

TEST CERTIFICATE

No. : C09 / 40130

Client Delta –T Devices Ltd
130 Low Road,
Burwell,
Cambridge
CB25 0EJ,
UK

Client Contact Mr. Andrew Dutton

Item Conveyor Belt – Control Unit (CB-CU)system

Specification(s) to which above unit/s have been tested All relevant clauses of BS EN 60950-1:2006 and deemed to comply

Date sample(s) received 11 May 2009

Test period 11 May 2009– 29 May 2009

Date of Issue 10 June 2009

Compliance with a Harmonised European Standard also gives the presumption of compliance with the Principal Elements of the Safety Objectives of the Low Voltage Directive 2006/95/EC

Signed



Peter Cross
(Certifying Officer)

Relating to Test Report File(s) 40130
held at Nemko Ltd

To be read in conjunction
with page 2 attached



Form No: QF102-1
Issue No: 1
Issue Date: 03.08.07



Certificate No:	C09/ 40130
Client:	Delta –T Devices Ltd

THIS CERTIFICATE APPLIES ONLY TO THE PARTICULAR SAMPLE UNIT(S) TESTED AND TO THE SPECIFIC TESTS CARRIED OUT AS DETAILED IN THE REPORT FILE HELD AT NEMKO LTD.

THIS TEST CERTIFICATE DOES NOT COVER ELECTROMAGNETIC COMPATIBILITY.




IT SHOULD BE NOTED THAT ONLY A LIMITED NUMBER OF UNITS HAVE BEEN TESTED. IT IS THEREFORE ESSENTIAL FOR THE MANUFACTURER OR SUPPLIER OF THIS PRODUCT TO ENSURE THAT THE QUALITY OF ALL PRODUCTION UNITS IS OF THE SAME STANDARD AS THAT OF THE SAMPLE(S) CHECKED

WHERE FULL TESTING OF APPROVED COMPONENTS HAS NOT BEEN CARRIED OUT AS PART OF THIS REPORT, IT IS THE RESPONSIBILITY OF THE MANUFACTURER OR SUPPLIER TO ENSURE THE COMPONENTS USED IN PRODUCTION UNITS ARE AS THAT OF THE RELATED CERTIFICATES AND SUPPORTING DOCUMENTATION.

Condition of test sample : -	Good	Serial No. : -	CB492008
Notes relating to this certificate : -	None		
Summary of files listed on page 1 : -	40130	Full Test	

***** END OF CERTIFICATE *****



TEST REPORT BSEN 60950-1:2006 Information technology equipment – Safety – Part 1: General requirements	
Report Reference No.	40130
Tested by (printed name and signature)	Kismet Onyeforo 
Approved by (printed name and signature)	K Driscoll 
Date of issue	June 08, 2009
Total number of pages	48
Testing Laboratory Name	 Nemko Ltd Phone: +44 (0) 208 646 8383 Fax: +44 (0) 208 646 8099
Address	15 Chelsea Fields Estate, Western Road, London, SW19 2QA, United Kingdom
Testing location	CBTL <input checked="" type="checkbox"/> CCATL <input type="checkbox"/> SMT <input type="checkbox"/> TMP <input type="checkbox"/>
Applicant's name	Delta –T Devices Ltd
Address	130 Low Road, Burwell, Cambridge CB25 0EJ, UK
Manufacturer's name	Same as Above
Address	Same as Above
Test specification:	
Standard	<input checked="" type="checkbox"/> BS EN 60950-1:2006
Test procedure	CB / CCA
Non-standard test method	N/A
Test Report Form No.	IECEN60950_1C
Test Report Form(s) Originator	SGS Fimko Ltd (Nemko)
Master TRF	Dated 2007-06 (2008 02)
Copyright © 2007 IEC System for Conformity Testing and Certification of Electrical Equipment (IECEE), Geneva, Switzerland. All rights reserved. This publication may be reproduced in whole or in part for non-commercial purposes as long as the IECEE is acknowledged as copyright owner and source of the material. IECEE takes no responsibility for and will not assume liability for damages resulting from the reader's interpretation of the reproduced material due to its placement and context.	
Test item description	Conveyor Belt – Control Unit (CB-CU)system
Trade Mark	ΔT
Manufacturer	Delta –T Devices Ltd
Model/Type reference	CB-CU-250
Ratings	240V AC, 50Hz, 250mA Maximum

This Test Report, when bearing the Nemko name and logo is only valid when issued by a Nemko laboratory, or by a laboratory having special agreement with Nemko.





Report No. 40103


Name and address of production-sites (Factories):

Delta –T Devices Ltd
130 Low Road, Burwell,
Cambridge
CB25 0EJ,
UK

Delta-T Devices Ltd. Fuse Rating 200mA T250V
Input 240V~ 50Hz
250mA Max
Power 10W



Model
CB-CU-250
Rev. 1



Input 240V~ 50Hz
250mA Max
Power 10W

To avoid electric shock the power cord protective grounding conductor must be connected to ground. Refer servicing to qualified personnel.

Rating in the Instruction Manual

Supply voltage: 230V 50Hz AC 250mA MAX
115V 60Hz AC 250mA MAX

Mains input via IEC mains connector.
Fuse rating T200mA 250V

**This appliance must be earthed.
Do not disconnect the safety earth.**



Report No. 40103

Summary of testing:		
Tested according to national requirements for the following countries:		United Kingdom and Ireland only.
Radio and television interference suppression:		The equipment has not been tested for EMC; the product must comply with the relevant standard for the country in which it is sold.
Clause	Information/Remarks	Comments
—	Detachable power supply cord	A detachable power supply cord was not provided with the equipment for evaluation. A detachable power supply cord will be provided that is in accordance with the local requirements of the country where the equipment is to be used.
1.7.12	Language	Instructions and markings shall be in a language acceptable for the country where the equipment is to be used. Only the English Language was assessed.

