

CERTIFICATE OF COMPLIANCE

Certificate Number 20190523-E504925
Report Reference E504925-20190517
Issue Date 2019-MAY-23

Issued to: ALLTERCO ROBOTICS EOOD
103 Cherni vruch bld.
1407 Sofia BULGARIA

This certificate confirms that representative samples of MANAGEMENT EQUIPMENT, ENERGY
Shelly1, Shelly2.5

Have been investigated by UL in accordance with the Standard(s) indicated on this Certificate.

Standard(s) for Safety: UL 60730-1 - The Standard for Automatic Electrical Controls for Household and Similar Use

CAN/CSA-E60730-1:15 - The Canadian Standard for Automatic Electrical Controls for Household and Similar Use
Amendment 1

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Look for the UL Certification Mark on the product.



Bruce Mahrenholz, Director North American Certification Program

UL LLC

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Dimitar Dimitrov
 ALLTERCO ROBOTICS EOOD
 103 CHERNI VRUH BLD.
 1407 SOFIA BULGARIA

Date: 2019/05/23
 Subscriber: None
 PartySite: 2237052
 File No: E504925
 Project No: 4788791898
 PD No: 19027476
 Type: R
 PO Number: 1101626585

Subject: **Procedure And/Or Report Material**

The following material resulting from the investigation under the above numbers is enclosed.

Issue

<u>Date</u>	<u>Vol</u>	<u>Sec</u>	<u>Pages</u>	<u>Revised Date</u>
2019/05/17	1	1	Cert of Compliance	
2019/05/17	1		Add New Volume	

"Legible images may be viewed online"

MARIUSZ PYRCIK, FIELD SERVICE AREA MANAGER, UL INSPECTION CENTER BULGARIA, UL INTERNATIONAL POLSKA SP Z O O, ALEJA KRAKOWSKA 81, SEKOCIN NOWY, K WARSZAWY, Poland, 05-090., PHONE: 48-509-855-437, FAX: 48-22-336-33-01, EMAIL: mariusz.pyrcik@ul.com

Please file revised pages and illustrations in place of material of like identity. New material should be filed in its proper numerical order.

NOTE: Follow-Up Service Procedure revisions DO NOT include Cover Pages, Test Records and Conclusion Pages. Report revisions DO NOT include Authorization Pages, Indices, Section General Pages and Appendixes.

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MIL File

UL INSPECTION CENTER 106

Follow-Up Service Procedure

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PAGES (in content order)	FUNCTION	HOW TO UPDATE
Authorization Page	Displays the Product Category, the type of Follow-Up Service (Type R=Reexamination / Type L=Label), the File Number and the Volume Number associated with each Applicant's, Manufacturer's and Listee's company name and address.	Replace existing page by matching the UL File Number and Volume Number. Discard the older page (refer to "Issued" or "Revised" date).
Addendum to Authorization Page*	Lists the additional names and addresses of manufacturing locations, when multiple locations exist	Replace existing page by matching the UL File Number and Volume Number. Discard the older page (refer to "Issued" or "Revised" date).
Listing Mark Data (LMD), Classification Mark Data (CMD) or Recognized Component Mark Data (RCMD) Pages* #	Used only for products covered under Type R Service. Displays the correct LMD, CMD, or RCMD Mark, the Control Number for Listed and Classified categories and additional information regarding minimum size, application, procurement, and any other optional markings, in addition to the UL Mark.	Replace existing page by matching the UL File Number and Volume Number. Discard the older page (refer to "Issued" or "Revised" date).
Multiple Listing (ML) Correlation Sheet	Correlates product model numbers between those products made by a Manufacturer for the Basic Applicant and those supplied to another company, the Multiple Listee.	Replace, add or delete page(s) with most current "Issued" or "Revised" date.
Index*	Catalogs the contents of the Procedure by some logical means, i.e. Section Number, Report Reference Number, or Issue Date.	Replace present page by matching the UL File Number, Volume Number, Page Number and most current "Revised" date.
Appendices* # (App.)	Contains instructions for the Manufacturer and UL Representative concerning specific responsibilities and required periodic tests. May also outline tests to be conducted on samples to be forwarded to UL's facilities.	Replace present page by matching the UL File Number, Volume Number, Appendix letter (eg. App. A), Page Number and most current "Revised" date.
	Standardized Appendix Pages are the same for all manufacturers within a particular product category.	Replace present page by matching the Appendix letter (eg. App. A), Page Number and most current "Revised" date.
Follow-Up Inspection Instructions (FUII) Pages*	Contains information similar to that in the Appendices. FUII Pages are issued as part of the Procedure when a UL Standard is used in conjunction with the Procedure, and are the same for all manufacturers within a particular category.	Replace present pages by matching the Page Number and most current "Issued" or "Revised" date.
Section General* # (Sec. Gen.)	Contains description, requirements, identifications and/or specifications that are common to all products covered by the entire volume and supplements the information provided in the Description Section.	Replace present page by matching the UL File Number, Volume Number, Page Number and most current "Revised" date.
Description, or Section (Sec.)	Contains the specific description of one or more products or systems. This includes written text supplemented by photographs, drawings, etc., as necessary, to define features that affect compliance with the applicable requirements.	Replace present page by matching the UL File Number, Volume Number, Section Number, Page Number and most current "Issued" date.

* The above page(s) may not appear in all UL Follow-Up Service Procedures; UL's Conformity Assessment Services staff determines their inclusion.

These pages are combined in the **Generic Inspection Instructions** for International Style Reports, identified, as example by Vol. X1, X2, etc.

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FOLLOW-UP SERVICE PROCEDURE
(TYPE R)

MANAGEMENT EQUIPMENT, ENERGY
(PAZX, PAZX7)

Manufacturer: SEE ADDENDUM FOR MANUFACTURER LOCATIONS

2237052 (Party Site)
Applicant: ALLTERCO ROBOTICS EOOD
103 Cherni vruh bld.
1407 Sofia BULGARIA

2237052 (Party Site)
Listee: SAME AS APPLICANT

This Follow-Up Service Procedure authorizes the above Manufacturer(s) to use the marking specified by UL LLC, or any authorized licensee of UL LLC, including the UL Contracting Party, only on products when constructed, tested and found to be in compliance with the requirements of this Follow-Up Service Procedure and in accordance with the terms of the applicable service agreement with UL Contracting Party. The UL Contracting Party for Follow-Up Services is listed on addendum to this Follow-Up Service Procedure ("UL Contracting Party"). UL Contracting Party and UL LLC are referred to jointly herein as "UL."

UL further defines responsibilities, duties and requirements for both Manufacturers and UL representatives in the document titled, "UL Mark Surveillance Requirements" that can be located at the following web-site: <http://www.ul.com/fus>. Manufacturers without Internet access may obtain the current version of this document from their local UL customer service representative or UL field representative. For assistance, or to obtain a paper copy of this document or the Follow-Up Service Terms referenced below, please contact UL's Customer Service at <http://www.ul.com/aboutul/locations/>, select a location and enter your request, or call the number listed for that location.

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It is the responsibility of the Listee/Classified Co. to make sure that only the products meeting the aforementioned requirements bear the authorized Marks of UL LLC, or any authorized licensee of UL LLC.

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Capitalized terms used but not defined herein have the meanings set forth in the GSA and the applicable Service Terms or any other applicable UL service agreement.

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UL LLC has signed below solely in its capacity as the accredited entity to indicate that this Follow-Up Service Procedure is in compliance with the accreditation requirements.

Bruce A. Mahrenholz
Director
Conformity Assessment Programs (CPO)
UL LLC

LOCATION

2237052 (Party Site)
ALLTERCO ROBOTICS EOOD
103 Cherni vrub bld.
1407 Sofia BULGARIA

Factory ID: None
UL Contracting Party for above site is: UL GmbH

(FILE IMMEDIATELY AFTER AUTHORIZATION PAGE)

LISTING MARK

The Listing Mark consists of four elements placed in close proximity and shall appear on Listed products only.

The word "LISTED" shall be in either the four or six o'clock position with respect to the UL symbol (see example below). Minimum size of the Listing Mark is not specified, as long as it is legible. The minimum height of the registered trademark symbol ® shall be 3/64 of an inch. When the overall diameter of the UL symbol is less than 3/8 of an inch, the trademark symbol may be omitted if it is not legible. Camera-ready artwork and relative proportions are available online at www.ul.com.



XXXX = The control number assigned by UL, E504925.

The product identity is: "BUILDING MANAGEMENT SYSTEM," "BUILDING MANAGEMENT EQUIPMENT," "ENERGY MANAGEMENT EQUIPMENT," "OPEN ENERGY MANAGEMENT EQUIPMENT," "ENCLOSED ENERGY MANAGEMENT EQUIPMENT," "ENERGY MANAGEMENT EQUIPMENT ENCLOSURE," "ENERGY MANAGEMENT EQUIPMENT ENCLOSURE PART," "ENERGY MANAGEMENT EQUIPMENT SUBASSEMBLY" or "ENERGY MANAGEMENT EQUIPMENT ACCESSORY."

The word "MANAGEMENT" may be abbreviated "MGMT" or "MGT" (with or without a period); the word "EQUIPMENT" may be abbreviated "EQUIP" or "EQPT" (with or without a period).

The product identity may appear elsewhere on the product when the other three elements are directly and permanently applied to the product by stamping, molding, ink-stamping, silk screening or similar process or part of the nameplate that includes the rating or the catalog or model designation.

A separable Listing Mark (not part of a nameplate and in the form of decals, stickers or labels) shall always include the four elements.

PROCUREMENT

The manufacturer may reproduce the Mark or obtain it from an authorized label supplier. Authorized label suppliers can be found online at www.ul.com.

THIS PAGE SHALL BE REVISED BY UL LABEL OPERATIONS ONLY

(FILE IMMEDIATELY AFTER AUTHORIZATION PAGE)

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The Canadian/US symbol shall be used if both Canadian and US coverage is authorized (see example below).



The Canadian symbol shall be used if only Canadian coverage is authorized (see example below).



XXXX = The control number assigned by UL, E504925.

The product identity is: "BUILDING MANAGEMENT SYSTEM," "BUILDING MANAGEMENT EQUIPMENT," "ENERGY MANAGEMENT EQUIPMENT," "OPEN ENERGY MANAGEMENT EQUIPMENT," "ENCLOSED ENERGY MANAGEMENT EQUIPMENT," "ENERGY MANAGEMENT EQUIPMENT ENCLOSURE," "ENERGY MANAGEMENT EQUIPMENT ENCLOSURE PART," "ENERGY MANAGEMENT EQUIPMENT SUBASSEMBLY" or "ENERGY MANAGEMENT EQUIPMENT ACCESSORY."

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PROCUREMENT

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Models

Shelly1, Shelly2.5

Section

Report Date

1

2019-05-17

TEST REPORT
UL 60730-1, CAN/CSA-E60730-1
Automatic electrical controls for household and similar use

File Number.....: **E504925**
Project Number: 4788791898
Date of issue.....: 2019-05-17

Applicant's name: **Allterco Robotics Ltd**
Address: **103 Cherni vruh blvd, 1415 Sofia, Bulgaria**

Test specification:

Standard.....: UL 60730-1, 5th edition, dated August 03, 2016.
CAN/CSA-E60730-1, 5th edition, dated December 01, 2015 plus
Amendment 1, dated 2017.
Test procedure: UL/cUL Listing
Non-standard test method.....: N/A

Test Report Form No.: Short Form – Based on IEC6730_1H
Test Report Form(s) Originator: UL
Master TRF.....: Dated 2011-04

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Test item description: Operating control for electric appliances.

Trade Mark:



or Allterco Robotics Ltd.

Recognized Company Name.....: ALLTERCO ROBOTICS LTD
103, Cherni vruh blvd, 1415 Sofia, Bulgaria.

Model/Type reference: Shelly1, Shelly2.5

Ratings: 12 Vdc, 24-60 Vdc, 110-240 Vac, 50/60 Hz for Shelly1;
30-50 Vdc, 110-240 Vac, 50/60 Hz for Shelly2.5;
See GPI for additional rating details.

List of Attachments (including a total number of pages in each attachment):

Enclosures		
Type	Supplement Id	Description
Figure	1	Model Shelly1 – External view
Figure	2	Model Shelly1 – Disassembled view
Figure	3	Model Shelly2.5 – External view
Figure	4	Model Shelly2.5 – Disassembled view
Figure	5	Model Shelly1 – PWB, bottom side
Figure	6	Model Shelly2.5 – PWB, bottom side
Illustration	1	Model Shelly1 – PWB, Component + Trace layout
Illustration	2	Model Shelly1 – Mechanical drawings of housing
Illustration	3	Model Shelly2.5 – Main PWB, Component + Trace layout
Illustration	4	Model Shelly2.5 – Relay PWB, Component + Trace layout
Illustration	5	Model Shelly2.5 – Mechanical drawings of housing

Summary of compliance with National Differences

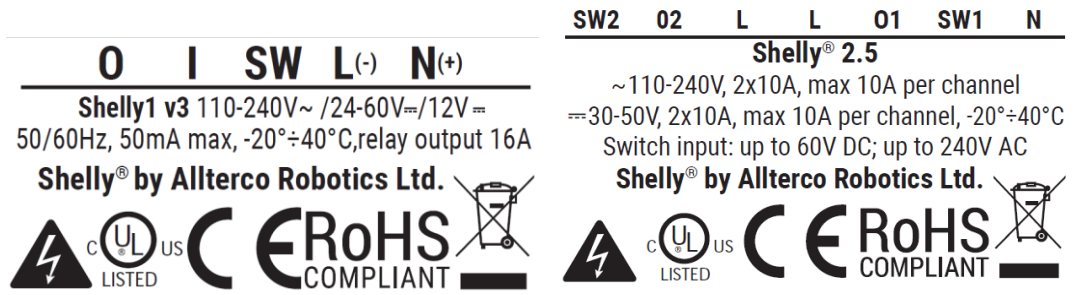
List of countries addressed:

United States

Canada

Copy of marking plate (Optional)

The artwork below may be only a draft. The use of certification marks on a product must be authorized by the respective NCBs that own these marks.



Markings

All markings are either:

- 1) permanently ink-stamped,
- 2) molded,
- 3) die-stamped,
- 4) paint stenciled,
- 5) silk-screened,
- 6) provided on a R/C Marking and Labelling System (PGDQ2/8), suitable for application to the surface involved, and rated 85 °C minimum, or provided on a R/C Printing materials (PGJ12/8) suitable for application to the surface involved; suitable for the ink and printer used; and rated 85 °C minimum.

The following markings are provided on the product:

1. Manufacturer's name or Trademark,
2. Model Number;
3. Ratings in Volts, Frequency, Amps or Watts, and types of loads;
4. Operating Temperature Range;
5. Date Code.
6. cULus or US and Canadian Listed UL Mark;

The following information is provided with the product documentation or marked on the product:

- A) Purpose of control: Operating;
- B) Construction of control: Independently mounted;
- C) Type 1.B Action;
- D) Pollution Degree 2;
- E) Impulse Voltage: 4000 V;
- F) Indication of proper terminal connection.

Test item particulars	: None
Operating ambient temperature	: -20°C to 40°C
Shipping and storage temperature	: -40°C to 60°C
Control type	: INDEPENDENTLY MOUNTED
Software class	: A
Overvoltage category	: III
Pollution degree	: 2
Rated Impulse Voltage	: 4000 V
Maximum phase to ground voltage of the supply source	: 240 V
Protection against electric shock class	: Class II
Environmental	: Indoor, open type
Classification of installation and use	: Stationary / Fixed
Supply Connection	: Fixed wirings
Operating frequency	: 50/60 Hz
General remarks:	
<p> "(see Enclosure #)" refers to additional information appended to the report. "(see appended table)" refers to a table appended to the report. </p> <p> Throughout this report a <input type="checkbox"/> comma / <input checked="" type="checkbox"/> point is used as the decimal separator. </p>	

General product information:

Shelly1 and Shelly2.5 are operating controls able to manage electrical appliances, such as lights.

They are intended to be mounted into a UL Listed standard in-wall console, behind power sockets and light switches or other places with limited space. These devices are investigated as Independently Mounted controls and were declared as Open type enclosure.

These controls were investigated as Type 1.B action, Operating Control, provided with software class A and not evaluated for safety or limiting applications.

