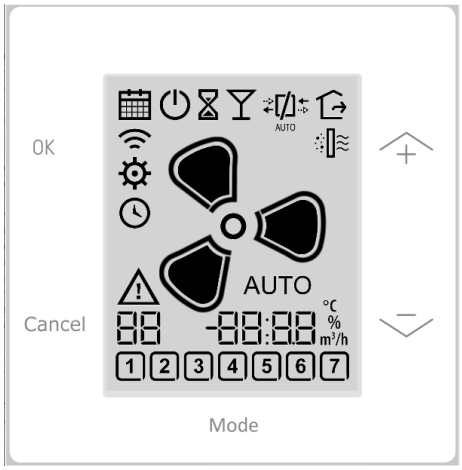
02 Display for VMD – 1 Product Requirements Specification VMI-02xSx



Document Information

Info	Content
Author(s)	Team Alpha
Revision	1
Document Status	Draft
Date	April 17, 2019
Distribution	For Customer
VPM Number	P18015
Keywords	VMI-02MSA22;VMI-02WSJ44;VMI-02WSA66

This document is based on the Product Requirements Specification template, version 2.0 of the ACS Software Development Process.

Approvals

Name	Function	Date	Signature
	Customer		
	Project Manager		

Copyright © 2019 HCCP. All rights reserved.
This document contains proprietary information of HCCP and is protected by copyright and other international laws.
Reproduction or improper use without specific written authorization of HCCP is strictly forbidden.

Revision History

Rev.	Date	Author	Description
1	April 11, 2018 December 13, 2018	Team Alpha Frank Eggink	Initial draft Textual updates

Last PRS number:

Copyright © 2019 HCCP. All rights reserved.

Table of Contents

Copyright © 2019 HCCP. All rights reserved.

1 Introduction

1.1 Purpose

This Product Requirements Specification describes the capabilities and characteristics of the product identified including design constraints, and other factors as necessary. It supplements the Product Vision and Use Case Specification to provide a complete and comprehensive description of the requirements for the product.

1.2 Scope

This Requirements Specification applies to the 02 Display for VMD project.

1.3 Terms, Acronyms and Abbreviations

Below are the terms, acronyms, and abbreviations used within this document.

Term, Acronym, Abbreviation	Definition
MMI	Machine Machine Interface
LCD	Liquid Crystal Display
LED	Light Emitting Diode

1.4 References

Abbreviation	Reference Element	Description

1.5 Requirements Designations

Each requirement in this document is preceded by a requirement designator of the form [PRS_n]. “PRS” refers to “Product Requirements Specification” and “n” is a unique requirement number optionally followed by an “_” and revision number. When a requirement is modified, the revision number must be incremented (starts at 1). The requirement number may include sub-numbers separated by a period (avoids renumbering existing requirements when inserting new requirements).

Some examples of requirement designators are:
PRS _5 (original) requirement number 5.
PRS _6.2_3 third revision of requirement number 6.2
PRS _100.7.4 (original) requirement number 100.7.4

Copyright © 2019 HCCP. All rights reserved.

2 Functional Requirements

This section contains the functional requirements of the product expressed declaratively in natural language style, as opposed to describing functionality as use cases. These requirement statements may supplement requirements that are not readily captured in the use cases, or entirely substitute use cases when use case modeling is not used at all.

Declarative functional requirements declaratively describe a piece of required functionality or behavior.

2.1 User Interface

PRS_?

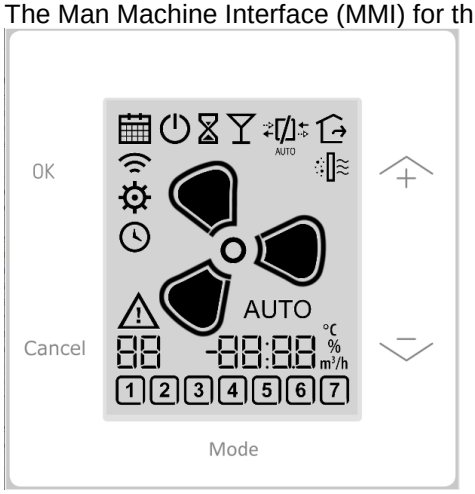
This PRS document describes the functional requirements for the following products:

- VMI-02MSA22;
- VMI-02WSJ44;
- VMI-02WSA66.