List of attachments:	
Photos	04 Pages



Report No. 40103

Test item particulars	
Equipment mobility	<input checked="" type="checkbox"/> movable
Connection to the mains	<input checked="" type="checkbox"/> pluggable equipment <input checked="" type="checkbox"/> type A
Operating condition	<input checked="" type="checkbox"/> continuous
Access location	<input checked="" type="checkbox"/> operator accessible
Over voltage category (OVC)	<input checked="" type="checkbox"/> OVC II
Mains supply tolerance (%) or absolute mains supply values	+6% and -10%
Tested for IT power systems	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
IT testing, phase-phase voltage (V)	
Class of equipment	<input checked="" type="checkbox"/> Class I
Considered current rating (A)	13A for the UK and 16A for the rest of Europe
Pollution degree (PD)	<input checked="" type="checkbox"/> PD 2
IP protection class	IP20
Altitude during operation (m)	<2000m
Altitude of test laboratory (m)	<2000m
Mass of equipment (kg)	5.5kg
	Dimensions: 570mmx410mmx 90mm
Possible test case verdicts:	
- test case does not apply to the test object	N/A
- test object does meet the requirement.....	P (Pass)
- test object does not meet the requirement.....	F (Fail)
Testing	
Date of receipt of test item	11/05/2009
Date(s) of performance of tests	12 to 27/05/2009



Report No. 40103

General remarks:

The test results presented in this report relate only to the object tested.
This report shall not be reproduced, except in full, without the written approval of the Issuing testing laboratory.
"(See Enclosure #)" refers to additional information appended to the report.
"(See appended table)" refers to a table appended to the report.

Note: This TRF includes EN Group Differences together with National Differences and Special National Conditions, if any. All Differences are located in the Appendix to the main body of this TRF.

Throughout this report a point is used as the decimal separator.

General product information:

The equipment tested is the Delta-T manufactured Conveyor Belt Unit, model CB-CU-250. It is a synchronous motor driven device, intended for use with a WinDIAS Image Analysing system. It is a desktop equipment which in normal operation, sits on top of a Light Box part of the WinDIAS Image Analysing system. Both the Light Box and the WinDias, were not tested with this submission.

The equipment is designed to carry leaves between transparent surfaces for assessment and measurement in a WinDIAS. At the manufacturer's request, testing was conducted on the Conveyor Belt and the Control Unit attached to it. The maximum drive speed of the geared synchronous motor is 190mm per second. It has an emergency stop switch and forward and Reverse switches.

Circuit characteristics: All circuits of the equipment are considered to be conductively connected to the mains supply.-Primary circuits only.

Connection to the supply: pluggable equipment type A supplied from within the WinDIAS Image Analysing system (Not tested with this submission).

Additional requirements:

Exposure to extreme temperatures, excessive dust, moisture or vibration; to flammable gases; to corrosive or explosive atmospheres:

This equipment is intended to operate in a "normal" environment (Offices and homes).

Maximum recommended ambient (Tmra): 40°C

Electromedical equipment connected to the patient:

This equipment is not an electromedical equipment intended to be physically connected to a patient.

Equipment used in vehicles, ships or aircrafts, in tropical countries, or at elevations > 2000m:

This equipment is intended to operate in a "normal" environment (Offices and homes).



Report No. 40103

1	GENERAL		P
1.5	COMPONENTS		P
1.5.1	General		P
	Comply with IEC 60950-1 or relevant component standard	(see appended table 1.5.1)	P
1.5.2	Evaluation and testing of components	<p>Certified components are used in accordance with their ratings, certifications and they comply with applicable parts of this standard.</p> <p>Components not certified are used in accordance with their ratings and they comply with applicable parts of IEC 60950 and the relevant component standard.</p> <p>Components, for which no relevant IEC-standard exists, have been tested under the conditions occurring in the equipment, using applicable parts of IEC 60950.</p>	P
1.5.3	Thermal controls	No thermal controls.	N
1.5.4	Transformers	No isolating transformer in the equipment.	N
1.5.5	Interconnecting cables	The interconnecting cables do not represent any hazard in the meaning of this standard.	P
1.5.6	Capacitors bridging insulation	X1 capacitors according to IEC 60384-14: 1993. Functional insulation only	P
1.5.7	Resistors bridging insulation	No resistors bridging double or reinforced insulation	N
1.5.7.1	Resistors bridging functional, basic or supplementary insulation	Resistor across Live –Neutral After Input fuse.	N
1.5.7.2	Resistors bridging double or reinforced insulation between a.c. mains and other circuits	No resistors bridging double or reinforced insulation	N
1.5.7.3	Resistors bridging double or reinforced insulation between a.c. mains and antenna or coaxial cable	No resistors bridging double or reinforced insulation	N
1.5.8	Components in equipment for IT power systems	No components connected between line and earth.	N
1.5.9	Surge suppressors	No Surge Suppressors in the equipment	N



Report No. 40103

1.5.9.1	General	No Surge Suppressors in the equipment	N
1.5.9.2	Protection of VDRs	No Surge Suppressors in the equipment	N
1.5.9.3	Bridging of functional insulation by a VDR	No Surge Suppressors in the equipment	N
1.5.9.4	Bridging of basic insulation by a VDR	No Surge Suppressors in the equipment	N
1.5.9.5	Bridging of supplementary, double or reinforced insulation by a VDR	No Surge Suppressors in the equipment	N

1.6	POWER INTERFACE		P
1.6.1	AC power distribution systems	TN	P
1.6.2	Input current	(see appended table 1.6.2)	P
1.6.3	Voltage limit of hand-held equipment	The equipment is not hand-held.	N
1.6.4	Neutral conductor	Neutral is insulated from earth with basic insulation throughout the equipment.	P

1.7	MARKING AND INSTRUCTIONS		P
1.7.1	Power rating	The required marking is readily visible in Operator access area, located on the outside surface of the equipment.	P
	Rated voltage(s) or voltage range(s) (V)	240V	P
	Symbol for nature of supply, for d.c. only.....	The equipment is for a.c. supply.	N
	Rated frequency or rated frequency range (Hz) ...:	50Hz	P
	Rated current (mA or A)	250mA	P
	Manufacturer's name or trade-mark or identification mark	Delta –T	P
	Model identification or type reference	CB-CU 250	P
	Symbol for Class II equipment only	The equipment is Class I.	N
	Other markings and symbols	The additional marking does not give rise to misunderstandings.	P
1.7.2	Safety instructions and marking	Adequate Information for installing, operating and disconnecting the equipment is provided in the user manual.	P
1.7.2.1	General		P