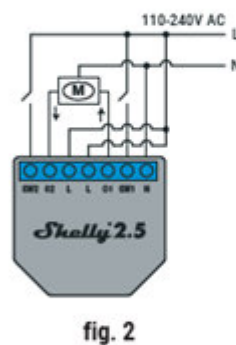
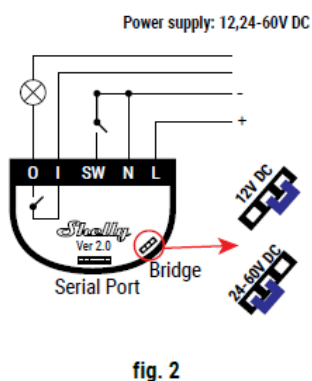
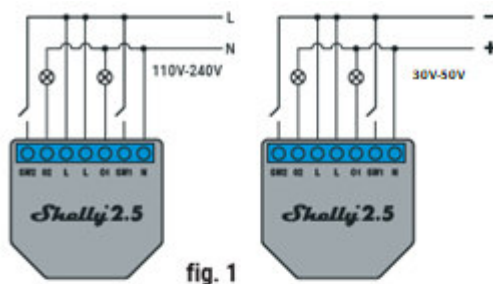
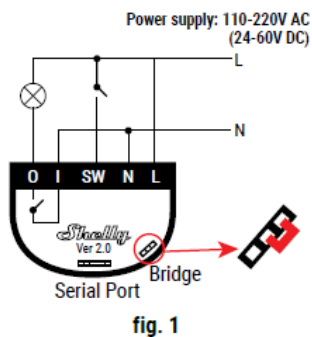
These devices were judged for application in Over voltage Category III and Pollution Degree 2, based on the end use installation considering: a) Permanently connected and b) when the electronic board will be mounted as in service than it will be enclosed and placed in an ambient relatively free of contamination and deposits of water. For other end use applications, additional testing and evaluation shall be considered.

Shelly1 has the possibility to be powered by 110-240 Vac, 12 Vdc or 24-60 Vdc; the last two alternative power supplies can be factory on installer set by a bridge. This model has one relay installed which serves as an output.

Shelly2.5 does not have the bridge, so only two alternative power supplies can be used: 110-240 Vac or 30-50 Vdc. This model has two relays which are serving as outputs.

Maximum current on neutral limited to 15 A.

Wiring schemes for Shelly1 and Shelly2.5:



LEGEND:
 N - Neutral input (Zero)/(+)
 L - Line input (110-230V)/(-)
 O - Output
 I - Input
 SW - Switch (input) controlling O

LEGEND:
 N - Neutral input (110-230V AC); + Positive input (24-60V DC)
 L - Line input (110-230V AC); - Negative input (24-60V DC)
 O1 - Output 1;
 O2 - Output 2;
 SW1 - Switch 1 (input controlling O1);
 SW2 - Switch 2 (input controlling O2).

Model Shelly1

INPUTS:

Input Type	Terminal	Rating
Power supply	J4-1 (L), J4-2 (N)	110 – 240 Vac, 50/60 Hz, 0.5 A max
		24 – 60 Vdc, 0.5 A max
		12 Vdc, 0.5 A max
Switch controlling	J4-3 (SW)	110 – 240 Vac, 50/60 Hz, 15 A max
Relay In	J4-5 (I)	110 – 240 Vac, 50/60 Hz, 15 A max

COMMUNICATION:

Type/Function	Terminal	Rating
Programming serial port (only used for factory programming)	J11	0...5V, Limited Energy, 15W or Less

OUTPUTS(+):

Output Terminals	Load Controlled	Switching Device and Schematic Ref	Electrical Ratings	Declaration
J4-4 (O)	Resistive load	RL1	240 Vac, 50/60Hz, 15 A, 100000 cycles	Type 1.B
	Incandescent (Tungsten) load		240 Vac, 50/60Hz, 2 A, 6000 cycles	

Model Shelly2.5

INPUTS:

Input Type	Terminal	Rating
Power supply	J1-1	110 – 240 Vac, 50/60 Hz, 0.5 A max
		30 – 50 Vdc, 0.5 A max
Switch controlling 1	J1-7 (SW1)	110 – 240 Vac, 50/60 Hz, 10 A max
Switch controlling 2	J1-2 (SW2)	

COMMUNICATION:

Type/Function	Terminal	Rating
Programming serial port (only used for factory programming)	J2	0...5V, Limited Energy, 15W or Less

OUTPUTS(+):

Output Terminals	Load Controlled	Switching Device and Schematic Ref	Electrical Ratings	Declaration
J1-6 (OUT1)	Resistive load	RL1	240 Vac, 50/60Hz, 10 A, 50000 cycles	Type 1.B
	Incandescent (Tungsten) load		240 Vac, 50/60Hz, 2 A, 6000 cycles	
	Motor load		240 Vac, 50/60 Hz, 1/2 hp, 6000 cycles	
J1-3 (OUT2)	Resistive load	RL2	240 Vac, 50/60Hz, 10 A, 50000 cycles	
	Incandescent (Tungsten) load		240 Vac, 50/60Hz, 2 A, 6000 cycles	
	Motor load		240 Vac, 50/60 Hz, 1/2 hp, 6000 cycles	

(+) Glossary:

Operating - Not intended to provide any safety or protective functionality. A control which starts or regulates the equipment during normal operation.

Type 1 Action - Calibration Verification Testing or Functionality Verification testing not conducted.

A Type “.B” control has been investigated for “micro disconnection” applications. Disconnection of any pole (ungrounded conductor is not specified) for functional security purposes. Clearance distance across the open contacts for this type of disconnect is NOT specified. However, creepage/clearance distances apply to parts separated by the action and electric strength testing is required across the disconnection.

20	TABLE: Creepage distance and clearance measurements		Verdict
	requirements creepage distance and clearance met		P
	supply working voltage (V)	240 V	—
	overvoltage category	III	—
	rated impulse voltage according to table 20.1(V)	4000 V	—
	requirements for case B (20.1.7, 20.1.12) met (cl20.1 Note 2)		N/A

Spacings

This component has been judged on the basis of the required clearances and creepages in the UL60730-1 standard, Table 22 (Case A), 23 and 24. Spacings are based on the parameters indicated below and as described above under Technical Considerations.

Creepage distance Cd and clearance Cl across	Type of insulation	Nominal Volt. (V)	Pollution degree	Required Cd (mm)	Cd (mm)	Required Cl (mm)	Cl (mm)
Model Shelly1							
Line versus Neutral	FI	240	2	2.5 [3.0(*)]	0.75 (^)	3.0	0.75 (^)
Line-referred circuit versus Relay RL1 contacts	FI	240	2	2.5 [3.0(*)]	< 0.5 (^)	3.0	< 0.5 (^)
Between Relay RL1 contacts	MD	240	2	2.5	4.7	---	---
Model Shelly2.5							
Line versus Neutral	FI	240	2	2.5 [3.0(*)]	< 0.5 (^)	3.0	< 0.5 (^)
Line-referred circuit versus Relay RL1 contacts	FI	240	2	2.5 [3.0(*)]	2.0 (^)	3.0	2.0 (^)
Line-referred circuit versus Relay RL2 contacts	FI	240	2	2.5 [3.0(*)]	2.0 (^)	3.0	2.0 (^)
Between Relay RL1 contacts	MD	240	2	2.5	4.7	---	---
Between Relay RL2 contacts	MD	240	2	2.5	4.7	---	---

Abbreviations for types of insulation:

FI: Functional Insulation, MD: Micro-Disconnection.

20.1.7.1 For MICRO-DISCONNECTION and MICRO-INTERRUPTION, there is no specified minimum distance for the CLEARANCE between the contacts.

(^) Short circuit performed in lieu of lack of functional creepage distances.

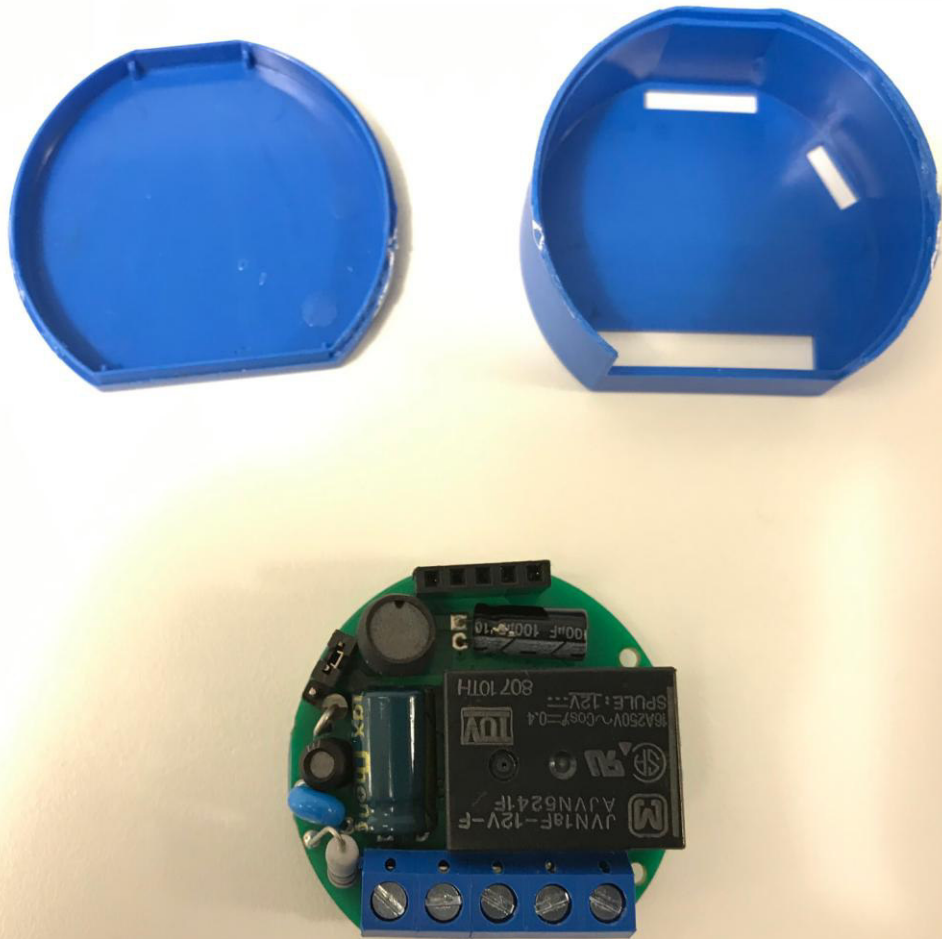
(*) ENG.NOTE: based on Note 2 of Clause 20 a Creepage distance cannot be less than the associated clearance. The shortest Creepage Distance possible is equal to the required Clearance.

Creepage distances for Micro-Disconnection have been calculated on terminal block surface (Material Group III)

List of critical components					
Object/part or Description	Manufacturer/trademark	Type/model	Technical data	Product Category CCN(s)	Required Marks of Conformity
Model Shelly1					
Housing	SABIC INNOVATIVE PLASTICS B V	CX7240 (GG)	All Color. Rated Flame Class "V-0", at 0.75 mm minimum thickness. HWI 3, HAI 0, CTI 3, RTI 90°C. Dielectric Strength: 22kV/mm, Volume Resistivity: 10 ¹⁶ ohm-cm. Refer to Ill.2 for dimension and shape.	QMFZ2	UL, CUL (E45329)
Printed Wiring Board	Interchangeable	Interchangeable	Overall measures diam. 40 mm and 1.5 mm thick. Ref. to Ill. 1. for component and trace layout Rated as follows 1) suitable for the solder time and temperature used by the manufacturer 2) minimum PTI 175 V (CTI of 3) 3) minimum temperature: 90°C 4) minimum flame rating: 94V-2 5) suitable for direct support of live parts	ZPMV2/8	UL, CUL
Terminal block (J4)	CIXI WANJIE ELECTRON CO LTD	WJ301-5.0	Rated 250 V, 16 A, 105°C, suitable for field and factory wiring. AWG range 22-14	XCFR2/8	UL, CUL (E251331)
Capacitor (C9)	Interchangeable	Interchangeable	Electrolytic, rated minimum 400V, 1uF, T75	---	Tested in appliance
Fusing Resistor (RF1)	DONGGUAN HONGDA ELECTRONIC TECHNOLOGY CO LTD	RXF	Rated 10 ohm, 250 V, 0.5W; tolerance 5%	FPEW2/8	UL, CUL (E359590)
Varistor (VR1)	BESTBRIGHT ELECTRONICS CO LTD	07N391K	Rated minimum MCOV 240 VAC/VDC, MLV max: 4000 Vpk, In min: 400 A	VZCA2/8	UL, CUL (E472693)
Relay (RL1)	PANASONIC CORPORATION	JVN1aF	General use 16 A, 277 Vac, 100k cycles, Tmax 40°C. Incandescent (Tungsten) load, 2 A, 250 Vac, 6000 cycles, Tmax 40°C Insulation System Class A.	NLDX2/8	UL, CUL (E43028)

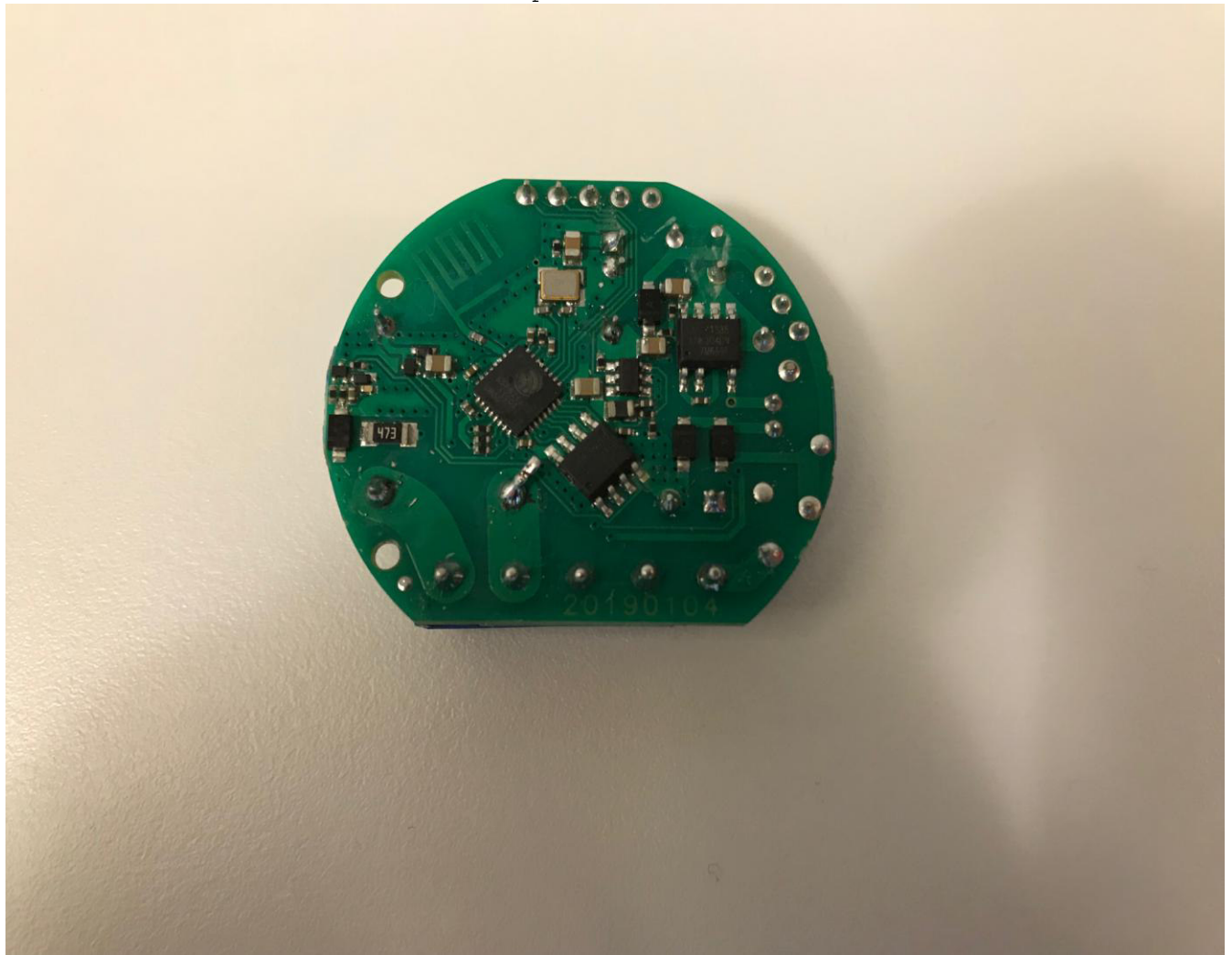
Object/part or Description	Manufacturer/ trademark	Type/model	Technical data	Product Category CCN(s)	Required Marks of Conformity
Model Shelly2					
Housing	SABIC INNOVATIVE PLASTICS B V	CX7240 (GG)	All Color. Rated Flame Class "V-0", at 0.75 mm minimum thickness. HWI 3, HAI 0, CTI 3, RTI 90°C. Dielectric Strength: 22kV/mm, Volume Resistivity: 10 ¹⁶ ohm-cm. Refer to Ill.2 for dimension and shape.	QMFZ2	UL, CUL (E45329)
Main PWB	Interchangeable	Interchangeable	Overall measures 33 by 36 mm and 1.2 mm thick. Ref. to Ill. 3 for component and trace layout Rated as follows 1) suitable for the solder time and temperature used by the manufacturer 2) minimum PTI 175 V (CTI of 3) 3) minimum temperature: 105°C 4) minimum flame rating: 94V-2 5) suitable for direct support of live parts	ZPMV2/8	UL, CUL
Relay PWB	Interchangeable	Interchangeable	Overall measures 12.5 by 36 mm and 1.2 mm thick. Ref. to Ill. 4 for component and trace layout Rated as follows 1) suitable for the solder time and temperature used by the manufacturer 2) minimum PTI 175 V (CTI of 3) 3) minimum temperature: 105°C 4) minimum flame rating: 94V-2 5) suitable for direct support of live parts	ZPMV2/8	UL, CUL
Terminal block (J1)	CIXI WANJIE ELECTRON CO LTD	WJ301-5.0	Rated 250 V, 16 A, 105°C, suitable for field and factory wiring. AWG range 22-14	XCFR2/8	UL, CUL (E251331)
Fusing Resistor (RF1)	DONGGUAN HONGDA ELECTRONIC TECHNOLOGY CO LTD	RXF	Rated 10 ohm, 250 V, 0.5W; tolerance 5%	FPEW2/8	UL, CUL (E359590)
Varistor (VR1)	BESTBRIGHT ELECTRONICS CO LTD	07N391K	Rated minimum MCOV 240 VAC/VDC, MLV max: 4000 Vpk, In min: 400 A	VZCA2/8	UL, CUL (E472693)
Relay (RL1, RL2)	XIAMEN HONGFA ELECTROACOUSTIC CO LTD	HF32FA-G	Resistive load, 10 A, 250 Vac, 15000 cycles, Tmax 85°C. Incandescent (Tungsten) load, 2 A, 250 Vac, 6000 cycles, Tmax 40°C Motor load, 240 Vac, 50/60 Hz, 1/2hp, 6000 cycles, Tmax 40°C Insulation System Class F.	NLDX2/8	UL, CUL (E134517)