Any exception of a requirement for a specific product is written explicitly in the requirement itself.

PRS_?

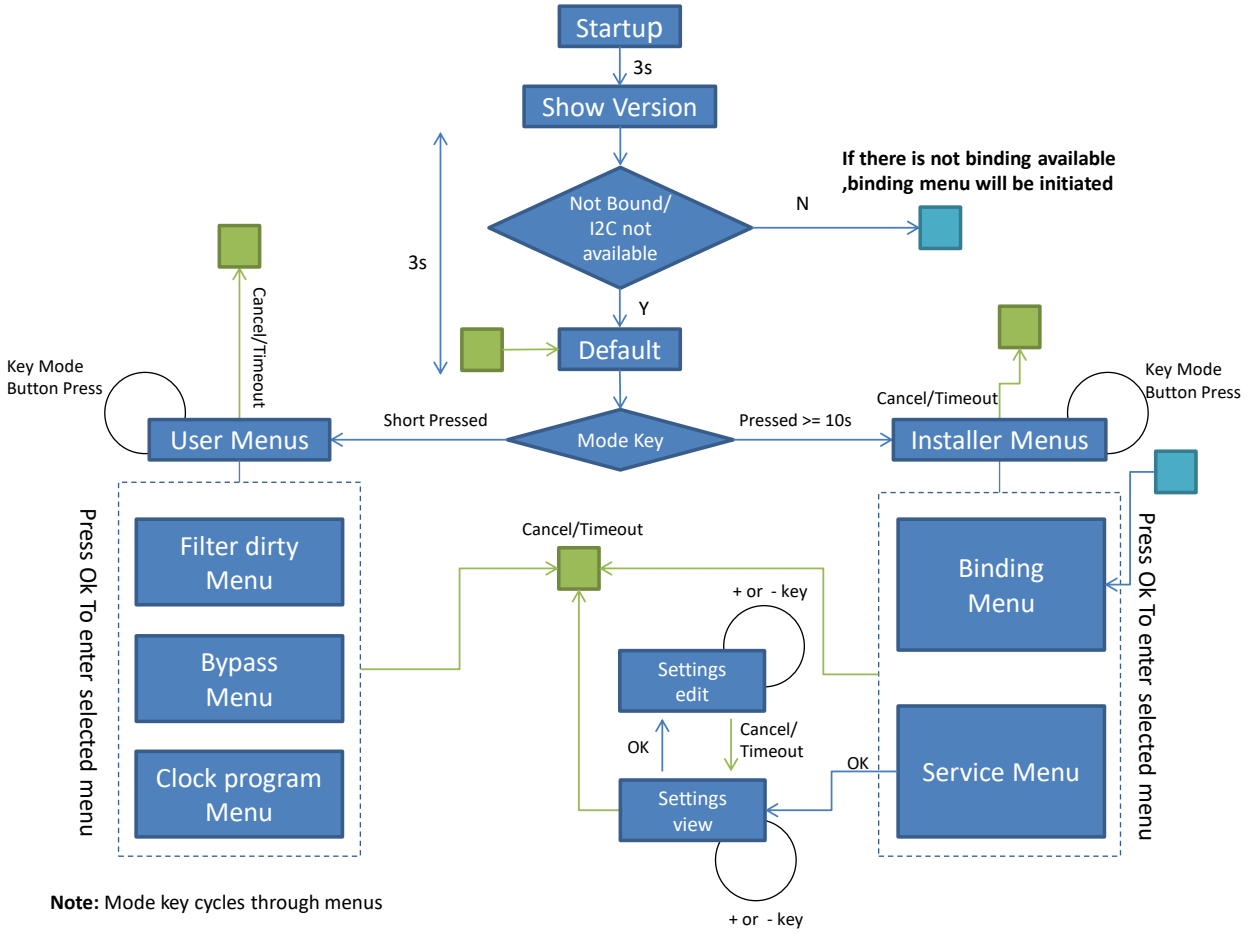
The Man Machine Interface (MMI) for this product has 5 capacitive button(s) and a LCD segment display.