Report No. 40103

1.7.2.2	Disconnect devices	The mains plug /Appliance coupler is the means of primary power disconnection. Appropriate information is provided.	P
1.7.2.3	Overcurrent protective device	Pluggable type A equipment	N
1.7.2.4	IT power distribution systems	Not considered for IT power distribution system.	N
1.7.2.5	Operator access with a tool	All areas containing hazard(s) are inaccessible to the operator.	N
1.7.2.6	Ozone	Equipment does not product Ozone	N
1.7.3	Short duty cycles	The equipment is intended for continuous operation.	N
1.7.4	Supply voltage adjustment	No voltage selector.	N
	Methods and means of adjustment; reference to installation instructions		N
1.7.5	Power outlets on the equipment	No standard power outlet	N
1.7.6	Fuse identification (marking, special fusing characteristics, cross-reference)	Operator replace fuse located on the Control Unit and markings: T200mA, 250V.	P
1.7.7	Wiring terminals	Refer below:	P
1.7.7.1	Protective earthing and bonding terminals	Terminal for connection of protective earthing conductor is marked with standard earth symbol (IEC 60417-2 No. 5019) near the terminal.	P
1.7.7.2	Terminals for a.c. mains supply conductors	The equipment is not permanently connected or provided with a non-detachable power supply cord.	N
1.7.7.3	Terminals for d.c. mains supply conductors	AC equipment.	N
1.7.8	Controls and indicators	Refer below:	P
1.7.8.1	Identification, location and marking	The function of controls affecting safety is obvious without knowledge of language etc.	P
1.7.8.2	Colours	No indicators with colours where safety is involved.	N



Report No. 40103

1.7.8.3	Symbols according to IEC 60417.....:	The emergency stop button is a push switch and is marked with the correct symbol (IEC 60417-1 No. 5010(DB: 2002-10)). This switch is not relied upon as a disconnect device (appliance inlet used)	P
1.7.8.4	Markings using figures	No controls use figures.	N
1.7.9	Isolation of multiple power sources	Only one connection supplying hazardous voltages and energy levels to the equipment.	N
1.7.10	Thermostats and other regulating devices	No thermostats or other regulating devices.	N
1.7.11	Durability	The marking withstands required tests	P
1.7.12	Removable parts	No marking is placed on removable parts	P
1.7.13	Replaceable batteries	No battery in the equipment.	N
	Language(s)	The English Language Instructions and markings are used.	—
1.7.14	Equipment for restricted access locations	Equipment not intended for installation in RAL.	N

2	PROTECTION FROM HAZARDS		P
2.1	Protection from electric shock and energy hazards		P
2.1.1	Protection in operator access areas	Refer below:	P
2.1.1.1	Access to energized parts	There is adequate protection against operator contact with bare parts at hazardous voltage or parts separated from these with basic or functional insulation only (except protective earth), also after operator detachable parts are removed. No hazardous voltages exceeding 1000V a.c. or 1500V d.c. Checked by Inspection, test finger and test pin.	P
	Test by inspection		P
	Test with test finger (Figure 2A)		P
	Test with test pin (Figure 2B)		P
	Test with test probe (Figure 2C)		N



Report No. 40103

2.1.1.2	Battery compartments	No TNV circuits in the equipment.	N
2.1.1.3	Access to ELV wiring	No ELV.	N
	Working voltage (V _{peak} or V _{rms}); minimum distance through insulation (mm)		—
2.1.1.4	Access to hazardous voltage circuit wiring	All accessible parts are separated from internal wiring at hazardous voltage by double or reinforced insulation, complying with 2.10.5 and 3.1.4.	P
2.1.1.5	Energy hazards	No energy hazard in operator access area. Checked by means of the test finger.	N
2.1.1.6	Manual controls	No shafts of knobs etc. at ELV or hazardous voltage	N
2.1.1.7	Discharge of capacitors in equipment	The capacitance of the input circuit is > 0,1µF with the mains switch in both "ON" and "OFF" position, measurements are performed	P
	Measured voltage (V); time-constant (s).....	42V Max 18ms. The time constant is < 1 sec. measured with the switch in both "ON" and "OFF" position, see the measurements below Time-constant 18ms	—
2.1.1.8	Energy hazards – d.c. mains supply	:	N
	a) Capacitor connected to the d.c. mains supply ...		N
	b) Internal battery connected to the d.c. mains supply		N
2.1.1.9	Audio amplifiers		N
2.1.2	Protection in service access areas		
2.1.3	Protection in restricted access locations		

2.2	SELV CIRCUITS		N
2.2.1	General requirements	No SELV circuits in the equipment.	N
2.2.2	Voltages under normal conditions (V)		N
2.2.3	Voltages under fault conditions (V)		N
2.2.4	Connection of SELV circuits to other circuits		N



Report No. 40103

2.3	TNV CIRCUITS		N
2.3.1	Limits	Refer below	N
	Type of TNV circuits	No TNV circuits in the equipment.	—
2.3.2	Separation from other circuits and from accessible parts		N
2.3.2.1	General requirements		N
2.3.2.2	Protection by basic insulation		N
2.3.2.3	Protection by earthing		N
2.3.2.4	Protection by other constructions		N
2.3.3	Separation from hazardous voltages		N
	Insulation employed		—
2.3.4	Connection of TNV circuits to other circuits		N
	Insulation employed		—
2.3.5	Test for operating voltages generated externally		N

2.4	LIMITED CURRENT CIRCUITS		N
2.4.1	General requirements	No Limited Current circuits	N
2.4.2	Limit values		N
	Frequency (Hz).....		—
	Measured current (mA)		—
	Measured voltage (V).....		—
	Measured circuit capacitance (nF or µF)		—
2.4.3	Connection of limited current circuits to other circuits		N

2.5	LIMITED POWER SOURCES		N
	a) Inherently limited output	No Limited Power Source in the equipment.	N
	b) Impedance limited output		N
	c) Regulating network limited output under normal operating and single fault condition		N
	d) Overcurrent protective device limited output		N
	Max. output voltage (V), max. output current (A), max. apparent power (VA)		—
	Current rating of overcurrent protective device (A) ..		—