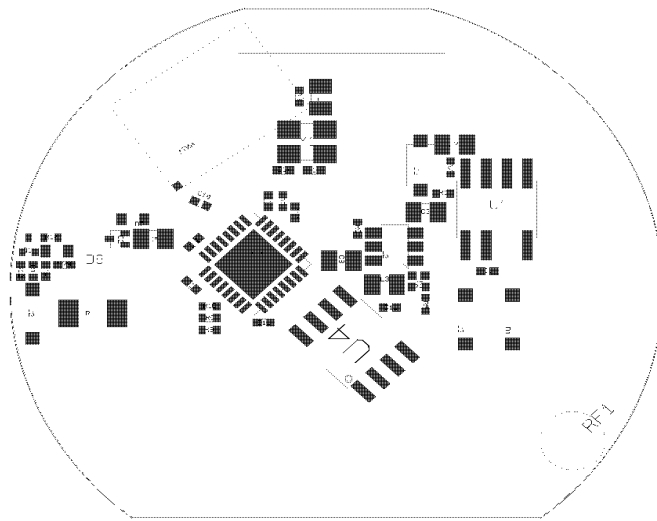




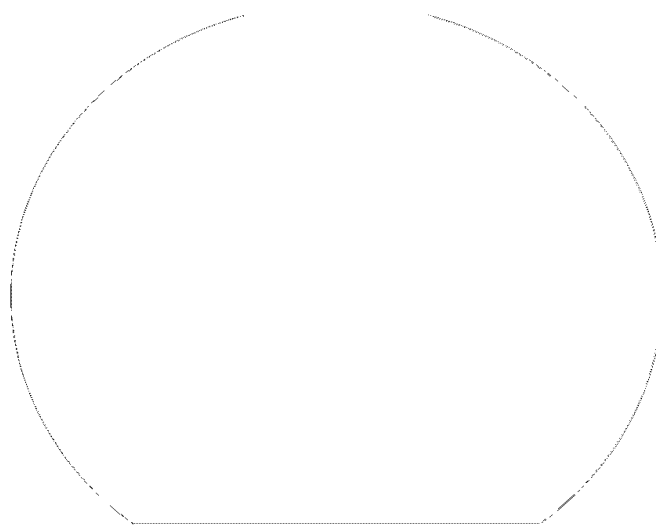


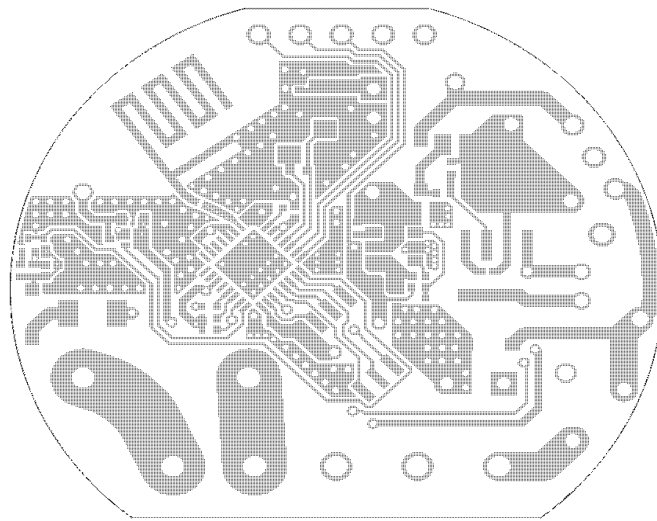




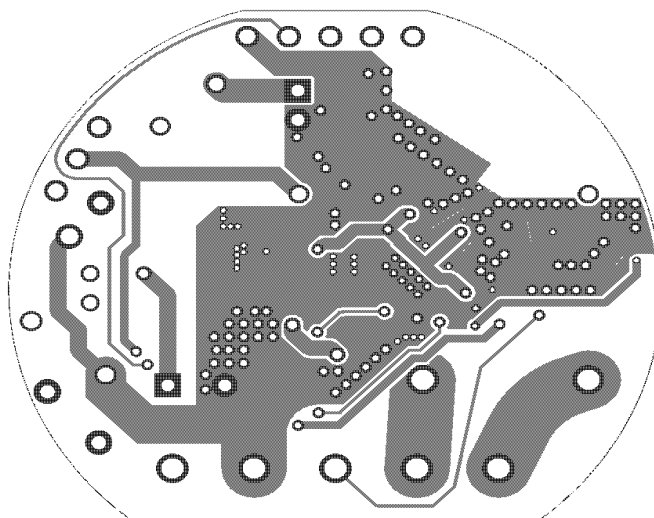


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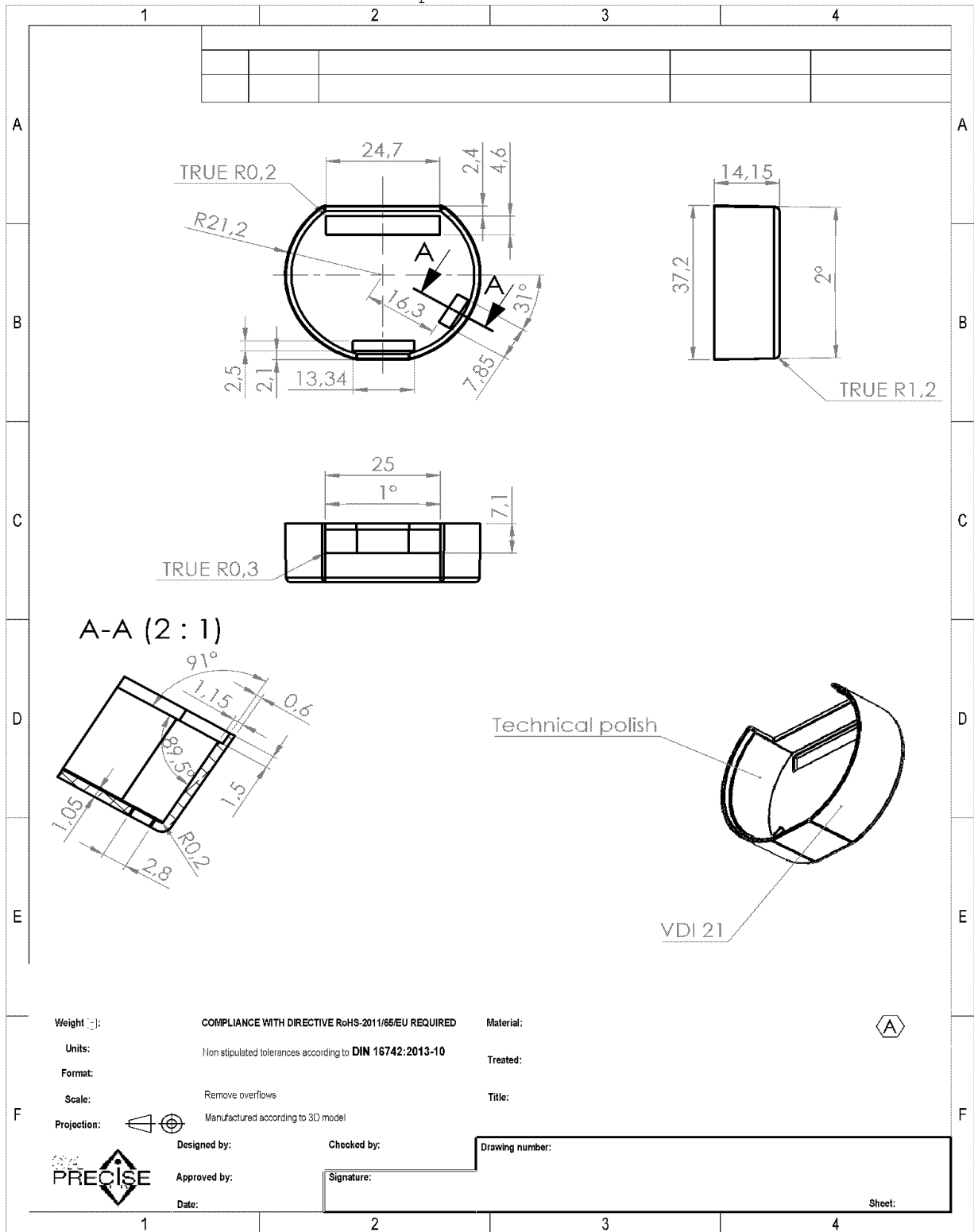




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Weight :

COMPLIANCE WITH DIRECTIVE RoHS-2011/65/EU REQUIRED

Material:



Units:

Non stipulated tolerances according to DIN 16742:2013-10

Treated:

Format:

Scale:

Remove overflows

Title:

Projection:



Manufactured according to 3D model



Designed by:

Checked by:

