TECHNICAL REPORT

CEN/TR 15500-2

RAPPORT TECHNIQUE

TECHNISCHER BERICHT

August 2016

ICS 97.120; 91.140.30

English Version

Energy Performance of Buildings - Control for heating, ventilating and air-conditioning applications - Part 2: Accompanying TR prEN 15500-1:2015 - Modules M3-5,M4-5,M5-5

Begleitender TR zu EN 15500

This Technical Report was approved by CEN on 11 April 2016. It has been drawn up by the Technical Committee CEN/TC 247.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.



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

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

Cont	tents	Page
-	oean foreword	
Introd	duction	5
1	Scope	7
2	Normative references	7
3	Terms and definitions	8
4	Symbols and abbreviations	8
4.1	Symbols	
4.2	Abbreviations	
5	Functional and acceptance test	8
5.1	Objective of the Test methodology	
5.2	Testing procedures — Test principle	8
5.3	Test parameters	9
5.3.1	Temperature parameters	9
5.3.2	Time parameters	10
5.3.3	Product configuration	10
6	Definition of Control Accuracy (CA), Control Variation (CV) and Control to Setpoi	
	Deviation (CSD)	
6.1	General	11
6.2	Definition of the Control Accuracy for heating (CA _H)	12
6.3	Definition of the Control Accuracy for cooling (CAC)	13
6.4	Definition of CV and CSD	13
7	Test facility description — General layout	13
8	Sensor side interface	15
8.1	General	15
8.2	Temperature interface for the controller	15
8.2.1	Option 1 - Sensor resistance simulator	
8.2.2	Option 2 - Climatic box	
8.3	Pressure interface for the controller (VAV application)	
8.3.1	General	
8.3.2	Pressure generator	
8.3.3	Voltage signal	
8.4	Actuator side interface	
8.4.1	General	
8.4.2	Interface for real valve/drive combinations	
8.4.3	Interface for other outputs	
8.5	Interface between real and simulated environment	
8.5.1	General	
8.5.2	Link from simulated to real environment	
8.5.3	Link from real to simulated environment	
8.6	Simulated environment	
8.7	Data acquisition system	
8.7.1	Function	
8.7.2	Specifications	
	1	

CEN/TR 15500-2:2016 (E)

	x A (informative) Data	
A.1	Objective	
A.2	Applications	
A.3	Building and zone types	
A.3.1		
A.3.2	7 •	
A.4	Default time test parameters	
Biblio	ography	24
	ography	
	0,	
	\sim	
	O,	
	2	
	· A	
	<i>\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\</i>	

European foreword

This document (CEN/TR 15500-2:2016) has been prepared by Technical Committee CEN/TC 247 "Building Automation, Controls and Building Management", the secretariat of which is held by SNV.

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

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association.

This document is currently divided into the following parts:

- Control for heating, ventilating and air-conditioning applications Part 1: Electronic individual zone control equipment Modules M3-5,M4-5,M5-5 [currently at Enquiry stage];
- air 5-5 [th — Control for heating, ventilating and air-conditioning applications — Part 2: Accompanying prEN 15500-1:2016 Modules M3-5,M4-5,M5-5 [the present Technical Report; currently at Voting stage].

Introduction

The CENSE project, the discussions between CEN and the Concerted action highlighted the high page count of the entire package due to a lot of "textbook" information. This resulted in flooding and confusing the normative text.

A huge amount of informative contents shall indeed be recorded and available for users to properly understand, apply and nationally adapt the EPB standards.

The detailed technical rules CEN/TS 16629 Detailed Technical Rules ask for a clear separation between normative and informative contents:

- to avoid flooding and confusing the actual normative part with informative content;
- to reduce the page count of the actual standard;
- to facilitate understanding of the package.

Therefore each EPB standard shall be accompanied by an informative technical report, like this one, where all informative contents is collected.

nis Th. Table 1 shows the relative position of this TR within the EN EPB set of standards.

Table 1 — Position of this TR within the EPBD set of standards

Over- arching	Building (as such)	Technical Building System									
Descriptions	Descriptions	Descriptions	Heating	Cooling	Ventilation	Humidification	Dehumidification	Domestic Hot waters	Lighting	Building automation and control	PV, wind,
M1	M2		М3	M4	M5	М6	M7	M8	М9	M10	M11
General	General	General									
Common terms and definitions; symbols, units and subscripts	Building Energy Needs	Needs									
Application	(Free) Indoor Conditions without Systems	Maximum Load and Power	0	<i></i> (
Ways to Express Energy Performance	Ways to Express Energy Performance	Ways to Express Energy Performance									
Building Functions and Building Boundaries	Heat Transfer by Transmission	Emission and control	Х	Х	х	20					
Building Occupancy and Operating Conditions	Heat Transfer by Infiltration and Ventilation	Distribution and control					0				
Aggregation of Energy Services and Energy Carriers	Internal Heat Gains	Storage and control							6		
Building Partitioning	Solar Heat Gains	Generation and control									
Calculated Energy Performance	Building Dynamics (thermal mass)	Load dispatching and operating conditions									S

Over- arching	Building (as such)	Technical Building System									
Descriptions	Descriptions	Descriptions	Heating	Cooling	Ventilation	Humidification	Dehumidification	Domestic Hot waters	Lighting	Building automation and control	PV, wind,
M1	M2		М3	M4	M5	M6	M7	M8	М9	M10	M11
Measured Energy Performance	Measured Energy Performance	Measured Energy Performance									
Inspection	Inspection	Inspection									
Ways to Express Indoor Comfort	7	BMS									
External Environment Conditions		9									
Economic Calculation											

1 Scope

This Technical Report refers to prEN 15500-1, *Control for heating, ventilating and air-conditioning applications* — *Part 1: Electronic individual zone control equipment* — *Modules M3-5,M4-5,M5-5*.

It contains information to support the correct understanding, use and national adaption of prEN 15500-1:2016.

This Technical Report does not contain any normative provision.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

prEN 15500-1:2016, Control for heating, ventilating and air-conditioning applications — Part 1: Electronic individual zone control equipment — Modules M3-5,M4-5,M5-5

EN ISO 7345:1995, Thermal insulation - Physical quantities and definitions (ISO 7345:1987)

prEN ISO 52000-1:2016, Energy performance of buildings — Overarching EPB assessment — Part 1: General framework and procedures (ISO/DIS 52000-1:2015)