Report No. 40103

2.6	PROVISIONS FOR EARTHING AND BONDING		P
2.6.1	Protective earthing	Accessible conductive parts are reliably connected to protective earth. Must also be checked when supplied from the WinDIAS Image system.	P
2.6.2	Functional earthing	No Functional earthing in the equipment.	N
2.6.3	Protective earthing and protective bonding conductors	Refer below:	P
2.6.3.1	General	Refer below:	N
2.6.3.2	Size of protective earthing conductors	Power supply cord not supplied with the equipment.	N
	Rated current (A), cross-sectional area (mm ²), AWG		—
2.6.3.3	Size of protective bonding conductors	Refer below:	P
	Rated current (A), cross-sectional area (mm ²), AWG	Rated current of the circuit under test: 16A. Cross sectional area: 1.25mm ²	—
	Protective current rating (A), cross-sectional area (mm ²), AWG	20	P
2.6.3.4	Resistance of earthing conductors and their terminations; resistance (Ω), voltage drop (V), test current (A), duration (min)	From the appliance inlet to the chassis: U = 0.038V ⇒ 1.3mΩ at 30A for 2 minutes	P
2.6.3.5	Colour of insulation	All insulated protective earth conductors are coloured green and yellow	P
2.6.4	Terminals	Refer below:	P
2.6.4.1	General	Refer below:	P
2.6.4.2	Protective earthing and bonding terminals	Refer below:	N
	Rated current (A), type, nominal thread diameter (mm)	Rated current of equipment: 250mA. Type: The equipment is provided with an appliance inlet	—
2.6.4.3	Separation of the protective earthing conductor from protective bonding conductors	The equipment is provided with an appliance inlet	N
2.6.5	Integrity of protective earthing	Refer below:	P
2.6.5.1	Interconnection of equipment	Interconnection of the equipment must be assessed in final installation.	—



Report No. 40103

2.6.5.2	Components in protective earthing conductors and protective bonding conductors	There are no switches or overcurrent protective devices in the protective earthing / bonding conductors.	P
2.6.5.3	Disconnection of protective earth	It is not possible to disconnect protective earth without disconnecting mains; an appliance coupler is used as disconnect device	P
2.6.5.4	Parts that can be removed by an operator	No operator removable parts except supply cord.	
2.6.5.5	Parts removed during servicing	The Earth connection on the motor frame is appropriately marked as removal of this part could impair safety.	P
2.6.5.6	Corrosion resistance	No risk of corrosion. Checked in accordance to Annex J	P
2.6.5.7	Screws for protective bonding	Adequate connection of protective bonding.	P
2.6.5.8	Reliance on telecommunication network or cable distribution system	Not for TNV Circuits or cable distribution system.	P

2.7	OVERCURRENT AND EARTH FAULT PROTECTION IN PRIMARY CIRCUITS		P
2.7.1	Basic requirements	Protective device is integrated in the equipment, see also Sub-clause 5.3.	P
	Instructions when protection relies on building installation		P
2.7.2	Faults not simulated in 5.3.7		N
2.7.3	Short-circuit backup protection	Adequate protective device.	P
2.7.4	Number and location of protective devices	Not assessed for connection to IT power system	N
2.7.5	Protection by several devices	One protective device provided in line conductor	P
2.7.6	Warning to service personnel.....		N

2.8	SAFETY INTERLOCKS		N
2.8.1	General principles	No interlock	N
2.8.2	Protection requirements		N
2.8.3	Inadvertent reactivation		N
2.8.4	Fail-safe operation		N



Report No. 40103

2.8.5	Moving parts	No hazardous moving parts	N
2.8.6	Overriding		N
2.8.7	Switches and relays		N
2.8.7.1	Contact gaps (mm)		N
2.8.7.2	Overload test		N
2.8.7.3	Endurance test		N
2.8.7.4	Electric strength test		N
2.8.8	Mechanical actuators		N

2.9	ELECTRICAL INSULATION		P
2.9.1	Properties of insulating materials	Neither natural rubber, materials containing asbestos nor hygroscopic materials are used as insulation. Driving belts or couplings are not relied upon to ensure electrical insulation.	P
2.9.2	Humidity conditioning	No hygroscopic materials used.	P
	Relative humidity (%), temperature (°C)		—
2.9.3	Grade of insulation		P
2.9.4	Separation from hazardous voltages	Insulation is considered to be functional, basic, supplementary, reinforced or double insulation.	P
	Method(s) used		—

2.10	CLEARANCES, CREEPAGE DISTANCES AND DISTANCES THROUGH INSULATION		
2.10.1	General	See below.	P
2.10.1.1	Frequency	Considered.	P
2.10.1.2	Pollution degrees	Pollution Degree 2.	P
2.10.1.3	Reduced values for functional insulation	The functional insulation complied with clause 5.3.4.	P
2.10.1.4	Intervening unconnected conductive parts	Considered.	—
2.10.1.5	Insulation with varying dimensions	No such transformer used.	N
2.10.1.6	Special separation requirements	No special separation used.	N
2.10.1.7	Insulation in circuits generating starting pulses	No insulation in circuit generating starting pulses.	N
2.10.2	Determination of working voltage	(See appended table 2.10.2)	P
2.10.2.1	General	Refer below:	P