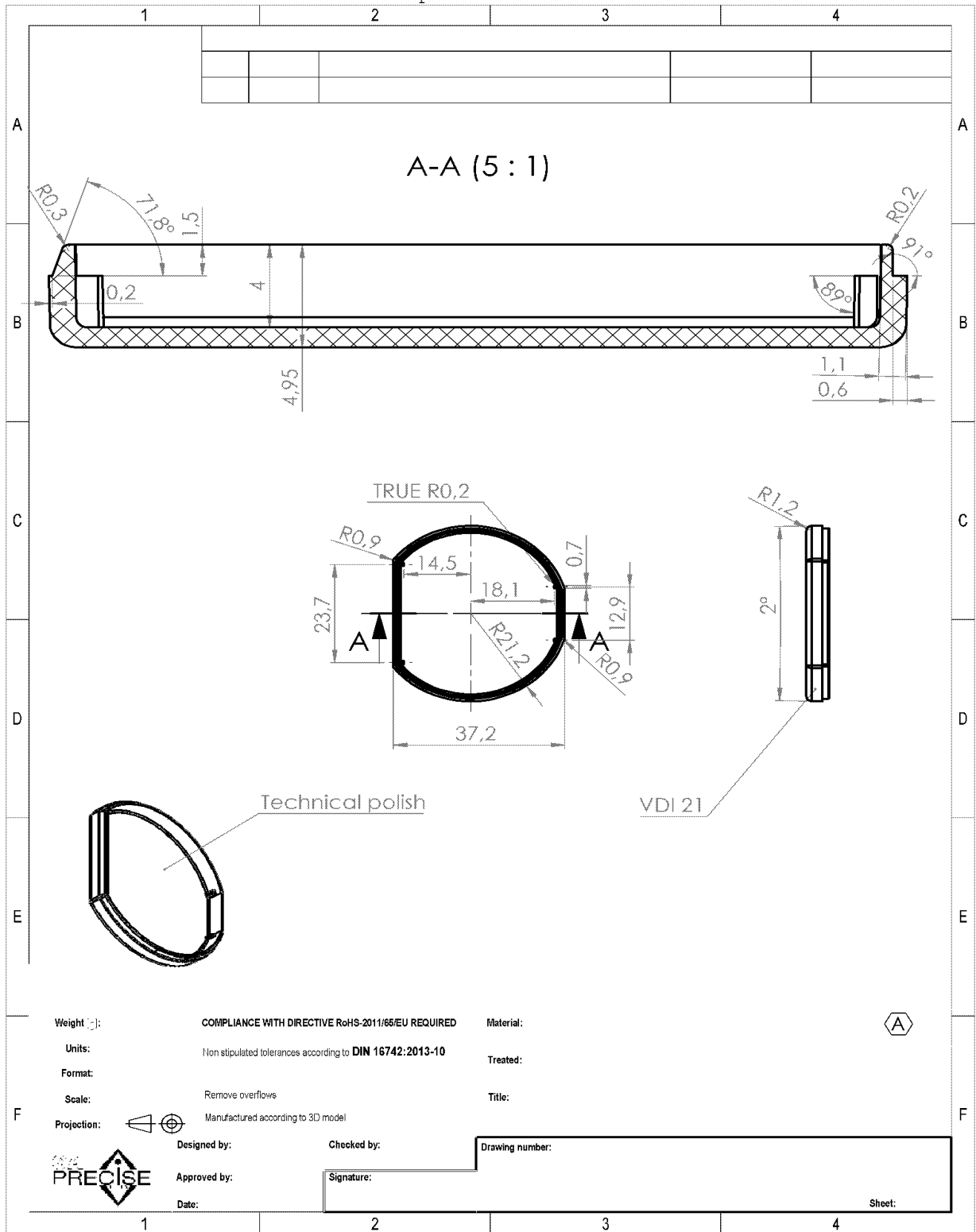
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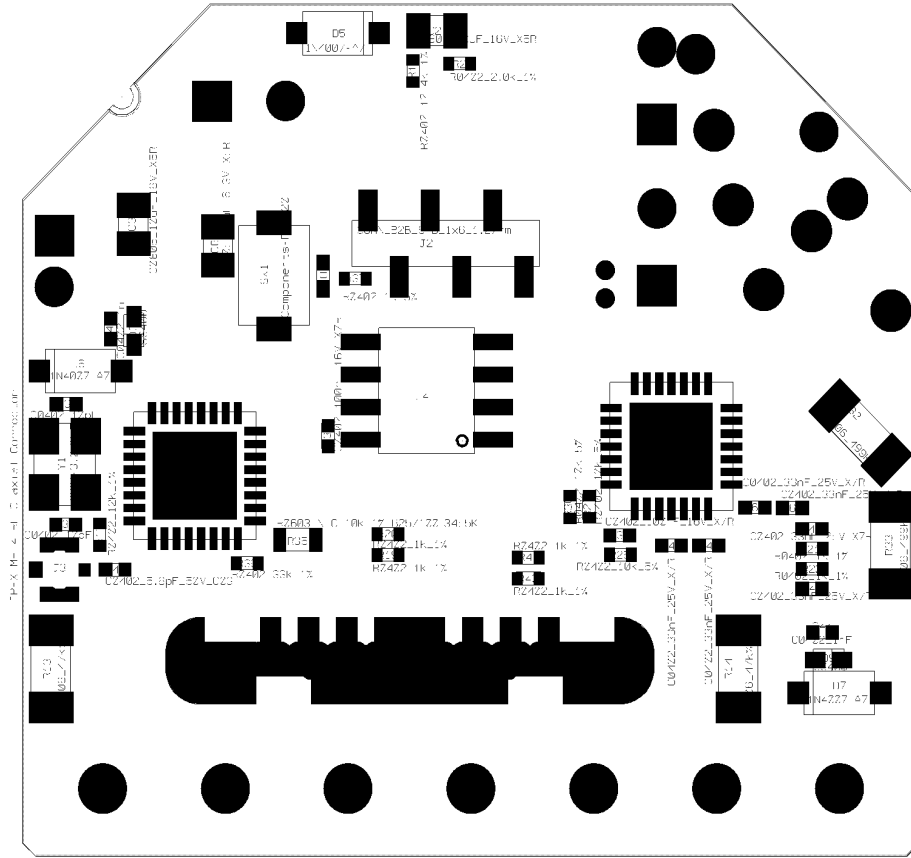
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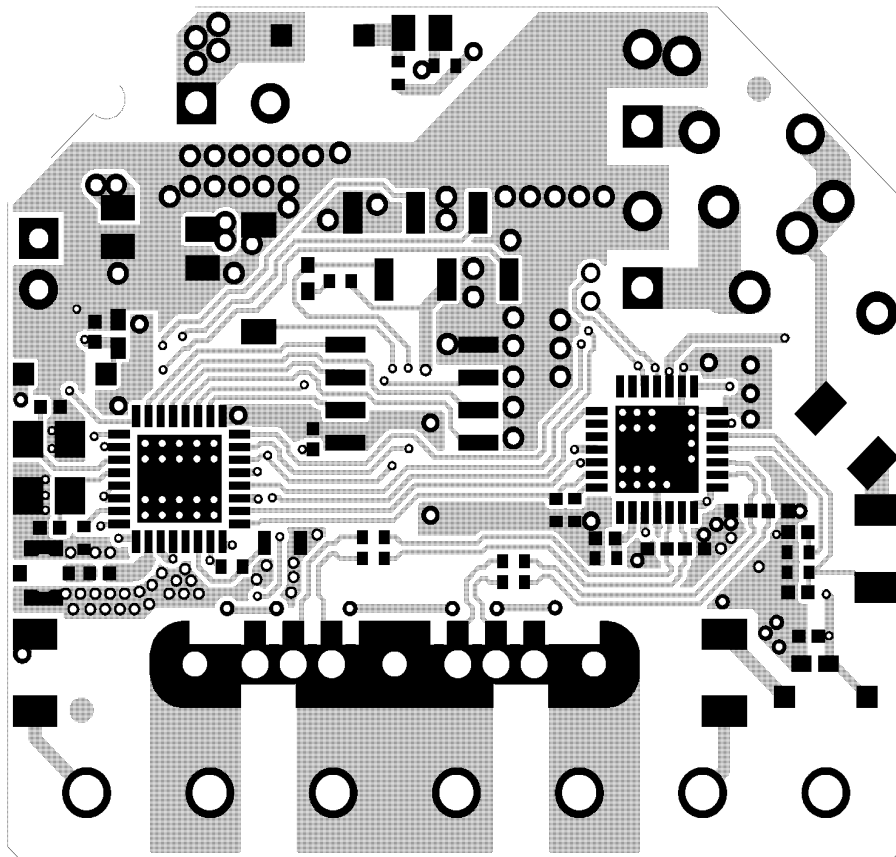
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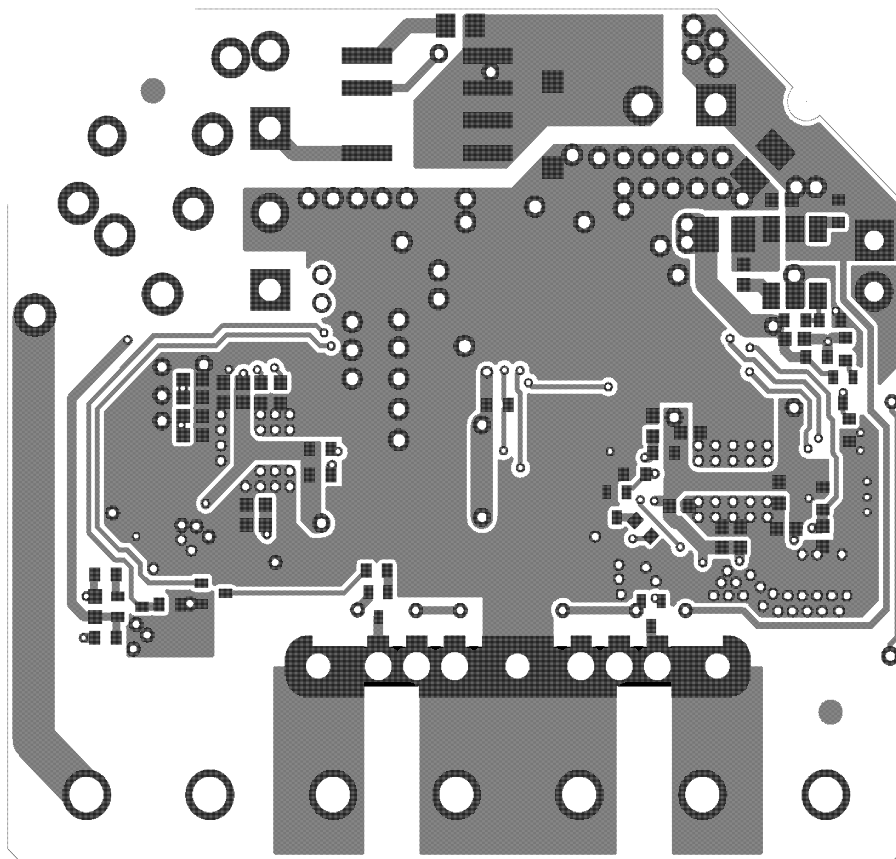
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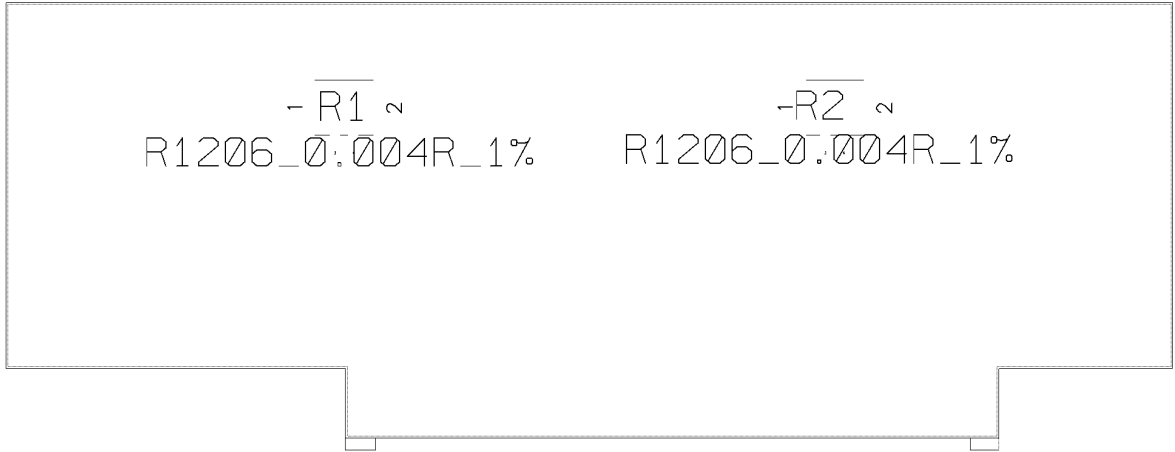
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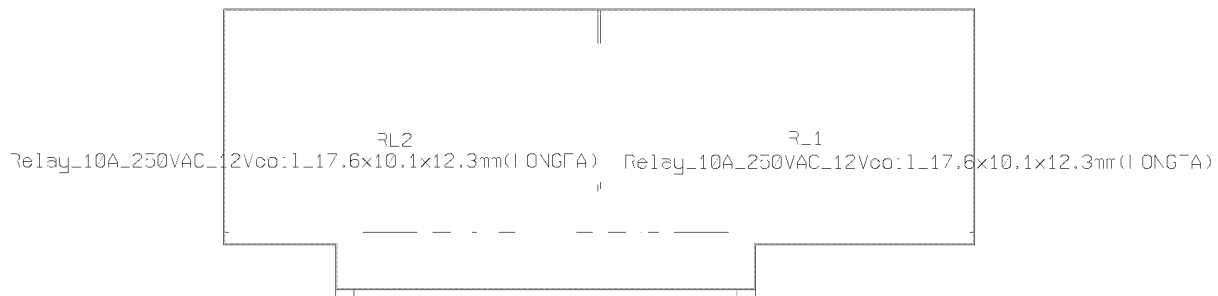


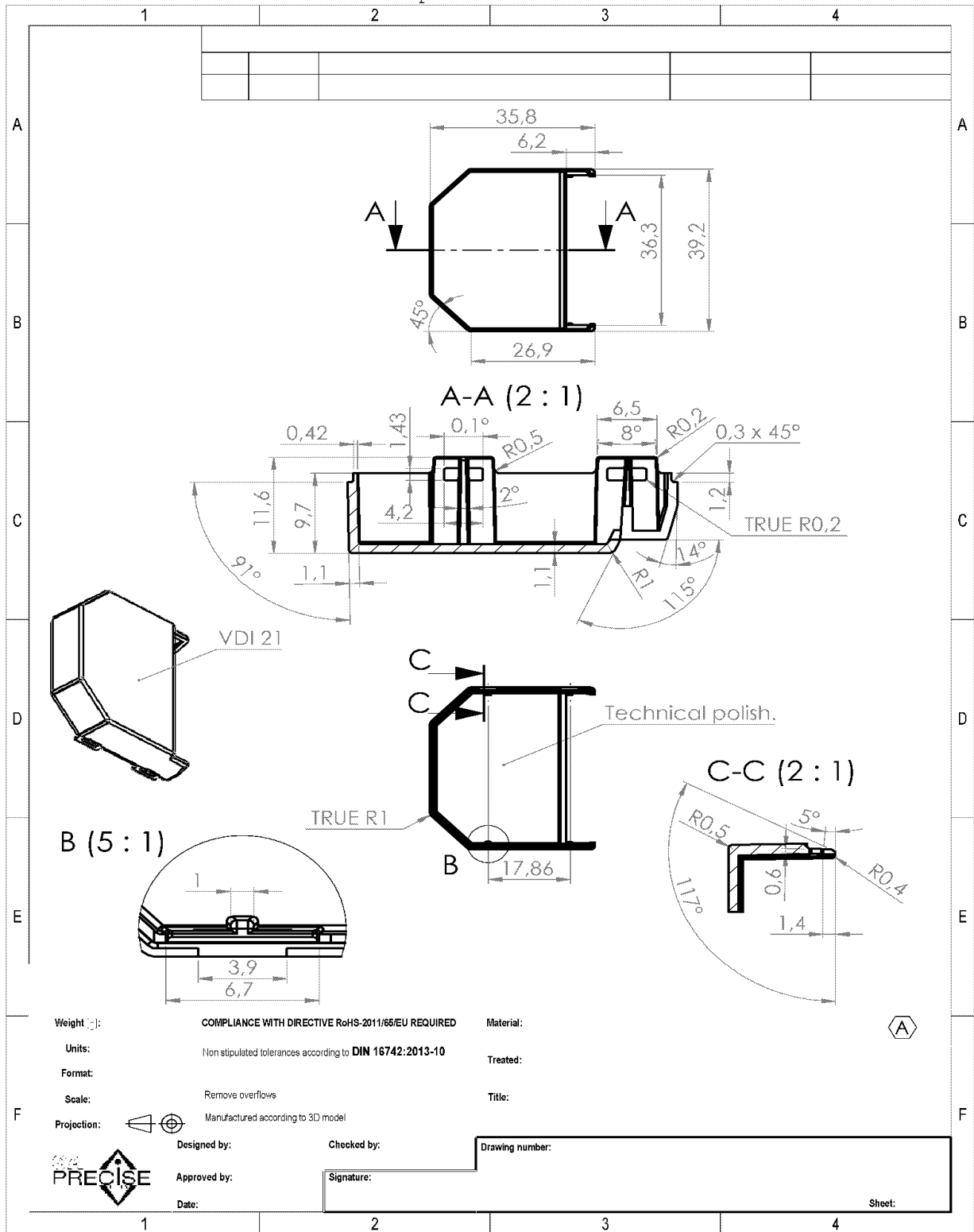


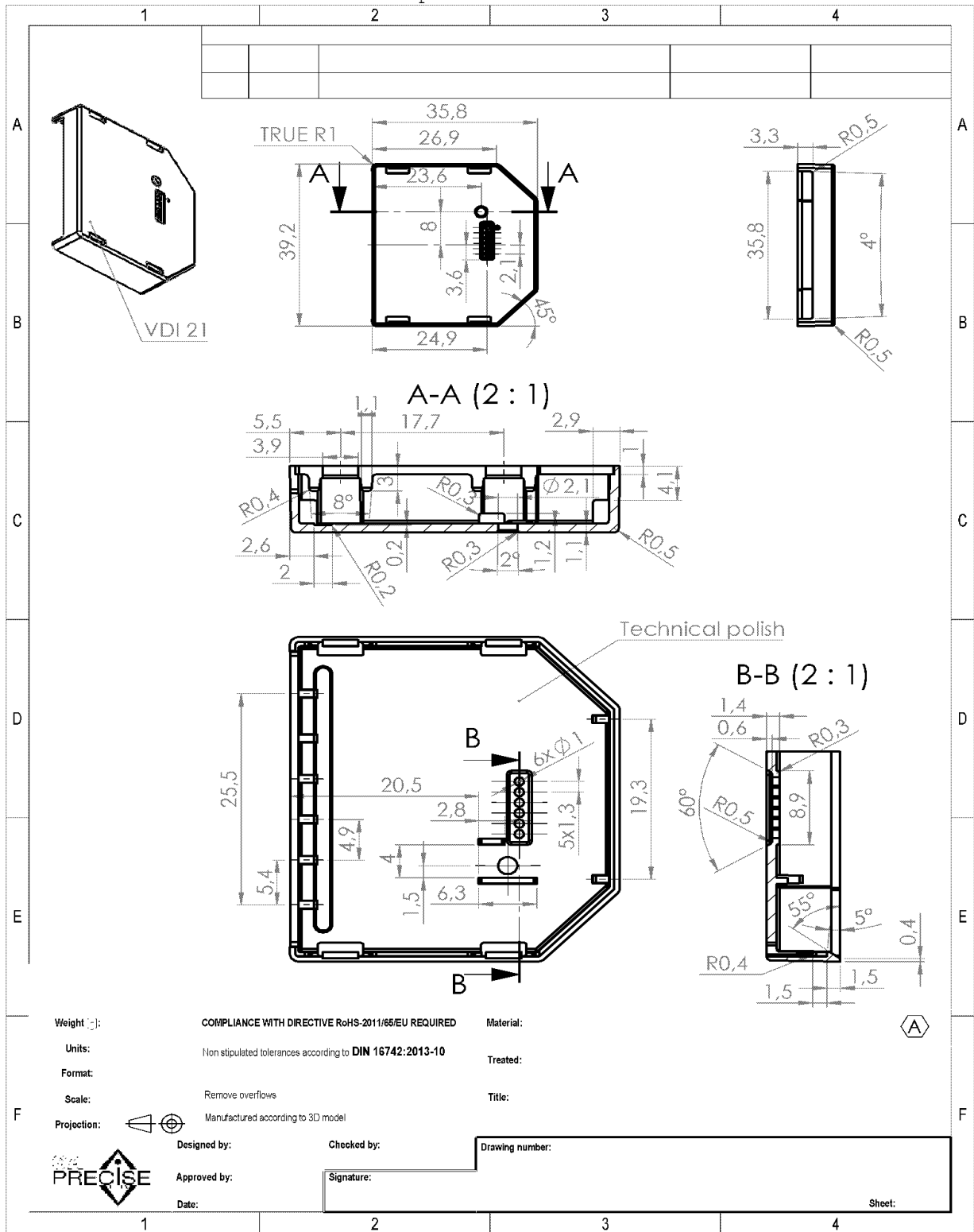












Weight : COMPLIANCE WITH DIRECTIVE RoHS-2011/65/EU REQUIRED

Material:

Units: Non stipulated tolerances according to DIN 16742:2013-10

Treated:

Format:

Remove overflows

Title:

Scale:

Manufactured according to 3D model

Projection:



Designed by:

Checked by:

Drawing number:



Approved by:

Signature:

Date:

Sheet:

CERTIFICATE OF COMPLIANCE

Certificate Number 20190523-E504925
Report Reference E504925-20190517
Issue Date 2019-MAY-23

Issued to: ALLTERCO ROBOTICS EOOD
103 Cherni vruch bld.
1407 Sofia BULGARIA

This certificate confirms that representative samples of MANAGEMENT EQUIPMENT, ENERGY Shelly1, Shelly2.5

Have been investigated by UL in accordance with the Standard(s) indicated on this Certificate.