Copyright © 2019 HCCP. All rights reserved.

2.2 User Interface Functions

PRS_?



Note: Mode key cycles through menus

2.2.1 Buttons

PRS_?

The unit has 5 buttons, function of the buttons depend on the selected menu.

PRS_?

The software will perform debouncing to avoid unintentional actions.

PRS_?

The function of a button is activated at the moment that it is operated

2.2.2 Backlight LCD

PRS_?

The unit has LEDs in the backlight of the LCD.

PRS_?

The LCD backlight will switch on when a button is operated and remains on for 60 seconds after the last button operation, the buttons are handled normally.

Note: The above requirement applies for all menus.

Copyright © 2019 HCCP. All rights reserved.

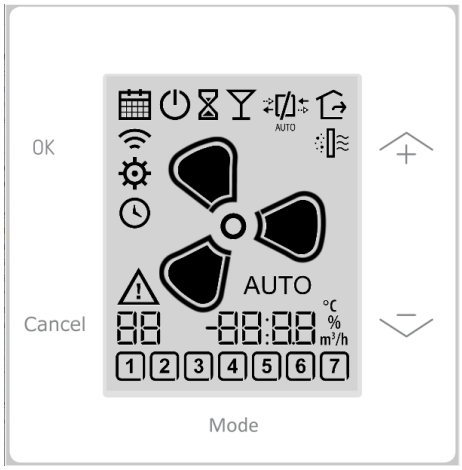
2.2.3 Power-up screen

PRS_?

During power-up and initialization phase of the device all icons and backlight are off.

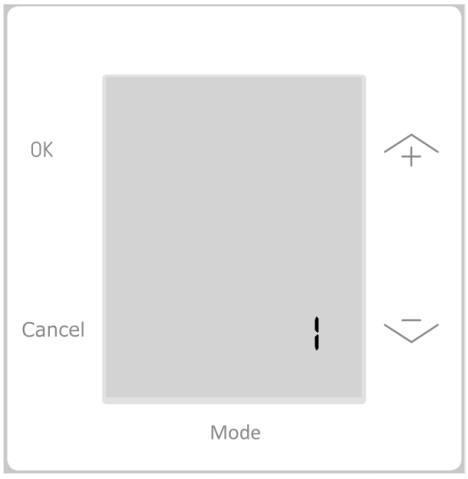
PRS_?

After this initialization phase all icons are turned on for 3 seconds.



PRS_?

The following 3 seconds the software version will be shown on the big 7-segment display.



PRS_?

After showing the software version the default screen is entered.

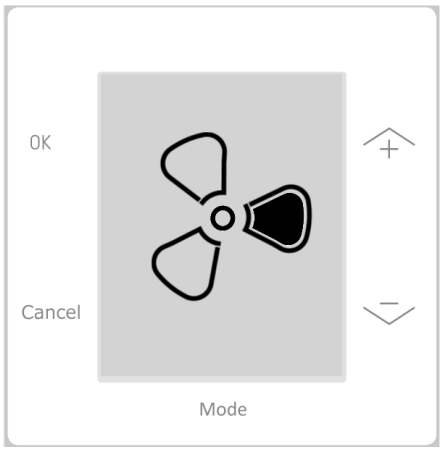
2.2.4 Default screen

PRS_?

The default screen shows the actual fan speed of the appliance

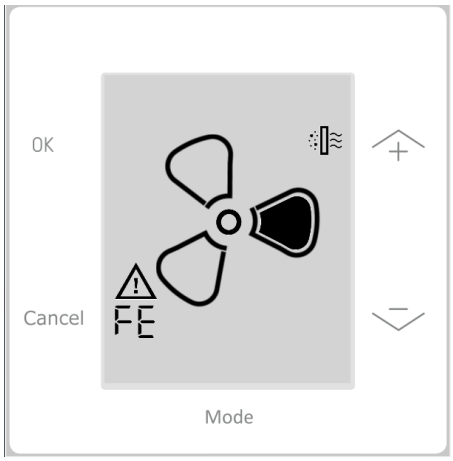
For example: Ventilation exists and speed 1 is selected:

Copyright © 2019 HCCP. All rights reserved.