Report No. 40103

2.10.2.2	RMS working voltage	(see appended table 2.10.2)	P
2.10.2.3	Peak working voltage	(see appended table 2.10.2)	P
2.10.3	Clearances	(see appended table 2.10.3 and 2.10.4)	P
2.10.3.1	General	Refer below:	—
2.10.3.2	Mains transient voltages	Refer below:	—
	a) AC mains supply	Measurement not relevant.	N
	b) Earthed d.c. mains supplies	AC mains supply	N
	c) Unearthed d.c. mains supplies	AC mains supply	N
	d) Battery operation	AC mains supply	N
2.10.3.3	Clearances in primary circuits	(see appended table 2.10.3 and 2.10.4)	P
2.10.3.4	Clearances in secondary circuits	No secondary circuits in the equipment	N
2.10.3.5	Clearances in circuits having starting pulses	The circuit does not generate starting pulse.	N
2.10.3.6	Transients from a.c. mains supply	Considered.	P
2.10.3.7	Transients from d.c. mains supply	Not connected to d.c mains supply.	N
2.10.3.8	Transients from telecommunication networks and cable distribution systems	Not connected to telecommunication networks or cable distribution systems.	N
2.10.3.9	Measurement of transient voltage levels	See below.	—
	a) Transients from a mains supply	Measurement not relevant.	N
	For an a.c. mains supply		N
	For a d.c. mains supply		N
	b) Transients from a telecommunication network :	Not connected to telecommunication networks.	N
2.10.4	Creepage distances	See below.	P
2.10.4.1	General	Considered.	P
2.10.4.2	Material group and comparative tracking index	Material group IIIb is assumed.	—
	CTI tests		—
2.10.4.3	Minimum creepage distances	(see appended table 2.10.3 and 2.10.4)	P
2.10.5	Solid insulation	See below.	—
2.10.5.1	General	Considered.	N
2.10.5.2	Distances through insulation		N
2.10.5.3	Insulating compound as solid insulation	No such construction used.	N



Report No. 40103

2.10.5.4	Semiconductor devices	No Semiconductor devices	N
2.10.5.5.	Cemented joints	Not used.	N
2.10.5.6	Thin sheet material – General	No thin sheet insulation used	N
2.10.5.7	Separable thin sheet material		N
	Number of layers (pcs).....:		—
2.10.5.8	Non-separable thin sheet material	Not used.	N
2.10.5.9	Thin sheet material – standard test procedure	The sub-clause 2.10.5.10 is used.	N
	Electric strength test		—
2.10.5.10	Thin sheet material – alternative test procedure		N
	Electric strength test		—
2.10.5.11	Insulation in wound components	Not used.	N
2.10.5.12	Wire in wound components	Not used.	N
	Working voltage		N
	a) Basic insulation not under stress		N
	b) Basic, supplementary, reinforced insulation		N
	c) Compliance with Annex U		N
	Two wires in contact inside wound component; angle between 45° and 90°		N
2.10.5.13	Wire with solvent-based enamel in wound components	No wire with solvent-based enamel in wound components.	N
	Electric strength test		—
	Routine test		N
2.10.5.14	Additional insulation in wound components	No additional insulation used	N
	Working voltage		N
	- Basic insulation not under stress		N
	- Supplementary, reinforced insulation		N
2.10.6	Construction of printed boards	See below.	—
2.10.6.1	Uncoated printed boards	No PCB is used in the equipment.	N
2.10.6.2	Coated printed boards	No PCB used	N
2.10.6.3	Insulation between conductors on the same inner surface of a printed board		N
2.10.6.4	Insulation between conductors on different layers of a printed board		N
	Distance through insulation		N
	Number of insulation layers (pcs).....:		N



Report No. 40103

2.10.7	Component external terminations	Coatings not used over terminations to increase effective creepage and clearance distances.	N
2.10.8	Tests on coated printed boards and coated components	No PCB used	N
2.10.8.1	Sample preparation and preliminary inspection		N
2.10.8.2	Thermal conditioning		N
2.10.8.3	Electric strength test		N
2.10.8.4	Abrasion resistance test		N
2.10.9	Thermal cycling		N
2.10.10	Test for Pollution Degree 1 environment and insulating compound		P
2.10.11	Tests for semiconductor devices and cemented joints	No such device used.	N
2.10.12	Enclosed and sealed parts		N

3	WIRING, CONNECTIONS AND SUPPLY		P
3.1	General		P
3.1.1	Current rating and overcurrent protection	Adequate cross sectional areas on internal wiring.	P
3.1.2	Protection against mechanical damage	Wireways are smooth and free from sharp edges. Wires are adequately fixed to prevent excessive strain on wire and terminals, and damage to the insulation of conductors.	P
3.1.3	Securing of internal wiring	Internal wiring is secured against excessive strain, loosening of terminals, and damage to the insulation of conductors.	P
3.1.4	Insulation of conductors	Insulation on internal conductors is considered to be of adequate quality and suitable for the application and working voltages involved	P
3.1.5	Beads and ceramic insulators		N



Report No. 40103

3.1.6	Screws for electrical contact pressure	Electrical screw connections are only for protective earth connections. Metal screws engage more than two threads. Screws made of insulating material are not used where electrical connections including protective earthing are involved.	P
3.1.7	Insulating materials in electrical connections	No contact pressure through insulating material.	P
3.1.8	Self-tapping and spaced thread screws	Self tapping or space thread screws not used for electrical connections.	N
3.1.9	Termination of conductors		P
	10 N pull test	Test performed on Mains conductor terminating in the Control Unit	P
3.1.10	Sleeving on wiring	Sleeving on wiring is not used as supplementary insulation.	N

3.2	CONNECTION TO A MAINS SUPPLY		P
3.2.1	Means of connection	Appliance coupler.	P
3.2.1.1	Connection to an a.c. mains supply	The product is provided with an appliance inlet.	P
3.2.1.2	Connection to a d.c. mains supply		N
3.2.2	Multiple supply connections	Only one supply connection.	N
3.2.3	Permanently connected equipment	The product is not intended for permanent connection to the mains supply.	N
	Number of conductors, diameter of cable and conduits (mm)		—
3.2.4	Appliance inlets	The appliance inlet is certified to IEC 60320.	P
3.2.5	Power supply cords		N
3.2.5.1	AC power supply cords	Detachable power supply cord not provided with equipment for evaluation, refer to summary of testing.	N
	Type		—
	Rated current (A), cross-sectional area (mm ²), AWG		—
3.2.5.2	DC power supply cords		N



Report No. 40103

3.2.6	Cord anchorages and strain relief	Equipment provided with an appliance inlet.	N
	Mass of equipment (kg), pull (N)		—
	Longitudinal displacement (mm)		—
3.2.7	Protection against mechanical damage	Product provided with an appliance inlet.	N
3.2.8	Cord guards	Product provided with an appliance inlet.	N
	Diameter or minor dimension D (mm); test mass (g)		—
	Radius of curvature of cord (mm).....		—
3.2.9	Supply wiring space	Product provided with an appliance inlet.	N

