of configuration.....	14
6.5 Profiles.....	15
6.6 Medical device system object.....	15
6.7 Numeric objects.....	19
6.8 Real-time sample array objects.....	47
6.9 Enumeration objects	53
6.10 PM-store objects	58
6.11 Scanner objects.....	63
6.12 Class extension objects.....	66
6.13 Cardiovascular fitness and activity monitor information model extensibility rules	67
7. Cardiovascular fitness and activity monitor service model	67
7.1 General	67
7.2 Object access services.....	67
7.3 Object access event report services	70
8. Cardiovascular fitness and activity monitor communication model.....	70
8.1 Overview	70
8.2 Communications characteristics	71
8.3 Association procedure	71
8.4 Configuring procedure.....	71
8.5 Operating procedure	71
8.6 Time synchronization	72
9. Test associations.....	72
10. Conformance	72
10.1 Applicability	72
10.2 Conformance specification	72
10.3 Levels of conformance	73
10.4 Implementation conformance statements	73
11. Profile: Step counter	77
11.1 General concepts.....	77
11.2 Step counter domain information model.....	77
12. Profile: Activity monitor	80
12.1 General concepts.....	80
12.2 Physical activity monitor domain information model.....	80
Annex A (informative) Bibliography	85
Annex B (normative) Any additional ASN.1 definitions	86
Annex C (normative) Allocation of identifiers.....	87