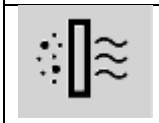
Note: The default screen can also display faults of the ventilation unit.

For example: The picture below shows Filter Dirty and the symbol for a Fault together with Fault Code received by the ventilation unit.



PRS_?

The following icons can be visible.

Icons	Function / When visible
	I2C communication error ? Fan error ?
	Fault Code – Visible when there is fault with the fan. Fault codes are shown in hexadecimal format.
	RF communication error
	Filter in appliance needs to be replaced

PRS_?

When the + or - button is touched shortly the next / previous operating mode is selected.

PRS_?

When the - button is pressed for three second the next operating mode will be absolute minimum for the fan.

Note: If the fan does not support away operation mode, then the mode will go to minimum operating speed of 1.

Copyright © 2019 HCCP. All rights reserved.

PRS_?
The modes that can be selected, by the user, are determined by the capabilities of the appliance.

2.2.5 Screen selection menu

PRS_?
There are two different screen menus, user selection menu and installer selection menu.
PRS_?

Screen menus	Entry	Menus available	Enter a menu	Leave a menu	Layout
Installer	Mode key – press time >= 10s	• Binding (A) • Settings (B)	Press ok	Press cancel or Timeout	Check *Figure 1*
User	Mode key - Short press	• Filter Reset (C) • Bypass (D) • Clock program (E)	Press ok	Press cancel or Timeout	Check *Figure 2*

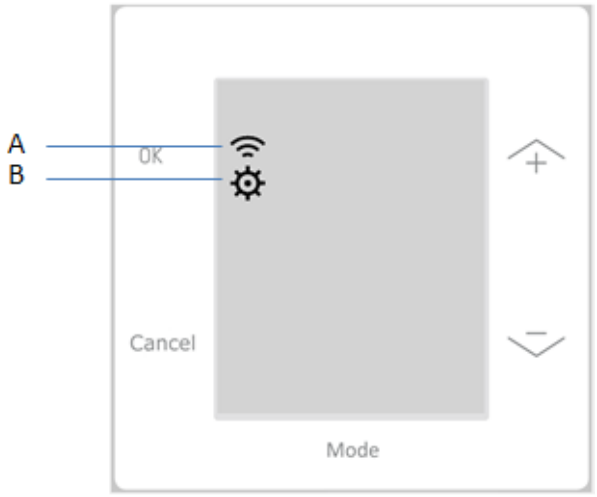


Figure 1 – Installer Select Menus

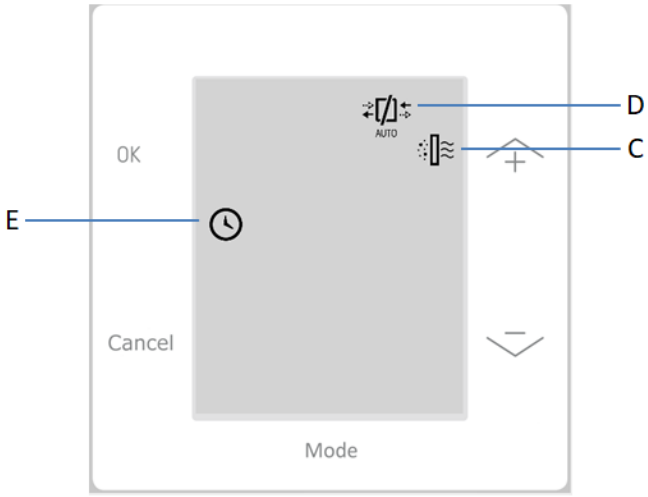


Figure 2 – User Select Menus

PRS_?
Pressing the mode button will cycle through the menu options in the following order:

PRS_?
To enter the selected menu press the OK button

PRS_?
To go back to the default screen press the Cancel button

PRS_?
If no buttons are pressed a timeout occurs and the default screen is entered

2.2.6 Filter reset menu

PRS_?
When the menu is entered a filter reset message is sent to the appliance

Copyright © 2019 HCCP. All rights reserved.