3.3	WIRING TERMINALS FOR CONNECTION OF EXTERNAL CONDUCTORS		N
3.3.1	Wiring terminals	Product provided with an appliance inlet.	N
3.3.2	Connection of non-detachable power supply cords	Product provided with an appliance inlet.	N
3.3.3	Screw terminals		N
3.3.4	Conductor sizes to be connected		N
	Rated current (A), cord/cable type, cross-sectional area (mm ²).....		—
3.3.5	Wiring terminal sizes		N
	Rated current (A), type, nominal thread diameter (mm)		—
3.3.6	Wiring terminal design		N
3.3.7	Grouping of wiring terminals		N
3.3.8	Stranded wire		N

3.4	DISCONNECTION FROM THE MAINS SUPPLY		
3.4.1	General requirement	See sub-clause 3.4.2.	P
3.4.2	Disconnect devices	Product provided with an appliance inlet.	P
3.4.3	Permanently connected equipment	Not permanently connected equipment.	N
3.4.4	Parts which remain energized	No parts remain energised after removal of the appliance coupler.	P
3.4.5	Switches in flexible cords	No switches in flexible cords.	P



Report No. 40103

3.4.6	Number of poles - single-phase and d.c. equipment	Removing the appliance coupler disconnects both poles simultaneously.	P
3.4.7	Number of poles - three-phase equipment	Single phase equipment.	N
3.4.8	Switches as disconnect devices	The appliance coupler is considered to be the disconnect device.	N
3.4.9	Plugs as disconnect devices	The appliance coupler is regarded as the disconnect device, no warning is required.	N
3.4.10	Interconnected equipment	Must be checked in installation.	N
3.4.11	Multiple power sources	One power source only.	N

3.5	INTERCONNECTION OF EQUIPMENT		N
3.5.1	General requirements	No interconnections	N
3.5.2	Types of interconnection circuits	No interconnections	N
3.5.3	ELV circuits as interconnection circuits		N
3.5.4	Data ports for additional equipment		N

4	PHYSICAL REQUIREMENTS		P
4.1	Stability		P
	Angle of 10°		P
	Test force (N)	The unit has mass of 5.5kg	N

4.2	MECHANICAL STRENGTH		P
4.2.1	General	Complies with the requirement also after tests described below are applied.	P
4.2.2	Steady force test, 10 N	No hazard	P
4.2.3	Steady force test, 30 N	Internal enclosure of CU.	P
4.2.4	Steady force test, 250 N	No hazard. The test is performed at 250N	P
4.2.5	Impact test		P
	Fall test	Desk -Top equipment 5.5kg	P
	Swing test	No hazard resulting from the steel sphere swing test.	P
4.2.6	Drop test; height (mm)	Drop test not applicable.	N



Report No. 40103

4.2.7	Stress relief test	Metal Construction	N
4.2.8	Cathode ray tubes	CRT(s) not used in the equipment.	N
	Picture tube separately certified		N
4.2.9	High pressure lamps	No high pressure lamps in the equipment.	N
4.2.10	Wall or ceiling mounted equipment; force (N)		N

4.3	DESIGN AND CONSTRUCTION		P
4.3.1	Edges and corners	All edges and corners are rounded and/or smoothed.	P
4.3.2	Handles and manual controls; force (N)	No knobs, grips, handles, lever etc.	N
4.3.3	Adjustable controls	No hazardous adjustable controls.	N
4.3.4	Securing of parts	No loosening of parts impairing creepage distances or clearances is likely to occur.	P
4.3.5	Connection by plugs and sockets	Connectors are not used in a manner that could impair safety.	P
4.3.6	Direct plug-in equipment	Not direct plug-in equipment.	N
	Torque		—
	Compliance with the relevant mains plug standard		N
4.3.7	Heating elements in earthed equipment	No heating elements provided.	N
4.3.8	Batteries	No batteries in the equipment	N
	- Overcharging of a rechargeable battery		N
	- Unintentional charging of a non-rechargeable battery		N
	- Reverse charging of a rechargeable battery		N
	- Excessive discharging rate for any battery		N
4.3.9	Oil and grease		N
4.3.10	Dust, powders, liquids and gases		N
4.3.11	Containers for liquids or gases		N
4.3.12	Flammable liquids	The equipment does not contain flammable liquid.	N
	Quantity of liquid (l)		N
	Flash point (°C)		N



Report No. 40103

4.3.13	Radiation	Refer below:	N
4.3.13.1	General	Refer below:	N
4.3.13.2	Ionizing radiation	The equipment does not generate ionizing radiation.	N
	Measured radiation (pA/kg)		—
	Measured high-voltage (kV)		—
	Measured focus voltage (kV)		—
	CRT markings		—
4.3.13.3	Effect of ultraviolet (UV) radiation on materials		N
	Part, property, retention after test, flammability classification		N
4.3.13.4	Human exposure to ultraviolet (UV) radiation		N
4.3.13.5	Laser (including LEDs)		N
	Laser class		—
4.3.13.6	Other types		N

4.4	PROTECTION AGAINST HAZARDOUS MOVING PARTS		P
4.4.1	General	Moving parts are not considered to be hazardous	P
4.4.2	Protection in operator access areas		N
4.4.3	Protection in restricted access locations		N
4.4.4	Protection in service access areas		P

4.5	THERMAL REQUIREMENTS		P
4.5.1	General	See below.	P
4.5.2	Temperature tests	(See appended table 4.5)	P
	Normal load condition per Annex L		—
4.5.3	Temperature limits for materials	(see appended table 4.5)	P
4.5.4	Touch temperature limits	(see appended table 4.5)	P
4.5.5	Resistance to abnormal heat	(see appended table 4.5.5)	P

4.6	OPENINGS IN ENCLOSURES		P
4.6.1	Top and side openings	No openings on all sides of the Conveyor Control Unit and Motor casing.	P



