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NPS/003/031 – Technical Specification for Room Thermostats, Humidistats and Time Delay Switches

1. Purpose

The purpose of this document is to detail the specific technical requirements of Northern Powergrid (the Company) in relation to a range of room thermostats, humidistats and time lag switch for use on the company’s network.

This document supersedes the following documents, all copies of which should be destroyed.

Reference	Version	Date	Title
NPS/003/031	3.0	May 2018	Technical Specification for Room Thermostats, Humidistats and Time Delay Switches

2. Scope

This document applies to Northern Powergrid requirements for the supply of: -

- Room thermostats
- Humidistats
- Time lag switches

The units are required for use within the company’s primary substation control rooms, switch rooms and similar chambers.

The units are either to be fixed to brick wall or surface mounted on a conduit wall box (metal or Plastic).

Provided they meet the criteria detailed in sections 3.1 – 3.3, consideration will be given to: separate units; either a ‘dual’ thermostat/humidistat or thermostat/time lag switch; or a fully integrated unit.

The following appendices for part of this technical specification:

- Appendix 1 – Addendum to Supplier Requirements
- Appendix 2 – Self Certification Conformance Declaration
- Appendix 3 – Technical Information Check List

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3. Requirements

All products shall conform to Electromagnetic Compatibility Regulations 2016 - Directive 2014/30/EU and BS EN 60730 Part 1 – General requirements in addition to specific standards as stated.

3.1. Thermostat

Conforming to BS EN 60730 Part 2 – 9 (Particular requirements for temperature sensing controls), the thermostat shall be manufactured from a flame retardant ABS material or similar and is required to be set at a fixed maximum temperature of 15°C. This shall be achieved by either the device having an internal 'fixed' setting or by some form of tamperproof facility.

The unit shall have single pole switching action that shall 'close' when the temperature falls below the set value, thus allowing the heating system to energise and be suitable for switching a minimum 16A resistive Load at 230volts AC (+10%/-6%) at 50Hz. The terminals shall be sized to accept up to 2 x single or multi stranded conductors in the range 2.5mm² – 4mm²

Internal thermistor or other semiconductor device shall be used for temperature sensing. The temperature accuracy shall be +/- 0.5°C.

The unit shall be maintenance free.

3.2. Humidistat

Conforming to BS EN 60730 Part 2 – 13 (Particular requirements for humidity sensing controls), the unit is required to be at a fixed 65% (+/-1%) relative humidity (RH). This shall be achieved by either the device having an internal 'fixed' setting or by some form of tamperproof facility.

The unit shall be manufactured from a flame retardant ABS material and suitable for switching a minimum 16A resistive Load at 230volts AC (+10%/-6%) at 50Hz.

The unit shall have single pole switching action that 'closes' when the humidity exceeds the set value, thus allowing the heating system to energise. The terminals shall be sized to accept up to 2 x single or multi stranded cables in the range from 2.5mm² – 4mm²

The unit shall be maintenance free and all sensing measuring/devices shall be incorporated within the unit.

3.3. Time Lag Switch

Time lag / time delay switches can be either electronic or mechanical and are required to override the thermostat/humidistat and energise the heating system within the building and then automatically revert back to the thermostat/humidistat control once the time lag has elapsed.

The time delay shall be achieved by either touch control or mechanical means and duration of between 1 hour minimum and 2 hours maximum.

The unit shall be manufactured from a flame retardant ABS material and suitable for switching 16A resistive load at 230volts AC (+10%/-6%) at 50Hz.

The terminals shall be sized to accept up to 2 x single or multi stranded conductors in the range 2.5mm² – 4mm²

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4. References

4.1. External Documentation

The products described within this specification shall comply with all current versions of the relevant International Standards, British Standard Specifications and all relevant Energy Networks Association Technical Specifications (ENATS) current at the time of supply.

In this respect the following documents are particularly relevant.

Reference	Title
BS EN 60730 -1 (2016)	Automatic electrical controls. Part 1 – General Requirements
BS EN 60730 -2-9 (2010)	Automatic electrical controls for household and similar use. Particular requirements for temperature sensing controls
BS EN 60730 -2-13 (2008)	Automatic electrical controls for household and similar use. Particular requirements for humidity sensing controls
Directive 2014/30/EU	Electromagnetic Compatibility Regulations 2016

4.2. Internal Documentation

Reference	Title
None	

4.3. Amendments from Previous Version

Reference	Title
Whole Document	Doc approved by email Paul Black 08/11/2023 Doc republished to grid and externally - LB 04/03/2024

5. Definitions

Reference	Title
RH	Relative humidity

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6. Authority for Issue

6.1. CDS Assurance

I sign to confirm that I have completed and checked this document and I am satisfied with its content and submit it for approval and authorisation.

		Date
Liz Beat	Governance Administrator	04/03/2024

6.2. Author

I sign to confirm that I have completed and checked this document and I am satisfied with its content and submit it for approval and authorisation.

Review Period - This document should be reviewed within the following time period.