PRS_?
TODO: which screen to show on success

PRS_?
TODO: which screen to show on failure

2.2.7 Bypass menu

PRS_?
TODO: not implemented yet

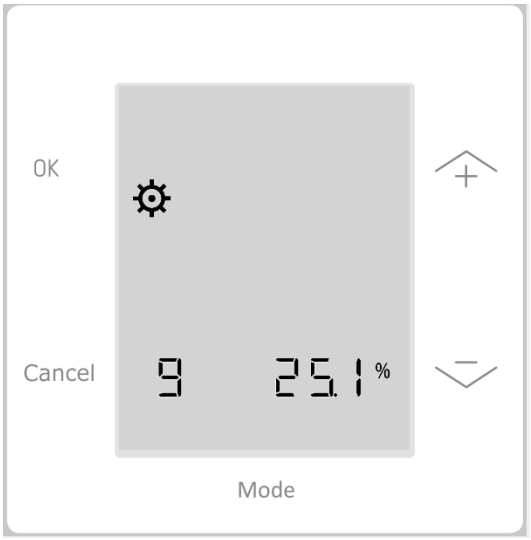
2.2.8 Clock program menu

PRS_?
TODO: not implemented yet

2.2.9 Binding menu

PRS_?
TODO: not implemented yet

2.2.10 Service menu



PRS_?
The 2 digit small display is used to display the selected setting.

PRS_?
The 4 digit big data is used to display the actual value of the setting.

PRS_?
When the settings menu is entered the small 2-digit display is blinking.

PRS_?
The small 2-digit display is showing the selected setting.

Copyright © 2019 HCCP. All rights reserved.

PRS_?
By pressing the + or – buttons the user can step through the available settings.

PRS_?
The available settings are retrieved from the connected appliance.
PRS_?
If the available settings can't be retrieved from the appliance the VMI will use a default table of settings.

PRS_?
The big 4-digit display is showing the value of the selected setting.

PRS_?
If the value of the setting can't be retrieved from the appliance or the selected setting is invalid for the appliance the big 4-digit display will show 4 dashes.

PRS_?
To change the value of a setting press the OK button to enter the editing screen.

PRS_?
When the editing screen is entered the 4-digit big display starts blinking.
PRS_?
When the 4-digit big display is blinking the user can use to + or – buttons to change the value of the setting.

PRS_?
The step count when pressing the + or – buttons is determined by the appliance.

PRS_?
To save a setting and write it to the appliance, press the OK button.

PRS_?
Press cancel to go back to the settings view screen.

2.3 Control Functions

PRS_?
The product doesn't have control functions.

2.4 Communication Interface Functions

2.4.1 RF

PRS_?
The following data is transmitted via RF:

- Binding
- Filter dirty reset
- Product information
- Fan speed
- Settings

Copyright © 2019 HCCP. All rights reserved.

PRS_?
The following data is received via RF:

- Binding answer
- Discovery of RF product
- Settings
- Ventilation Status

2.4.2 I2C

PRS_?
According to the protocol described in the document ”I2C protocol.doc” v11

The following data is transmitted via I2C:

- Filter dirty reset
- Product information
- Fan speed
- Settings

PRS_?
The following data is received via I2C:

- Settings
- Ventilation Status

2.5 Power-Up & Reset Operation

The binding information is stored in NVM.

Copyright © 2019 HCCP. All rights reserved.

2.6 System Status & Fault Handling

PRS_?

Something/nothing is stored in NVM. TBD

2.6.1 Fault Codes & Diagnostics

PRS_?

Fault	Cause	Action

2.6.2 Factory Defaults

PRS_?