Report No. 40103

	Dimensions (mm)		—
4.6.2	Bottoms of fire enclosures	No bottom openings.	N
	Construction of the bottom, dimensions (mm) ...:		—
4.6.3	Doors or covers in fire enclosures		N
4.6.4	Openings in transportable equipment	The unit is not regarded as transportable equipment.	N
4.6.4.1	Constructional design measures		P
	Dimensions (mm)		—
4.6.4.2	Evaluation measures for larger openings	No larger openings in the equipment.	N
4.6.4.3	Use of metallized parts		N
4.6.5	Adhesives for constructional purposes	No barrier secured by adhesive inside enclosure.	N
	Conditioning temperature (°C), time (weeks).....:		—

4.7	RESISTANCE TO FIRE		P
4.7.1	Reducing the risk of ignition and spread of flame	Method 1 is used.	P
	Method 1, selection and application of components wiring and materials	(see appended table 4.7)	P
	Method 2, application of all of simulated fault condition tests		N
4.7.2	Conditions for a fire enclosure	Refer below:	P
4.7.2.1	Parts requiring a fire enclosure	The fire enclosure is required to cover all parts.	P
4.7.2.2	Parts not requiring a fire enclosure	Motor and insulated cables, connectors	P
4.7.3	Materials		P
4.7.3.1	General	Components and materials have adequate flammability classification. See appended table 1.5.1.	P
4.7.3.2	Materials for fire enclosures	The fire enclosure is metal.	P
4.7.3.3	Materials for components and other parts outside fire enclosures	No parts outside the fire enclosure.	P
4.7.3.4	Materials for components and other parts inside fire enclosures	Other materials inside fire enclosure are minimum V-2 material.	P
4.7.3.5	Materials for air filter assemblies	No air filters in the equipment.	N
4.7.3.6	Materials used in high-voltage components	No parts exceeding 4kV.	N



Report No. 40103

5	ELECTRICAL REQUIREMENTS AND SIMULATED ABNORMAL CONDITIONS		P
5.1	Touch current and protective conductor current		P
5.1.1	General	Test conducted in accordance with 5.1.2 to 5.1.7.	P
5.1.2	Configuration of equipment under test (EUT)	No interconnection of equipment or multiple power sources.	P
5.1.2.1	Single connection to an a.c. mains supply	No multiple connections to an a.c. mains supply	P
5.1.2.2	Redundant multiple connections to an a.c. mains supply	No multiple connections to an a.c. mains supply	N
5.1.2.3	Simultaneous multiple connections to an a.c. mains supply	No multiple connections to an a.c. mains supply	N
5.1.3	Test circuit	Tested for connection to TN or TT power distribution system	P
5.1.4	Application of measuring instrument	Measuring instrument D1 is used.	P
5.1.5	Test procedure	Considered.	P
5.1.6	Test measurements	Considered.	P
	Supply voltage (V)	254V	—
	Measured touch current (mA)	55µA	—
	Max. allowed touch current (mA)	3.5mA	—
	Measured protective conductor current (mA)		—
	Max. allowed protective conductor current (mA).....		—
5.1.7	Equipment with touch current exceeding 3,5 mA	The touch current does not exceed 3.5mA.	N
5.1.7.1	General		N
5.1.7.2	Simultaneous multiple connections to the supply		N
5.1.8	Touch currents to telecommunication networks and cable distribution systems and from telecommunication networks	Not connected to a telecommunication network nor a cable distribution system.	N
5.1.8.1	Limitation of the touch current to a telecommunication network or to a cable distribution system		N
	Supply voltage (V)		—
	Measured touch current (mA)		—
	Max. allowed touch current (mA)		—
5.1.8.2	Summation of touch currents from telecommunication networks		N
	a) EUT with earthed telecommunication ports		N
	b) EUT whose telecommunication ports have no reference to protective earth		N



Report No. 40103

5.2	ELECTRIC STRENGTH		P
5.2.1	General	(see appended table 5.2)	P
5.2.2	Test procedure		P

5.3	ABNORMAL OPERATING AND FAULT CONDITIONS		P
5.3.1	Protection against overload and abnormal operation	(see appended table 5.3)	P
5.3.2	Motors	(see appended Annex B)	P
5.3.3	Transformers	No Transformer in the equipment	N
5.3.4	Functional insulation.....:		N
5.3.5	Electromechanical components		N
5.3.6	Audio amplifiers in ITE		N
5.3.7	Simulation of faults		P
5.3.8	Unattended equipment		N
5.3.9	Compliance criteria for abnormal operating and fault conditions		P
5.3.9.1	During the tests		P
5.3.9.2	After the tests		P

6	CONNECTION TO TELECOMMUNICATION NETWORKS		N
6.1	Protection of telecommunication network service persons, and users of other equipment connected to the network, from hazards in the equipment		N
6.1.1	Protection from hazardous voltages		N
6.1.2	Separation of the telecommunication network from earth		N
6.1.2.1	Requirements	No connection to TNV circuits	N
	Supply voltage (V)		—
	Current in the test circuit (mA)		—
6.1.2.2	Exclusions		N

6.2	PROTECTION OF TELECOMMUNICATION NETWORK SERVICE PERSONS, AND USERS OF OTHER EQUIPMENT CONNECTED TO THE NETWORK, FROM HAZARDS IN THE EQUIPMENT		N
6.2.1	Separation requirements	No connection to TNV circuits	N
6.2.2	Electric strength test procedure		N
6.2.2.1	Impulse test		N
6.2.2.2	Steady-state test		N



Report No. 40103

6.2.2.3	Compliance criteria		N
6.3	Protection of the telecommunication wiring system from overheating		N
	Max. output current (A)	No connection to TNV circuits	—
	Current limiting method		—

7	CONNECTION TO CABLE DISTRIBUTION SYSTEMS		N
7.1	General	No connection to Cable Distribution Systems.	N
7.2	Protection of cable distribution system service persons, and users of other equipment connected to the system, from hazardous voltages in the equipment		N
7.3	Protection of equipment users from overvoltages on the cable distribution system		N
7.4	Insulation between primary circuits and cable distribution systems		N
7.4.1	General		N
7.4.2	Voltage surge test		N
7.4.3	Impulse test		N