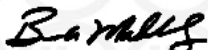
Standard(s) for Safety: UL 60730-1 - The Standard for Automatic Electrical Controls for Household and Similar Use
CAN/CSA-E60730-1:15 - The Canadian Standard for Automatic Electrical Controls for Household and Similar Use
Amendment 1

Additional Information: See the UL Online Certifications Directory at <https://iq.ulprospector.com> for additional information.

This *Certificate of Compliance* does not provide authorization to apply the UL Mark. Only the UL Follow-Up Services Procedure provides authorization to apply the UL Mark.

Only those products bearing the UL Mark should be considered as being UL Certified and covered under UL's Follow-Up Services.

Look for the UL Certification Mark on the product.



Bruce Mahrenholz, Director North American Certification Program
UL LLC

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File E504925
Project 4788791898

May 17, 2019

REPORT

on

COMPONENT - Open Energy Management Equipment

ALLTERCO ROBOTICS EOOD
Sofia - BULGARIA

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TEST REPORT
UL 60730-1, CAN/CSA-E60730-1
Automatic electrical controls for household and similar use

File Number.....: **E504925**
Project Number: 4788791898
Date of issue.....: 2019-05-17

Applicant's name: **Allterco Robotics Ltd**
Address.....: **103 Cherni vruch blvd, 1415 Sofia, Bulgaria**

Test specification:

Standard.....: UL 60730-1, 5th edition, dated August 03, 2016.
CAN/CSA-E60730-1, 5th edition, dated December 01, 2015 plus
Amendment 1, dated 2017.
Test procedure: UL/cUL Listing
Non-standard test method.....: N/A

Test Report Form No.: Short Form – Based on IEC6730_1H
Test Report Form(s) Originator: UL
Master TRF.....: Dated 2011-04

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Test item description: Operating control for electric appliances.

Trade Mark.....:



or Allterco Robotics Ltd.

Recognized Company Name.....: ALLTERCO ROBOTICS LTD
103, Cherni vruch blvd, 1415 Sofia, Bulgaria.

Model/Type reference: Shelly1, Shelly2.5

Ratings: 12 Vdc, 24-60 Vdc, 110-240 Vac, 50/60 Hz for Shelly1;
30-50 Vdc, 110-240 Vac, 50/60 Hz for Shelly2.5;
See GPI for additional rating details.

List of Attachments (including a total number of pages in each attachment):

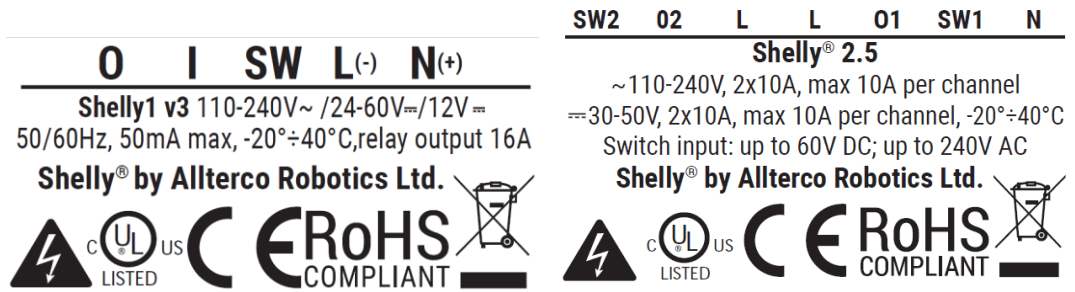
Enclosures		
Type	Supplement Id	Description
Figure	1	Model Shelly1 – External view
Figure	2	Model Shelly1 – Disassembled view
Figure	3	Model Shelly2.5 – External view
Figure	4	Model Shelly2.5 – Disassembled view
Figure	5	Model Shelly1 – PWB, bottom side
Figure	6	Model Shelly2.5 – PWB, bottom side
Illustration	1	Model Shelly1 – PWB, Component + Trace layout
Illustration	2	Model Shelly1 – Mechanical drawings of housing
Illustration	3	Model Shelly2.5 – Main PWB, Component + Trace layout
Illustration	4	Model Shelly2.5 – Relay PWB, Component + Trace layout
Illustration	5	Model Shelly2.5 – Mechanical drawings of housing

Summary of compliance with National Differences**List of countries addressed:**

United States
Canada

Copy of marking plate (Optional)

The artwork below may be only a draft. The use of certification marks on a product must be authorized by the respective NCBs that own these marks.

**Markings**

All markings are either:

- 1) permanently ink-stamped,
- 2) molded,
- 3) die-stamped,
- 4) paint stenciled,
- 5) silk-screened,
- 6) provided on a R/C Marking and Labelling System (PGDQ2/8), suitable for application to the surface involved, and rated 85 °C minimum, or provided on a R/C Printing materials (PGJ12/8) suitable for application to the surface involved; suitable for the ink and printer used; and rated 85 °C minimum.

The following markings are provided on the product:

1. Manufacture's name or Trademark,
2. Model Number;
3. Ratings in Volts, Frequency, Amps or Watts, and types of loads;
4. Operating Temperature Range;
5. Date Code.
6. cULus or US and Canadian Listed UL Mark;

The following information is provided with the product documentation or marked on the product:

- A) Purpose of control: Operating;
- B) Construction of control: Independently mounted;
- C) Type 1.B Action;
- D) Pollution Degree 2;
- E) Impulse Voltage: 4000 V;
- F) Indication of proper terminal connection.

Test item particulars	: None
Operating ambient temperature	: -20°C to 40°C
Shipping and storage temperature	: -40°C to 60°C
Control type	: INDEPENDENTLY MOUNTED
Software class	: A
Overvoltage category	: III
Pollution degree	: 2
Rated Impulse Voltage	: 4000 V
Maximum phase to ground voltage of the supply source	: 240 V
Protection against electric shock class	: Class II
Environmental	: Indoor, open type
Classification of installation and use	: Stationary / Fixed
Supply Connection	: Fixed wirings
Operating frequency	: 50/60 Hz
General remarks:	
<p>“(see Enclosure #)” refers to additional information appended to the report. “(see appended table)” refers to a table appended to the report.</p> <p>Throughout this report a <input type="checkbox"/> comma / <input checked="" type="checkbox"/> point is used as the decimal separator.</p>	

General product information:

Shelly1 and Shelly2.5 are operating controls able to manage electrical appliances, such as lights.

They are intended to be mounted into a UL Listed standard in-wall console, behind power sockets and light switches or other places with limited space. These devices are investigated as Independently Mounted controls and were declared as Open type enclosure.

These controls were investigated as Type 1.B action, Operating Control, provided with software class A and not evaluated for safety or limiting applications.

These devices were judged for application in Over voltage Category III and Pollution Degree 2, based on the end use installation considering: a) Permanently connected and b) when the electronic board will be mounted as in service than it will be enclosed and placed in an ambient relatively free of contamination and deposits of water. For other end use applications, additional testing and evaluation shall be considered.

Shelly1 has the possibility to be powered by 110-240 Vac, 12 Vdc or 24-60 Vdc; the last two alternative power supplies can be factory or installer set by a bridge. This model has one relay installed which serves as an output.

Shelly2.5 does not have the bridge, so only two alternative power supplies can be used: 110-240 Vac or 30-50 Vdc. This model has two relays which are serving as outputs.

Maximum current on neutral limited to 15 A.

Wiring schemes for Shelly1 and Shelly2.5:

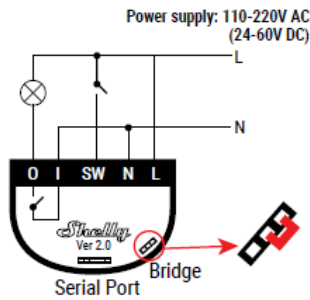


fig. 1

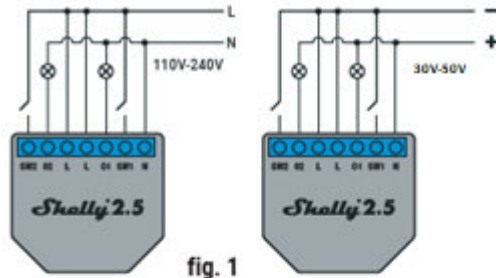


fig. 1

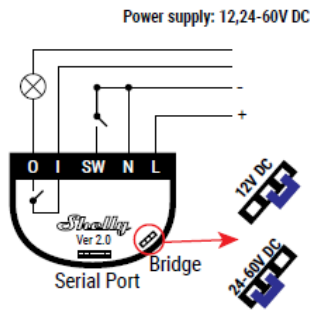


fig. 2

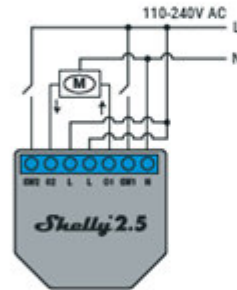


fig. 2

LEGEND:
 N - Neutral input (Zero)/(+)
 L - Line input (110-230V)/(-)
 O - Output
 I - Input
 SW - Switch (input) controlling O

LEGEND:
 N - Neutral input (110-230V AC); + Positive input (24-60V DC)
 L - Line input (110-230V AC); - Negative input (24-60V DC)
 O1 - Output 1;
 O2 - Output 2;
 SW1 - Switch 1 (input controlling O1);
 SW2 - Switch 2 (input controlling O2).

Model Shelly1**INPUTS:**

Input Type	Terminal	Rating
Power supply	J4-1 (L), J4-2 (N)	110 – 240 Vac, 50/60 Hz, 0.5 A max
		24 – 60 Vdc, 0.5 A max
		12 Vdc, 0.5 A max
Switch controlling	J4-3 (SW)	110 – 240 Vac, 50/60 Hz, 15 A max
Relay In	J4-5 (I)	110 – 240 Vac, 50/60 Hz, 15 A max

COMMUNICATION:

Type/Function	Terminal	Rating
Programming serial port (only used for factory programming)	J11	0...5V, Limited Energy, 15W or Less

OUTPUTS(+):

Output Terminals	Load Controlled	Switching Device and Schematic Ref	Electrical Ratings	Declaration
J4-4 (O)	Resistive load	RL1	240 Vac, 50/60Hz, 15 A, 100000 cycles	Type 1.B
	Incandescent (Tungsten) load		240 Vac, 50/60Hz, 2 A, 6000 cycles	

Model Shelly2.5**INPUTS:**

Input Type	Terminal	Rating
Power supply	J1-1	110 – 240 Vac, 50/60 Hz, 0.5 A max
		30 – 50 Vdc, 0.5 A max
Switch controlling 1	J1-7 (SW1)	110 – 240 Vac, 50/60 Hz, 10 A max
Switch controlling 2	J1-2 (SW2)	

COMMUNICATION:

Type/Function	Terminal	Rating
Programming serial port (only used for factory programming)	J2	0...5V, Limited Energy, 15W or Less

OUTPUTS(+):

Output Terminals	Load Controlled	Switching Device and Schematic Ref	Electrical Ratings	Declaration
J1-6 (OUT1)	Resistive load	RL1	240 Vac, 50/60Hz, 10 A, 50000 cycles	Type 1.B
	Incandescent (Tungsten) load		240 Vac, 50/60Hz, 2 A, 6000 cycles	
	Motor load		240 Vac, 50/60 Hz, 1/2 hp, 6000 cycles	
J1-3 (OUT2)	Resistive load	RL2	240 Vac, 50/60Hz, 10 A, 50000 cycles	Type 1.B
	Incandescent (Tungsten) load		240 Vac, 50/60Hz, 2 A, 6000 cycles	
	Motor load		240 Vac, 50/60 Hz, 1/2 hp, 6000 cycles	

(+) Glossary:

Operating - Not intended to provide any safety or protective functionality. A control which starts or regulates the equipment during normal operation.

Type 1 Action - Calibration Verification Testing or Functionality Verification testing not conducted.

A Type “.B” control has been investigated for “micro disconnection” applications. Disconnection of any pole (ungrounded conductor is not specified) for functional security purposes. Clearance distance across the open contacts for this type of disconnect is NOT specified. However, creepage/clearance distances apply to parts separated by the action and electric strength testing is required across the disconnection.

20	TABLE: Creepage distance and clearance measurements	Verdict
	requirements creepage distance and clearance met	P
	supply working voltage (V)	240 V
	overvoltage category	III
	rated impulse voltage according to table 20.1(V)	4000 V
	requirements for case B (20.1.7, 20.1.12) met (cl20.1 Note 2)	N/A

Spacings

This component has been judged on the basis of the required clearances and creepages in the UL60730-1 standard, Table 22 (Case A), 23 and 24. Spacings are based on the parameters indicated below and as described above under Technical Considerations.

Creepage distance Cd and clearance Cl across	Type of insulation	Nominal Volt. (V)	Pollution degree	Required Cd (mm)	Cd (mm)	Required Cl (mm)	Cl (mm)
Model Shelly1							
Line versus Neutral	FI	240	2	2.5 [3.0(*)]	0.75 (^^)	3.0	0.75 (^^)
Line-referred circuit versus Relay RL1 contacts	FI	240	2	2.5 [3.0(*)]	< 0.5 (^^)	3.0	< 0.5 (^^)
Between Relay RL1 contacts	MD	240	2	2.5	4.7	---	---
Model Shelly2.5							
Line versus Neutral	FI	240	2	2.5 [3.0(*)]	< 0.5 (^^)	3.0	< 0.5 (^^)
Line-referred circuit versus Relay RL1 contacts	FI	240	2	2.5 [3.0(*)]	2.0 (^^)	3.0	2.0 (^^)
Line-referred circuit versus Relay RL2 contacts	FI	240	2	2.5 [3.0(*)]	2.0 (^^)	3.0	2.0 (^^)
Between Relay RL1 contacts	MD	240	2	2.5	4.7	---	---
Between Relay RL2 contacts	MD	240	2	2.5	4.7	---	---

Abbreviations for types of insulation:
FI: Functional Insulation, MD: Micro-Disconnection.

20.1.7.1 For MICRO-DISCONNECTION and MICRO-INTERRUPTION, there is no specified minimum distance for the CLEARANCE between the contacts.

(^^) Short circuit performed in lieu of lack of functional creepage distances.

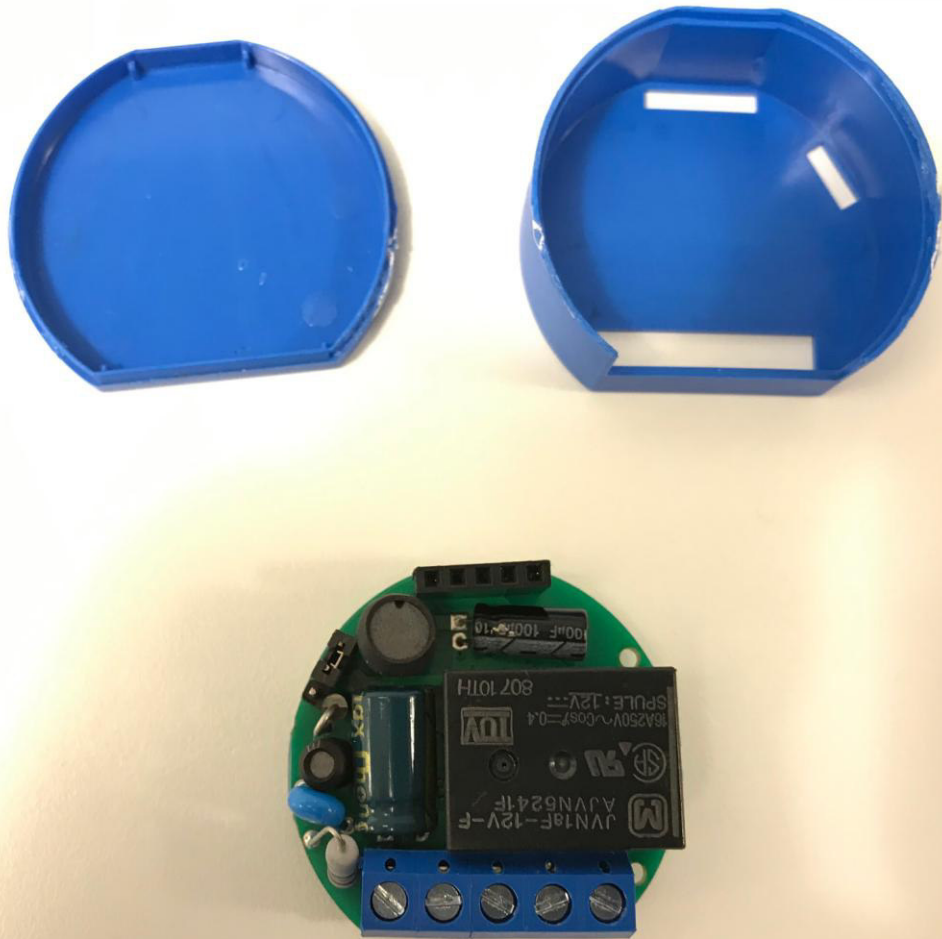
(*) ENG.NOTE: based on Note 2 of Clause 20 a Creepage distance cannot be less than the associated clearance. The shortest Creepage Distance possible is equal to the required Clearance.