The parameters are set to the following default during production

Index	Tag	Name	Min	Max	Step	Default	Unit	Remarks

2.7 System & Product Configuration

PRS_?

Factory setting defaults can be changed with the HCCP Production tool (SW-02P03).

To use this tool you'll need the following device information:

Product type	**0x TBD**
List Version	XX TBD
SW Version	See PCB label*

*On the PCB sticker look for a number which looks like HxxSxx (may have more number on some PCBs). The number after the "S" is the software number

Copyright © 2019 HCCP. All rights reserved.

3 Operational Requirements

3.1 Operation & Shipping Environment TBD

Operating Temperature Range 0 to 40 °C.
Shipping & Storage Temperature Range -20 to 55°C.
Relative Humidity 0 - 90%, non-condensing. TBD CO2 version?
Relative Humidity 0 – 100% TBD

3.2 Power supply TBD 230V version

Mains Power Source 230VAC +10, -15%, 50Hz.
Maximum power consumption 1,3VA, standby 1,1VA
Maximum power consumption 0,5W, standby 0,35W TBD PIR version

3.3 Power supply TBD 24V version

Mains Power Source 24VAC (+10, -15%, 50Hz)
Mains Power Source 24VDC (19VDC to 26.4VDC)
Maximum power consumption 4W, average 1W, standby 450mW.

3.4 RF communication

Communication frequency is 868.3 MHz, with an output power of at least 0 dBm.

3.5 Mechanical Ratings and Tolerances

Housing has an ingress protection of IP30 according to IEC60529
Finally installed (in wall plate), the housing has an ingress protection of IP44

3.6 Styling / Marking Requirements

Any marking demanded by safety standard are made.

Housing parts will be marked with production date and material

Product label on inside of housing back (with required CE info)
PRS_?
Product label, size 65x35mm with the following data:

- End supplier: Customer name / logo TBD
- Safety and CE symbols: double square, bin, CE
- Production code: YYWW
- Hardware and software version: HxxSyy
- Power supply: 230VAC~ 50Hz 4VA T40
- Product description: TBD
- Product code: [OS#]
- Product code Customer: TBD
- Supplier text: made by Honeywell

Example:

Copyright © 2019 HCCP. All rights reserved.

3.7 Standards & Approval Body Requirements

ETSI EN 300 220-1 V3.1.1 (2016-11): Electromagnetic compatibility and Radio spectrum Matters (ERM); Short Range Devices
(SRD); Radio equipment to be used in the 25 MHz to 1000 MHz frequency range with power levels ranging up to 500 mW; Part 1: Technical characteristics and test methods
ETSI-EN 300-220-2 V3.1.1 (2016-11) Harmonized EN covering essential requirements.
ETSI-EN 300-489-3 (2013-08) ElectroMagnetic Compatibility (EMC) standard for radio equipment and services

TBD - RF no primary function
EN61000-6-3: 2007 Emissions
EN61000-6-1: 2007 Immunity

Herewith the product is in conformity with EU directive 2014/53/EU (Radio Equipment) **TBD RF prime function**

Herewith the product is in conformity with: **TBD RF no prime function**

- directive 2014/30/EU (Electromagnetic Compatibility)
- directive 2014/35/EU (low voltage)
- directive 2014/53/EU (Radio Equipment)

3.8 Safety Requirements and Codes

The unit complies with EN60730-1: 2007:
Safety requirements for automatic controls in household and similar use.

3.9 Environmental Requirements

The unit will meet the requirements of the WEEE (2012/19/EU) and ROHS (2011/65/EU) directives.

3.10 Size and Weight

Overall dimensions appr. 100 x 100 X 23 mm TBD
Weight: about 125 gram

3.11 Mounting and Orientation

The unit is intended for wall mounting either on the wall or on a wall-box

3.12 Literature & Packaging

The product is shipped in a blank (white) box that contains:

- Product packet inside foam bag
- Manual
- Screws are not included TBD

Box size: 105X50X105mm

PRS_?
Included manual:
Install sheet (black/white) included max size A4, content provided by customer
Note:

The manual should contain one or more of the following text (language dependent)

Language	Text
Danish	Undertegnede [fabrikantens navn] erklærer herved, at følgende udstyr [udstyrets typebetegnelse] overholder de væsentlige krav og øvrige relevante krav i direktiv 2014/53/EU.