Standard CDS review of 3 years?	Non Standard Review Period & Reason	
No	Period: 5 Years	Reason: Update will be dictated by contract renewal date or any significant changes in the specification or documents referenced
Should this document be displayed on the Northern Powergrid external website?		Yes
		Date
Alan MacDonald	Policy & Standards Engineer	02/05/2018

6.3. Technical Assurance

I sign to confirm that I am satisfied with all aspects of the content and preparation of this document and submit it for approval and authorisation.

		Date
Steve Wilkinson	Specification & Design Manager	23/05/2018

6.4. Authorisation

Authorisation is granted for publication of this document.

		Date
Paul Black	Head of System Engineering	08/11/2023

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Appendix 1 – Logistical Requirements

To enable the Company to store the product(s) in accordance with the manufacturer’s recommendations the Tenderer should provide details of the recommended storage environment with respect to each tendered product.

Details should be provided where relevant in respect to the minimum and maximum exposure levels, frequency of exposure and duration of exposure of the packaged item with respect to;

- | | |
|-----------------------|-------------------------|
| * Ambient temperature | * Atmospheric corrosion |
| * Humidity | * Impact |
| * Water | * Vibration |
| * Dust | * Solar radiation |

The Tenderer shall ensure that each item is suitably packaged and protection to maintain the product and packaging as “fit for service” prior to installation taking account of the potential for an outdoor storage environment. All packaging shall be sufficiently durable giving regard to the function, reasonable use and contents of the packaging. Where product packages tendered are made up of sub packages all the sub packages shall unless varied by this specification, be supplied securely packaged together. Where items are provided in bagged/boxed form the material from which the bags are manufactured shall be capable of sustaining the package weight and resisting puncture by the materials within. Tenderer shall submit at the time of tendering the details of the proposed packaging (i.e. materials composition and structure) to be used for each product. Where the Tenderer is unable to provide packaging suitable for outdoor storage then this should be stated at the time of tender.

Palletised goods shall be supplied on standard 1200mm x 1000mm pallets.

Clearly legible, easily identifiable, durable and unambiguous labelling shall be applied to each individual and where relevant multiple package of like products. Where products packages tendered are made up of sub packages each sub packages shall be marked. As a minimum requirement the following shall be included;

- Manufacturer’s trademark or name
- Supplier’s trademark or name
- Description of item
- Date of packaging and/or batch number
- Northern Powergrid product code
- Weight
- Serial Number

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Appendix 2 – SELF CERTIFICATION CONFORMANCE DECLARATION

Any thermostat, humidistat and time lag switch shall comply with the latest issues of the relevant national and international standards. This technical specification is intended to amplify and/or clarify requirements relating to these Standards.

This self-declaration sheet identifies the clauses of the aforementioned standards relevant to the product for use on the Northern Powergrid distribution network. The manufacturer shall declare conformance or otherwise, clause by clause, using the following levels of conformance declaration codes.

Conformance declaration codes

N/A = Clause is not applicable/ appropriate to the product

Cs1 = The product **conforms fully** with the requirements of this clause

Cs2 = The product **conforms partially** with the requirements of this clause

Cs3 = The product **does not conform** to the requirements of this clause

Cs4 = The product **does not currently conform** to the requirements of this clause, but the manufacturer proposes to modify and test the product in order to conform.

Manufacturer:

Product Reference:

Related Product type(s):

Name and position/role (block capitals):

Signature & Date:

Instructions for Completion

- **When Cs1 code is entered:**
 - (i) **State the reference of test reports, etc. that support this declaration AND**
 - (ii) **A summary of the compliance.**
- **When any other code is entered: state the reference of the test report(s), etc. that support this declaration AND a summary of the reason for non-conformance.**
- **Prefix each remark with the relevant 'BS EN' 'IEC' or 'ENATS' as appropriate to indicate which specification the comment is made against.**

NOTE: A separate self-declaration shall be completed for each item or variant submitted, OR the products can be grouped together and a group declaration made for each group IF every self-declaration states clearly the range of products to which it applies.

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Clause/Sub-clause	Requirements	Conformance Code	Remarks / Comments
3.1			
Thermostat	Conforming to BS EN60730-1 AND 2-9		
Thermostat	Manufactured from ABS material		
Thermostat	Fixed at 15°C		
Thermostat	Switching minimum 16A load		
Thermostat	Terminals suitable for 2.5mm – 4mm conductors		
3.2			
Humidistat	Conforming to BS EN60730-1 AND 2-13		
Humidistat	Manufactured from ABS material		
Humidistat	Fixed at 65% RH		
Humidistat	Switching minimum 16A load		
Humidistat	Terminals suitable for 2.5mm – 4mm conductors		
3.3			
Time Lag Switch	Manufactured from ABS material		
Time Lag Switch	Time delay Maximum 2 Hours		
Time Lag Switch	Switching minimum 16A load		
Time Lag Switch	Terminals suitable for 2.5mm – 4mm conductors		
Time Lag Switch	Conforms to Directive 2014/30/EU		

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Appendix 3 – Technical Information Checklist

The Following information shall be provided by the supplier for technical review by the company. Additional information shall be provided if required.

Requirements	Provided (Yes / No)
Full product descriptions, drawings and part/reference numbers	
Appendix 2 – Completed self-certification conformance declaration	
Type test evidence (where applicable)	
Routine test Plan (sample)	
Packaging/delivery information	