Creepage distances for Micro-Disconnection have been calculated on terminal block surface (Material Group III)

List of critical components					
Object/part or Description	Manufacturer/trademark	Type/model	Technical data	Product Category CCN(s)	Required Marks of Conformity
Model Shelly1					
Housing	SABIC INNOVATIVE PLASTICS B V	CX7240 (GG)	All Color. Rated Flame Class "V-0", at 0.75 mm minimum thickness. HWI 3, HAI 0, CTI 3, RTI 90°C. Dielectric Strength: 22kV/mm, Volume Resistivity: 10 ¹⁶ ohm-cm. Refer to Ill.2 for dimension and shape.	QMFZ2	UL, CUL (E45329)
Printed Wiring Board	Interchangeable	Interchangeable	Overall measures diam. 40 mm and 1.5 mm thick. Ref. to Ill. 1. for component and trace layout Rated as follows 1) suitable for the solder time and temperature used by the manufacturer 2) minimum PTI 175 V (CTI of 3) 3) minimum temperature: 90°C 4) minimum flame rating: 94V-2 5) suitable for direct support of live parts	ZPMV2/8	UL, CUL
Terminal block (J4)	CIXI WANJIE ELECTRON CO LTD	WJ301-5.0	Rated 250 V, 16 A, 105°C, suitable for field and factory wiring. AWG range 22-14	XCFR2/8	UL, CUL (E251331)
Capacitor (C9)	Interchangeable	Interchangeable	Electrolytic, rated minimum 400V, 1uF, T75	---	Tested in appliance
Fusing Resistor (RF1)	DONGGUAN HONGDA ELECTRONIC TECHNOLOGY CO LTD	RXF	Rated 10 ohm, 250 V, 0.5W; tolerance 5%	FPEW2/8	UL, CUL (E359590)
Varistor (VR1)	BESTBRIGHT ELECTRONICS CO LTD	07N391K	Rated minimum MCOV 240 VAC/VDC, MLV max: 4000 Vpk, In min: 400 A	VZCA2/8	UL, CUL (E472693)
Relay (RL1)	PANASONIC CORPORATION	JVN1aF	General use 16 A, 277 Vac, 100k cycles, Tmax 40°C. Incandescent (Tungsten) load, 2 A, 250 Vac, 6000 cycles, Tmax 40°C Insulation System Class A.	NLDX2/8	UL, CUL (E43028)

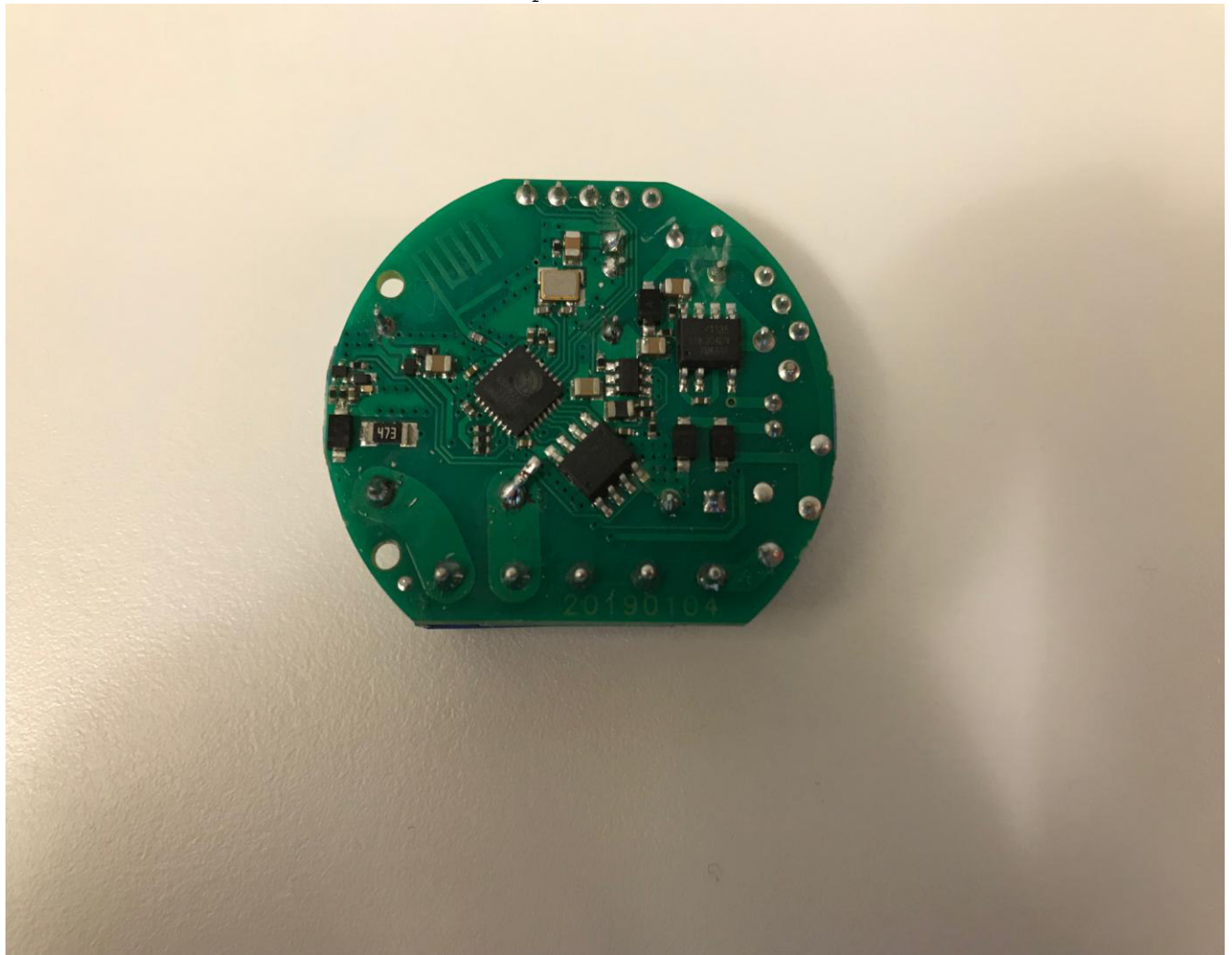
Object/part or Description	Manufacturer/ trademark	Type/model	Technical data	Product Category CCN(s)	Required Marks of Conformity
Model Shelly2					
Housing	SABIC INNOVATIVE PLASTICS B V	CX7240 (GG)	All Color. Rated Flame Class "V-0", at 0.75 mm minimum thickness. HWI 3, HAI 0, CTI 3, RTI 90°C. Dielectric Strength: 22kV/mm, Volume Resistivity: 10 ¹⁶ ohm-cm. Refer to Ill.2 for dimension and shape.	QMFZ2	UL, CUL (E45329)
Main PWB	Interchangeable	Interchangeable	Overall measures 33 by 36 mm and 1.2 mm thick. Ref. to Ill. 3 for component and trace layout Rated as follows 1) suitable for the solder time and temperature used by the manufacturer 2) minimum PTI 175 V (CTI of 3) 3) minimum temperature: 105°C 4) minimum flame rating: 94V-2 5) suitable for direct support of live parts	ZPMV2/8	UL, CUL
Relay PWB	Interchangeable	Interchangeable	Overall measures 12.5 by 36 mm and 1.2 mm thick. Ref. to Ill. 4 for component and trace layout Rated as follows 1) suitable for the solder time and temperature used by the manufacturer 2) minimum PTI 175 V (CTI of 3) 3) minimum temperature: 105°C 4) minimum flame rating: 94V-2 5) suitable for direct support of live parts	ZPMV2/8	UL, CUL
Terminal block (J1)	CIXI WANJIE ELECTRON CO LTD	WJ301-5.0	Rated 250 V, 16 A, 105°C, suitable for field and factory wiring. AWG range 22-14	XCFR2/8	UL, CUL (E251331)
Fusing Resistor (RF1)	DONGGUAN HONGDA ELECTRONIC TECHNOLOGY CO LTD	RXF	Rated 10 ohm, 250 V, 0.5W; tolerance 5%	FPEW2/8	UL, CUL (E359590)
Varistor (VR1)	BESTBRIGHT ELECTRONICS CO LTD	07N391K	Rated minimum MCOV 240 VAC/VDC, MLV max: 4000 Vpk, In min: 400 A	VZCA2/8	UL, CUL (E472693)
Relay (RL1, RL2)	XIAMEN HONGFA ELECTROACOUSTIC CO LTD	HF32FA-G	Resistive load, 10 A, 250 Vac, 15000 cycles, Tmax 85°C. Incandescent (Tungsten) load, 2 A, 250 Vac, 6000 cycles, Tmax 40°C Motor load, 240 Vac, 50/60 Hz, 1/2hp, 6000 cycles, Tmax 40°C Insulation System Class F.	NLDX2/8	UL, CUL (E134517)