Copyright © 2019 HCCP. All rights reserved.

Language	Text
Dutch	Hierbij verklaart [Naam van de fabrikant] dat het toestel [type van toestel] in overeenstemming is met de essentiële eisen en de andere relevante bepalingen van richtlijn 2014/53/EU. Bij deze verklaart [Naam van de fabrikant] dat deze [naam /type van het apparaat] voldoet aan de essentiële eisen en aan de overige relevante bepalingen van Richtlijn 2014/53/EU.
English	Hereby, [Name of manufacturer], declares that this [type of equipment] is in compliance with the essential requirements and other relevant provisions of Directive 2014/53/EU.
German	Hiermit erklärt [Name des Herstellers], dass sich dieser/diese/dieses [Gerätetyp] in Übereinstimmung mit den grundlegenden Anforderungen und den anderen relevanten Vorschriften der Richtlinie 2014/53/EU befindet. Hiermit erklärt [Name des Herstellers] die Übereinstimmung des Gerätes [Type des Gerätes] mit den grundlegenden Anforderungen und den anderen relevanten Festlegungen der Richtlinie 2014/53/EU.
Finnish	[Valmistaja = manufacturer] vakuuttaa täten että [type of equipment =laitteen tyyppimerkintä] tyyppinen laite on direktiivin 2014/53/EU oleellisten vaatimusten ja sitä koskevien direktiivin muiden ehtojen mukainen.
French	Par la présente [Nom du fabricant] déclare que l'appareil [type d'appareil] est conforme aux exigences essentielles et aux autres dispositions pertinentes de la directive 2014/53/EU. Par la présente, [nom du constructeur] déclare que ce [type d'équipement] est conforme aux exigences essentielles et aux autres dispositions de la directive 2014/53/EU qui lui sont applicables.
Italian	Con la presente (nome del costruttore) dichiara che questo (tipo di apparecchio) è conforme ai requisiti essenziali ed alle altre disposizioni pertinenti stabilite dalla direttiva 2014/53/EU.
Portuguese	[Nome do fabricante] declara que este [tipo de equipamento] está conforme com os requisitos essenciais e outras disposições da Directiva 2014/53/EU.
Spanish	Por medio de la presente (nombre del fabricante) declara que el (clase de equipo) cumple con los requisitos esenciales y cualesquiera otras disposiciones aplicables o exigibles de la Directiva 2014/53/EU.
Swedish	Härmed intygar [företag] att denna [utrustningstyp] står I överensstämmelse med de väsentliga egenskapskrav och övriga relevanta bestämmelser som framgår av direktiv 2014/53/EU.

Translations for other languages might be needed.

PRS_?

On the box there is a packaging label of size 63 x 25 mm with following information:

- End supplier: Customer name / logo TBD
- Product description: TBD
- Product code: [OS#]
- Product code customer: TBD
- EAN code: TBD

Example:

Copyright © 2019 HCCP. All rights reserved.

3.12.1 Bulk Packaging

On the bulk box there is a packaging label of size 63 x 25 mm with following information:

- End supplier: Customer name / logo TBD
- Product description: TBD
- Product code: [OS#]Product code customer: TBD
- EAN code: TBD
- Quantity: 20

Example:

3.13 Field Wiring

The wire diameter of the power supply can 0.25 to 2.5 mm^2 (AWG 24 to AWG 14)

3.14 Serviceability / Field Repair

There are no user serviceable parts in the unit

3.15 Interchangeability

The unit is not interchangeable with other products.

3.16 Packaging and Labeling

This subsection describes the requirements for packaging and labeling of the product.

3.17 Internationalization and Localization

Because of the used RF frequency it's only allowed to use the product in Europe.

Copyright © 2019 HCCP. All rights reserved.