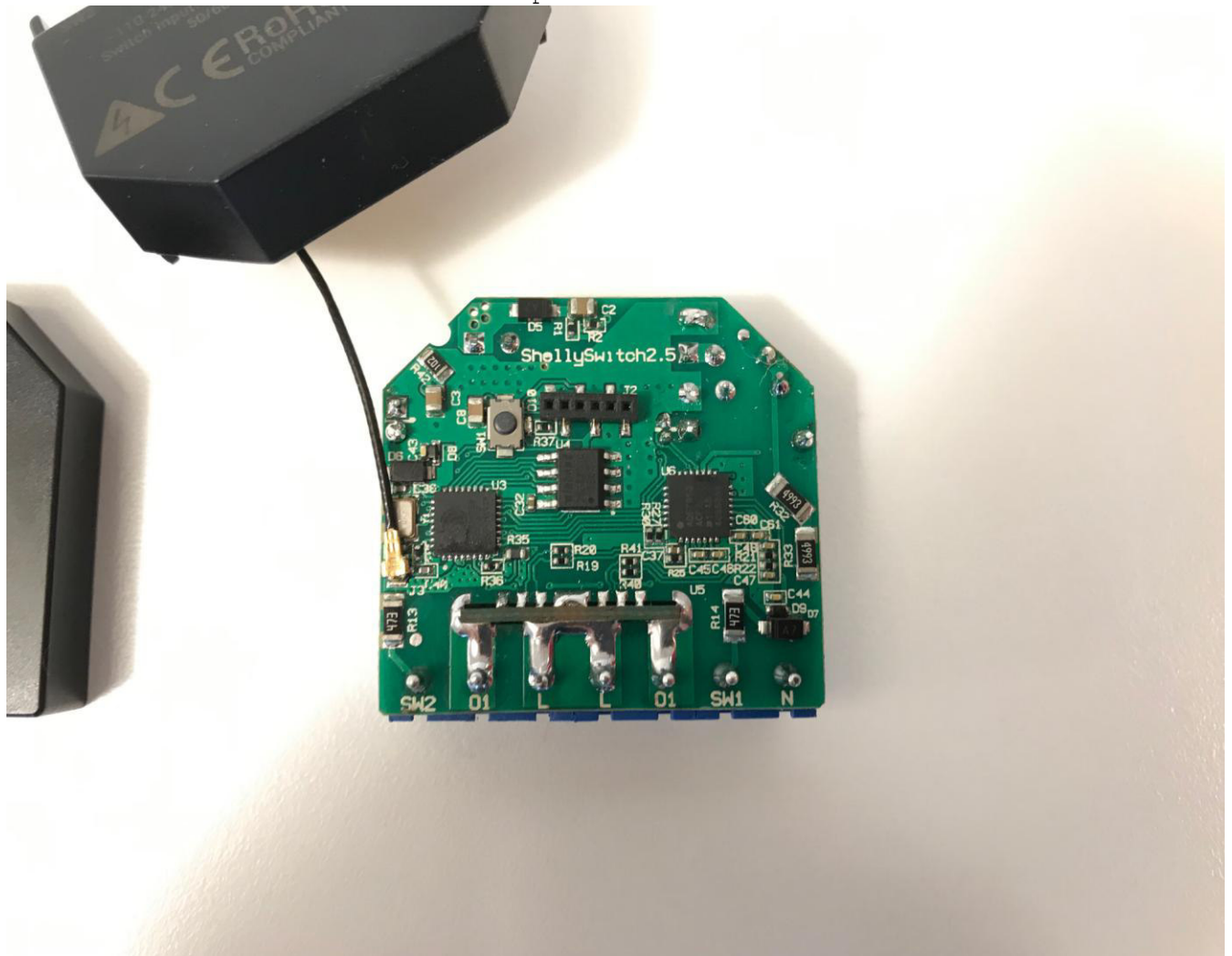


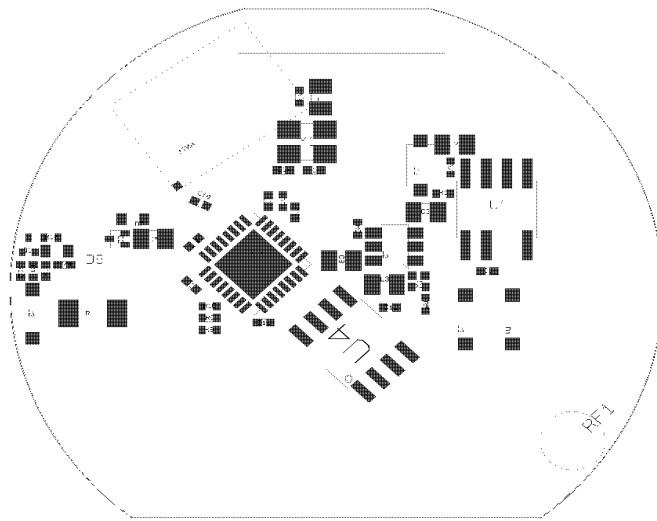




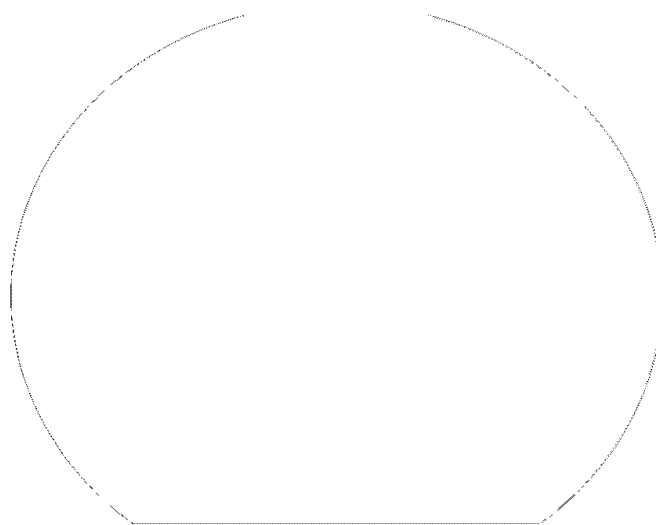


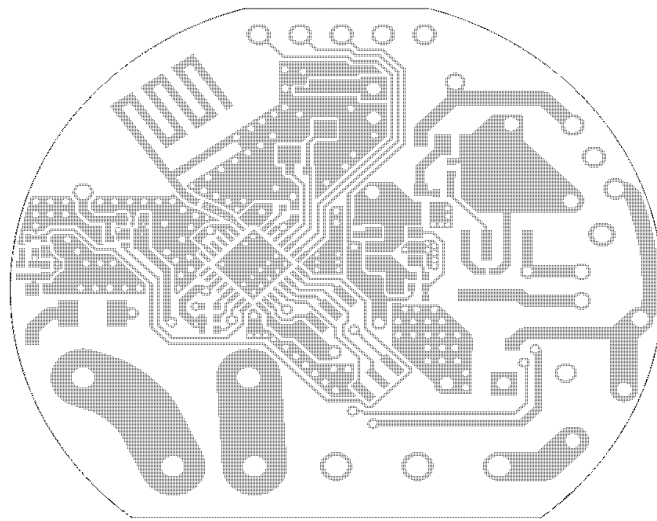




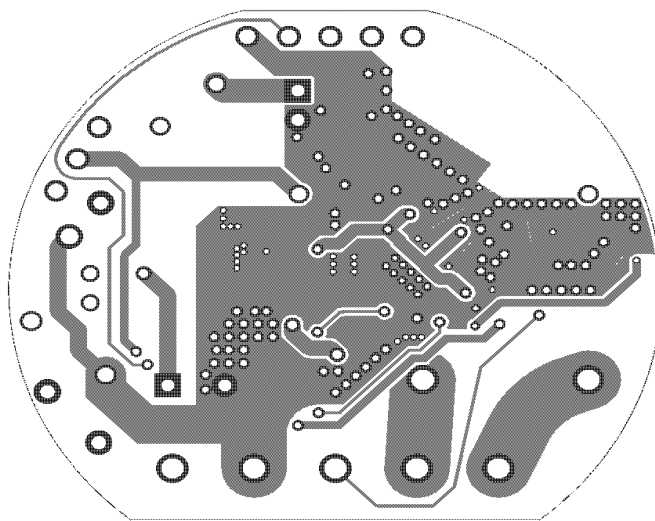


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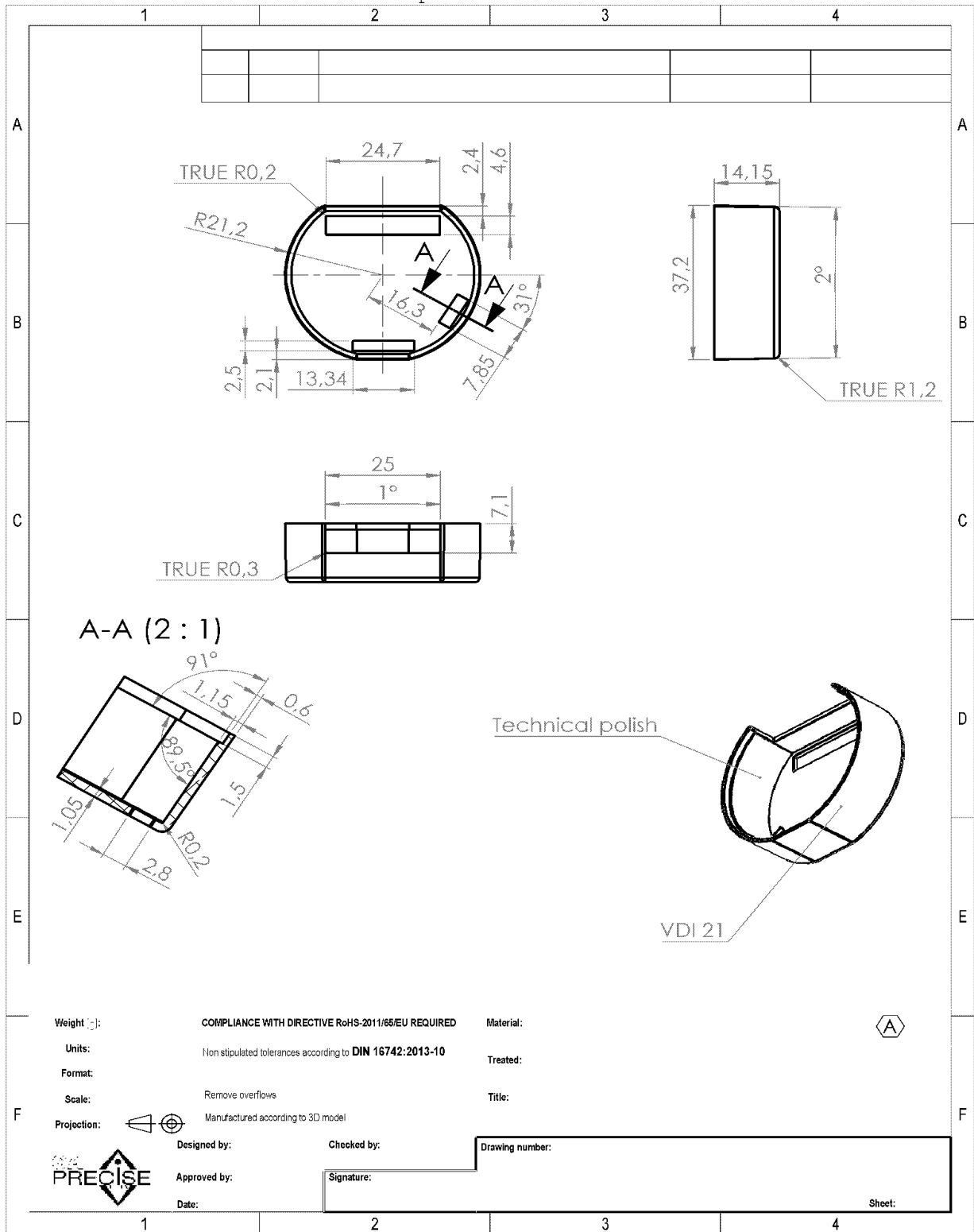


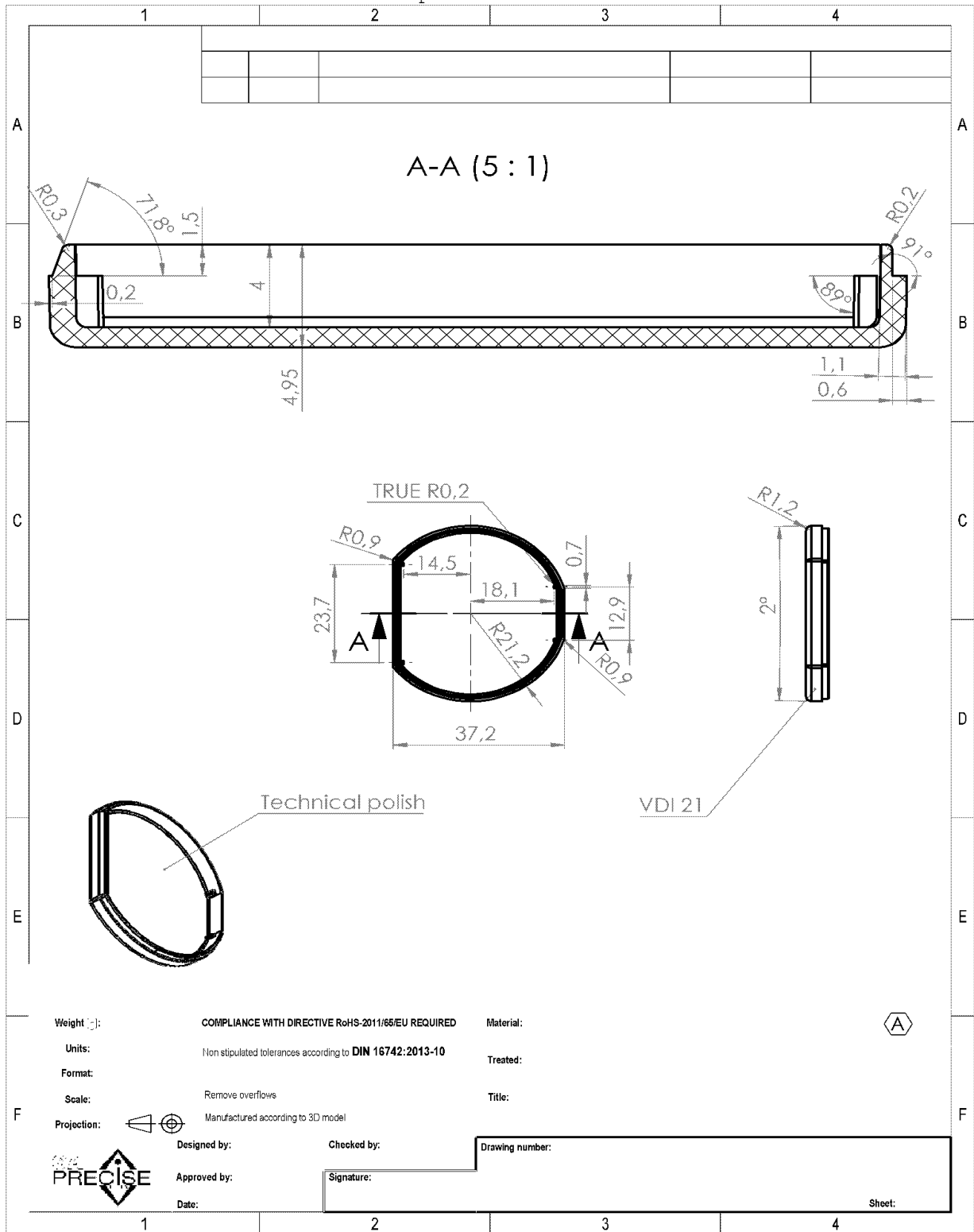


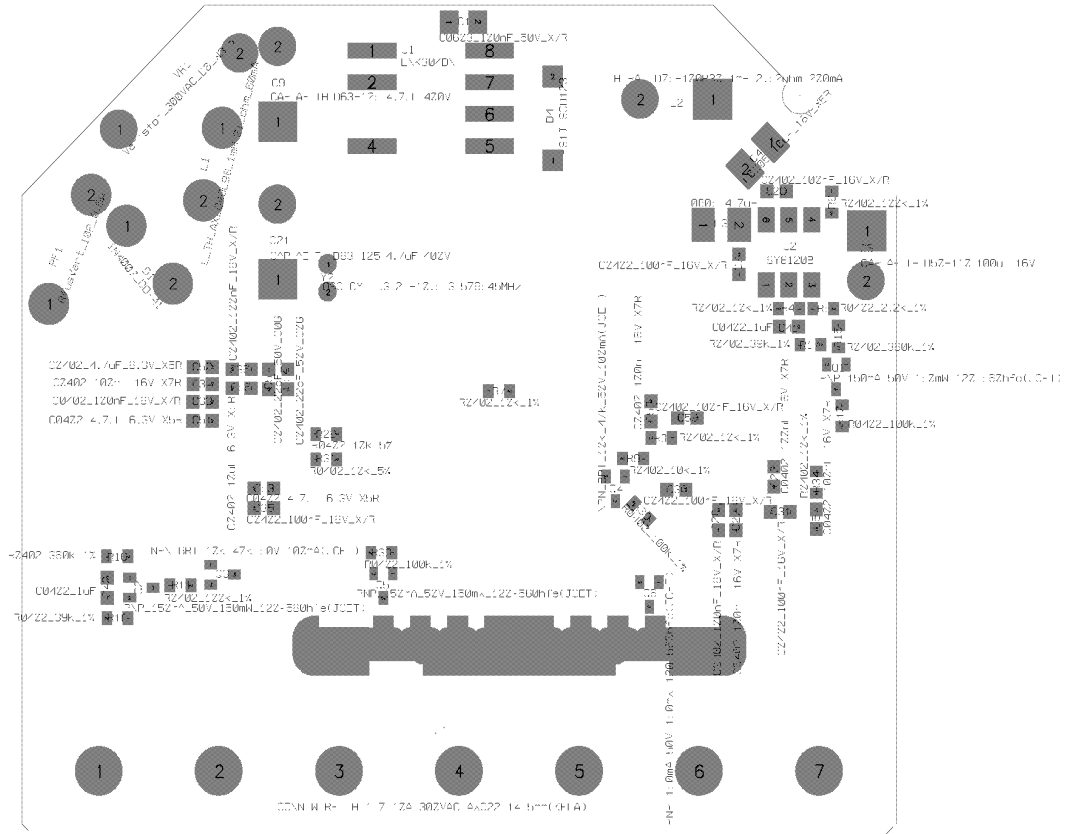
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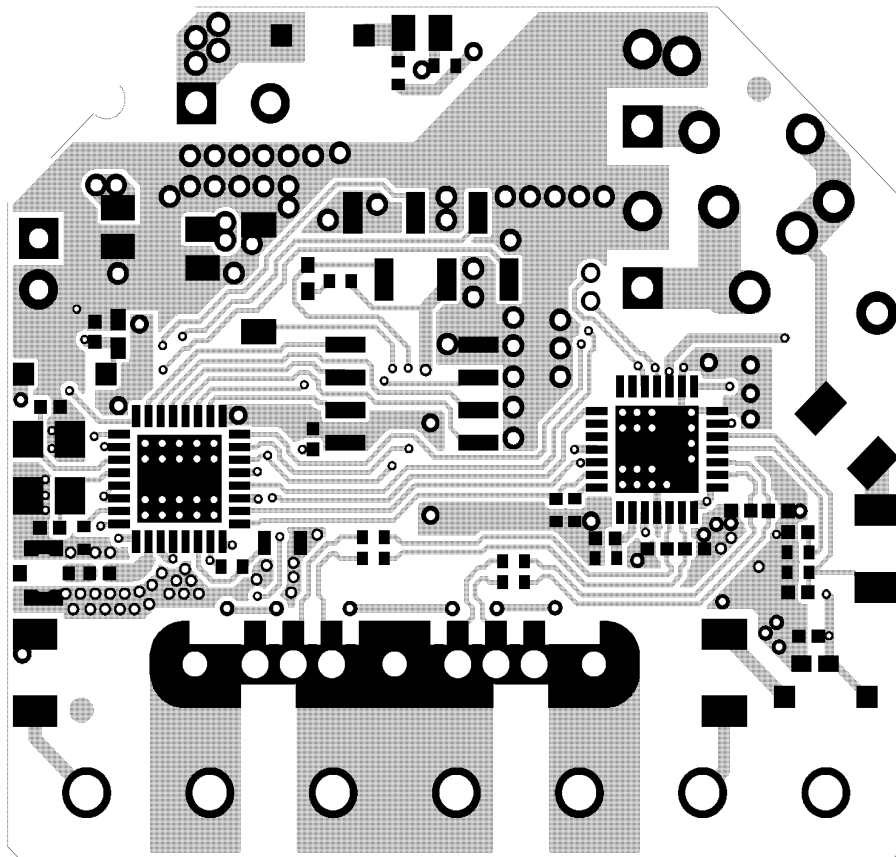


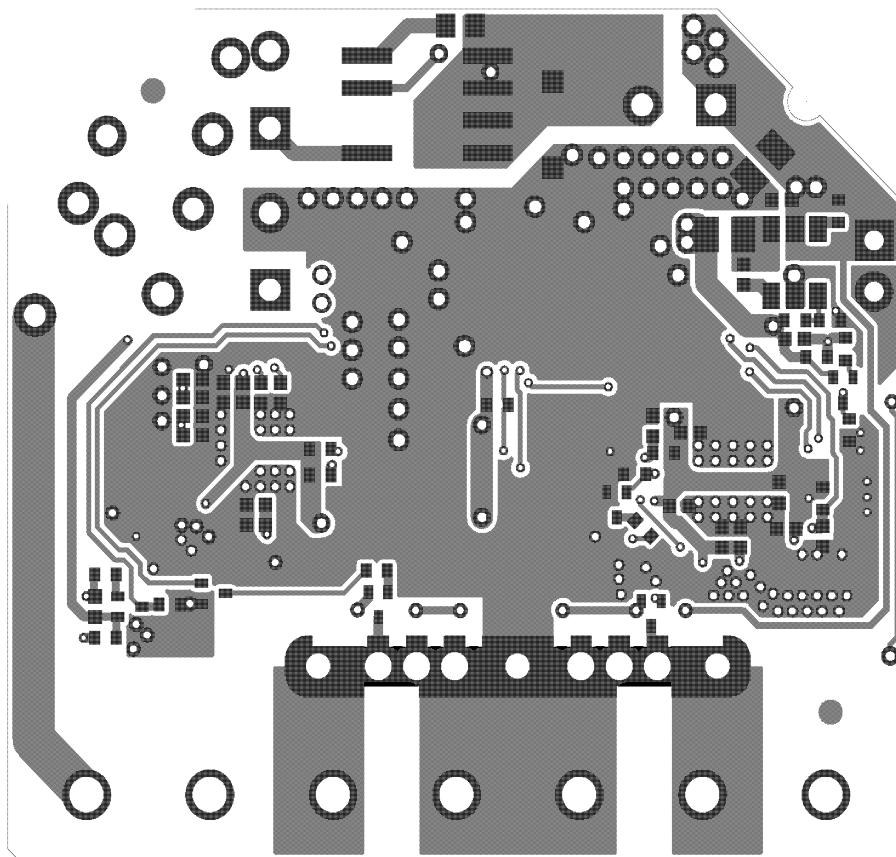
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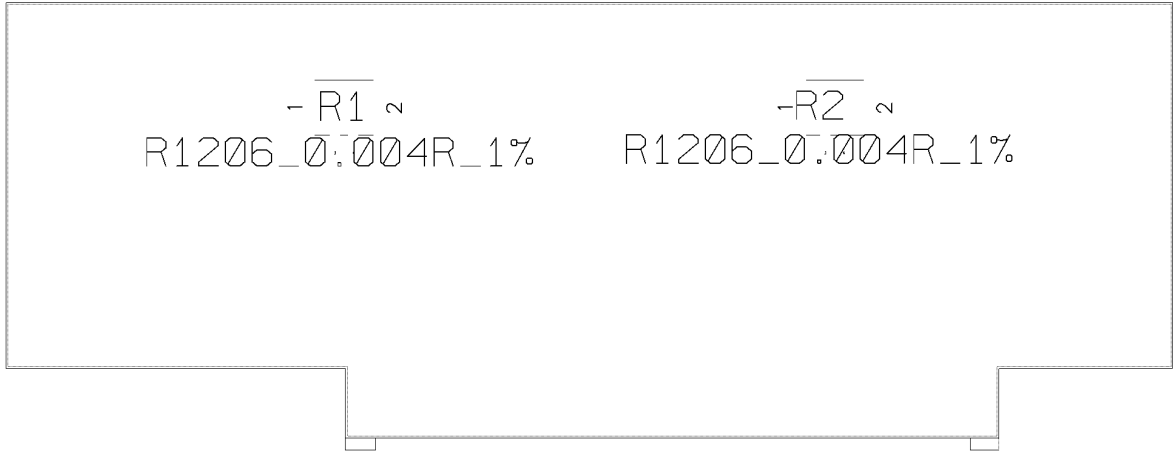


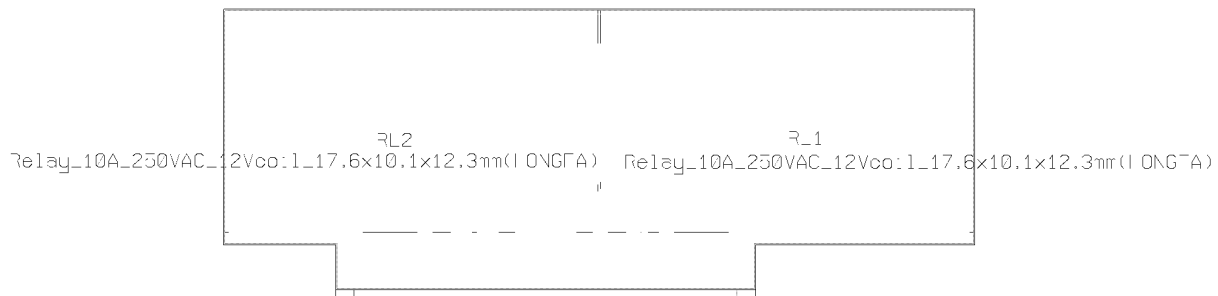


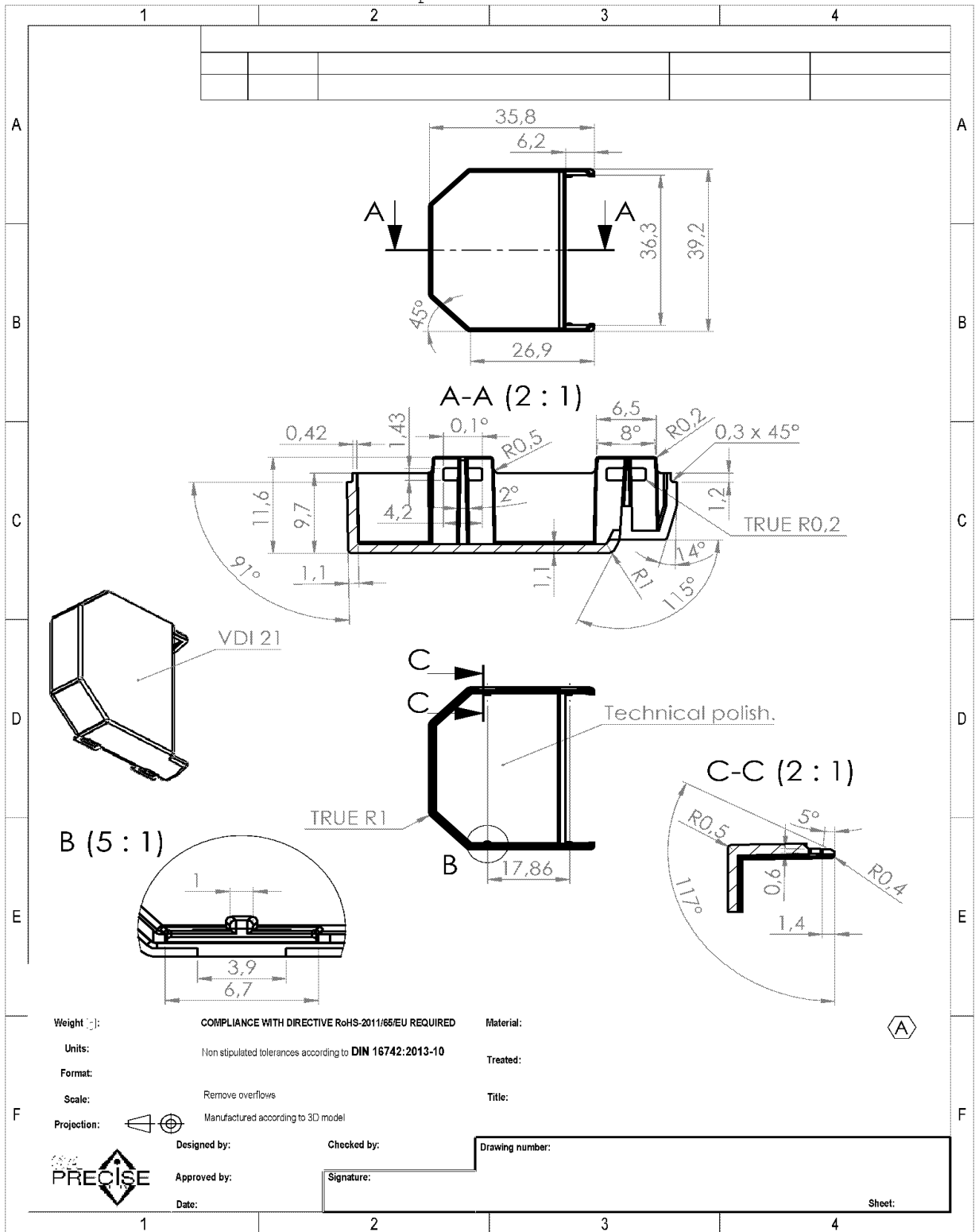












Weight : COMPLIANCE WITH DIRECTIVE RoHS-2011/65/EU REQUIRED

Material:



Units: Non stipulated tolerances according to DIN 16742:2013-10

Treated:

Format:

Remove overflows

Title:

Scale:

Manufactured according to 3D model

F

Projection:



Designed by:

Checked by:

Drawing number:



Approved by:

Signature:

Date:

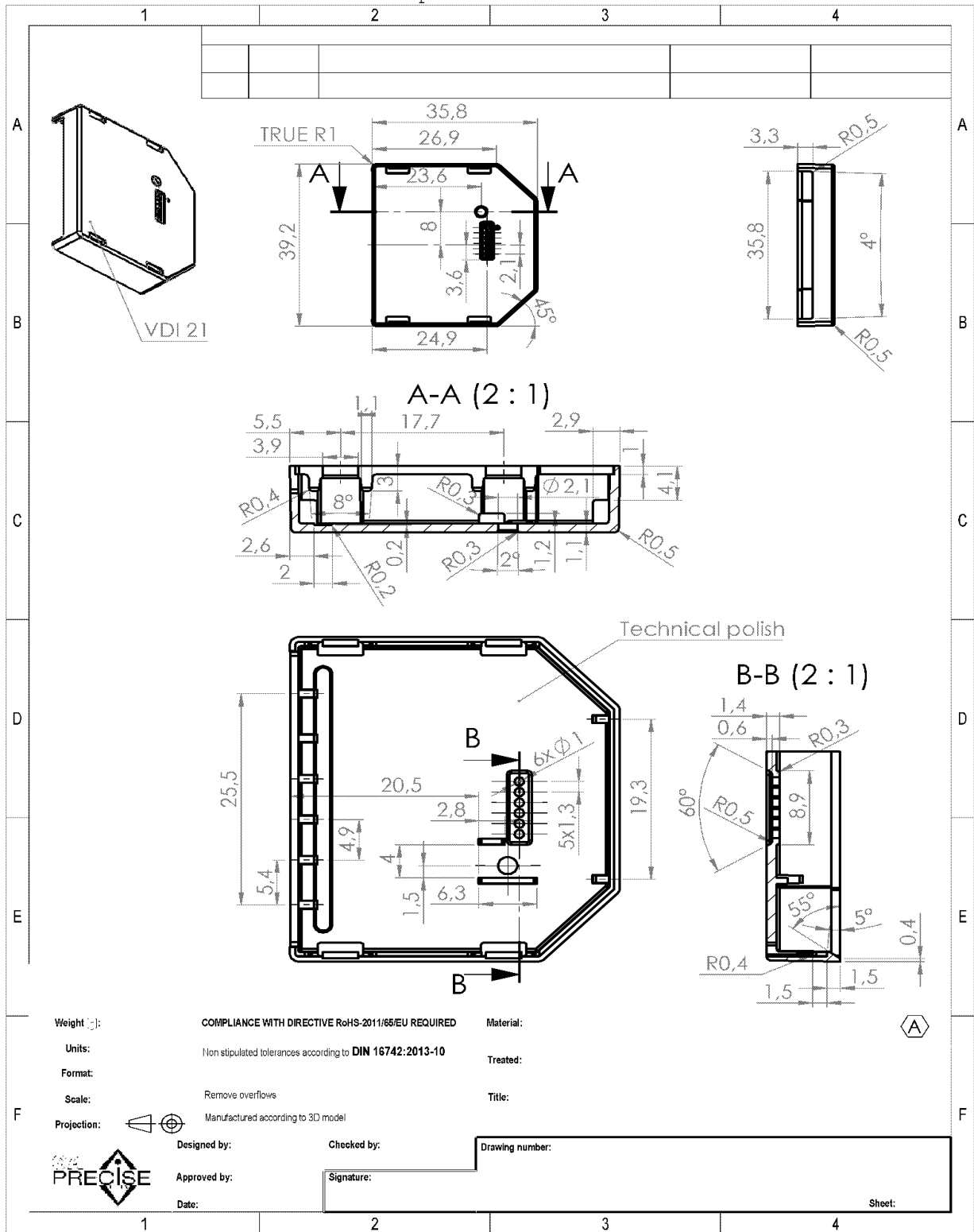
Sheet:

1

2

3

4



TEST RECORD NO. 1

SAMPLES:

Samples of the Operating Controls as indicated below and constructed as described herein, was submitted by the manufacturer for examination and test.

Models Shelly1 and Shelly2.5

GENERAL:

Test results relate only to the items tested.

The following tests were conducted in UL International Italia srl -
Via Delle industrie 6, Carugate, Milano, Italia.

PROTECTION AGAINST HUMID CONDITIONS	UL 60730-1, Clause 12.2
INSULATION RESISTANCE - (IN-LINE CORD, FREE STANDING AND INDEPENDENTLY MOUNTED CONTROLS):	UL 60730-1, Clause 13.1
ELECTRIC STRENGTH TEST	UL 60730-1, Clause 13.2
HEATING TEST	UL 60730-1, Clause 14
ENVIRONMENTAL STRESS OF TEMPERATURE	UL 60730-1, Clause 16.2
ENDURANCE	UL 60730-1, Clause 17
ABNORMAL OPERATION	UL 60730-1, Clause H.27.1
ELECTRONIC CIRCUIT FAULTS:	UL 60730-1, Clause H.27.1
OVERVOLTAGE AND UNDERVOLTAGE TEST	UL 60730-1, Clause 27.3

Refer to TR1-Datasheet-1 for samples identification and test method.

MOLD-STRESS RELIEF DISTORTION	UL 746C, Clause 29.1
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Refer to TR1-Datasheet-2 for samples identification and test method.

SURGE IMMUNITY TEST	UL 60730-1, Clause H.26.8
ELECTRICAL FAST TRANSIENT/BURST IMMUNITY TEST	UL 60730-1, Clause H.26.9
RING WAVE IMMUNITY TEST	UL 60730-1, Clause H.26.10
ELECTRIC STRENGTH TEST	UL 60730-1, Clause 13.2

Refer to TR1-Datasheet-3 for samples identification and test method.

The Indelibility of Markings Test was not considered necessary because markings are permanently molded or silk-screened or laser-etch printed or etched metal or provided on a Recognized Component Marking and Labeling System (PGDQ2/8) or (PGJI2/8) suitable for application to the surface involved.

The Resistance to Corrosion test was not been conducted because all the metal parts used on electronic controller assembly model are protected by plating.

The mentioned tests conducted in accordance with UL 60730-1 was considered representative of the same tests required by Canadian National Standard, CAN/CSA-E60730-1:15.

Refer to TR1-DataSheet-CR1 for the Construction Review.

The test methods and results of the above tests have been reviewed and found in accordance with the requirements in the standards noted below.

Test Record Summary:

The results of this investigation indicate that the products evaluated comply with the applicable requirements and, therefore, such products are judged eligible to bear UL's Mark as described on the Conclusion Page of this Report.

Standard	Title	Edition or Publication Date	Revision Date
UL 60730-1	The Standard for Automatic Electrical Controls for Household and Similar Use	Fifth	August 03, 2016
CAN/CSA-E60730-1:15	The Canadian Standard for Automatic Electrical Controls for Household and Similar Use Amendment 1	Fifth	December 01, 2015 2017

CONCLUSION

Samples of the products covered by this Report have been found to comply with the requirements covering the category and the products are found to comply with UL's applicable requirements. The description and test result in this Report are only applicable to the sample(s) investigated by UL and does not signify UL certification or that the product(s) described are covered under UL's Follow-Up Service Program. When covered under UL's Follow-Up Service Program, the manufacturer is authorized to use the Certification Mark of UL on such products which comply with UL's Follow-Up Service Procedure and any other applicable requirements of UL LLC. The Certification Mark of UL on the product, or the UL symbol on the product and the Certification Mark of UL on the smallest unit container in which the product is packaged, is the only method to identify products investigated by UL to published requirements and manufactured under UL's Classification and Follow-Up Service.

This Report is intended solely for the use of UL LLC (UL) and the Applicant for establishment of UL certification coverage of the described product(s) under UL's Follow-Up Service. UL retains all rights, title and interest (including exclusive ownership) in this Report and all copyright therein. The Applicant or its designated agent shall not disclose or otherwise distribute this Report or its contents to any third party, except as required for purposes of compliance with laws, regulations, or other existing agreements or schemes in which UL is currently a participant. Any other use of this Report including, without limitation, evaluation or certification by a party other than UL is prohibited and renders this Report null and void. UL shall not incur any obligation or liability for any loss, expense, or punitive damages, arising out of, or in connection with, the use or reliance upon the contents of this Report to anyone other than the Applicant as provided in the agreement between UL and Applicant. Any use or reference to UL's name or certification mark(s) by anyone other than the Applicant in accordance with the agreement is prohibited without the express written approval of UL. Any information and documentation involving UL Mark services are provided on behalf of UL LLC (UL) or any authorized licensee of UL. Any information and documentation involving UL Mark services are provided on behalf of UL LLC (UL) or any authorized licensee of UL. UL shall not otherwise be responsible to anyone for the use of or reliance upon the contents of this Report.

Report by:

Reviewed by:

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Engineer
Department: 3000LMIL

Matteo Antomarchi
Engineer Project Associate
Department: 3000LMIL

Giuseppe Lo Gioco
Senior Project Engineer
Department: 3000LMIL

CERTIFICATE OF COMPLIANCE

Certificate Number 20190523-E504925
Report Reference E504925-20190517
Issue Date 2019-MAY-23

Issued to: ALLTERCO ROBOTICS EOOD
103 Cherni vruch bld.
1407 Sofia BULGARIA

This certificate confirms that representative samples of MANAGEMENT EQUIPMENT, ENERGY
Shelly1, Shelly2.5

Have been investigated by UL in accordance with the Standard(s) indicated on this Certificate.

Standard(s) for Safety: UL 60730-1 - The Standard for Automatic Electrical Controls for Household and Similar Use

CAN/CSA-E60730-1:15 - The Canadian Standard for Automatic Electrical Controls for Household and Similar Use
Amendment 1

Additional Information: See the UL Online Certifications Directory at <https://iq.ulprospector.com> for additional information.

This *Certificate of Compliance* does not provide authorization to apply the UL Mark. Only the UL Follow-Up Services Procedure provides authorization to apply the UL Mark.

Only those products bearing the UL Mark should be considered as being UL Certified and covered under UL's Follow-Up Services.

Look for the UL Certification Mark on the product.



Bruce Mahrenholz, Director North American Certification Program

UL LLC

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