Report No. 40103

A	ANNEX A, TESTS FOR RESISTANCE TO HEAT AND FIRE		N
B	ANNEX B, MOTOR TESTS UNDER ABNORMAL CONDITIONS (see 4.7.2.2 and 5.3.2)		P
B.1	General requirements		P
	Position	Main Drive Motor	—
	Manufacturer	Portescap	—
	Type	MV86111-P5, AC synchronous motor	—
	Rated values	220V AC, 50Hz 32mA. Phase shift capacitor 0.22µF.	—
B.2	Test conditions	Bench Test	P
B.3	Maximum temperatures	(see appended table 5.3)	P
B.4	Running overload test	(see appended table 5.3)	P
B.5	Locked-rotor overload test		P
	Test duration (days)	15days	—
	Electric strength test: test voltage (V)	1500VAC	—
B.6	Running overload test for d.c. motors in secondary circuits	No DC motors	N
B.6.1	General		N
B.6.2	Test procedure		N
B.6.3	Alternative test procedure		N
B.6.4	Electric strength test; test voltage (V)		N
B.7	Locked-rotor overload test for d.c. motors in secondary circuits	No DC motors	N
B.7.1	General		N
B.7.2	Test procedure		N
B.7.3	Alternative test procedure		N
B.7.4	Electric strength test; test voltage (V)		N
B.8	Test for motors with capacitors	(see appended table 5.3)	P
B.9	Test for three-phase motors		N
B.10	Test for series motors		N
	Operating voltage (V)		—



Report No. 40103

C	ANNEX C, TRANSFORMERS (see 1.5.4 and 5.3.3)	N
D	ANNEX D, MEASURING INSTRUMENTS FOR TOUCH-CURRENT TESTS (see 5.1.4)	P
D.1	Measuring instrument	P
D.2	Alternative measuring instrument	N
E	ANNEX E, TEMPERATURE RISE OF A WINDING (see 1.4.13)	N
F	ANNEX F, MEASUREMENT OF CLEARANCES AND CREEPAGE DISTANCES (see 2.10 and Annex G)	P
G	ANNEX G, ALTERNATIVE METHOD FOR DETERMINING MINIMUM CLEARANCES	N
H	ANNEX H, IONIZING RADIATION (see 4.3.13)	N
J	ANNEX J, TABLE OF ELECTROCHEMICAL POTENTIALS (see 2.6.5.6)	P
	Metal(s) used	—
K	ANNEX K, THERMAL CONTROLS (see 1.5.3 and 5.3.8)	N
L	ANNEX L, NORMAL LOAD CONDITIONS FOR SOME TYPES OF ELECTRICAL BUSINESS EQUIPMENT (see 1.2.2.1 and 4.5.2)	P
M	ANNEX M, CRITERIA FOR TELEPHONE RINGING SIGNALS (see 2.3.1)	N
N	ANNEX N, IMPULSE TEST GENERATORS (see 1.5.7.2, 1.5.7.3, 2.10.3.9, 6.2.2.1, 7.3.2, 7.4.3 and Clause G.5)	N
P	ANNEX P, NORMATIVE REFERENCES	—
Q	ANNEX Q, Voltage dependent resistors (VDRs) (see 1.5.9.1)	N
R	ANNEX R, EXAMPLES OF REQUIREMENTS FOR QUALITY CONTROL PROGRAMMES	N



Report No. 40103

S	ANNEX S, PROCEDURE FOR IMPULSE TESTING (see 6.2.2.3)		N
T	ANNEX T, GUIDANCE ON PROTECTION AGAINST INGRESS OF WATER (see 1.1.2)		N
U	ANNEX U, INSULATED WINDING WIRES FOR USE WITHOUT INTERLEAVED INSULATION (see 2.10.5.4)		N
V	ANNEX V, AC POWER DISTRIBUTION SYSTEMS (see 1.6.1)		P
V.1	Introduction	Considered.	P
V.2	TN power distribution systems	Considered.	P
W	ANNEX W, SUMMATION OF TOUCH CURRENTS		N
W.1	Touch current from electronic circuits	No TNV circuits	N
X	ANNEX X, MAXIMUM HEATING EFFECT IN TRANSFORMER TESTS (see clause C.1)		N
X.1	Determination of maximum input current	No Transformer is used	N
Y	ANNEX Y, ULTRAVIOLET LIGHT CONDITIONING TEST (see 4.3.13.3)		N
Y.1	Test apparatus		N
Y.2	Mounting of test samples		N
Y.3	Carbon-arc light-exposure apparatus		N
Y.4	Xenon-arc light exposure apparatus		N
Z	ANNEX Z, OVERVOLTAGE CATEGORIES (see 2.10.3.2 and Clause G.2)		P
AA	ANNEX AA, MANDREL TEST (see 2.10.5.8)		N
BB	ANNEX BB, CHANGES IN THE SECOND EDITION		—
EN 60950-1:2006 – CENELEC COMMON MODIFICATIONS			
Contents	Add the following annexes: Annex ZA (normative) Normative references to international publications with their corresponding European publications Annex ZB (normative) Special national conditions Annex ZC (informative) A-deviations		—



Report No. 40103

General	<p>Delete all the “country” notes in the reference document according to the following list:</p> <table border="0"> <tr> <td>1.4.8</td><td>Note 2</td> <td>1.5.1</td><td>Note 2 & 3</td> <td>1.5.7.1</td><td>Note</td> </tr> <tr> <td>1.5.8</td><td>Note 2</td> <td>1.5.9.4</td><td>Note</td> <td>1.7.2.1</td><td>Note 4, 5 & 6</td> </tr> <tr> <td>2.2.3</td><td>Note</td> <td>2.2.4</td><td>Note</td> <td>2.3.2</td><td>Note</td> </tr> <tr> <td>2.3.2.1</td><td>Note 2</td> <td>2.3.4</td><td>Note 2</td> <td>2.6.3.3</td><td>Note 2 & 3</td> </tr> <tr> <td>2.7.1</td><td>Note</td> <td>2.10.3.2</td><td>Note 2</td> <td>2.10.5.13</td><td>Note 3</td> </tr> <tr> <td>3.2.1.1</td><td>Note</td> <td>3.2.4</td><td>Note 3.</td> <td>2.5.1</td><td>Note 2</td> </tr> <tr> <td>4.3.6</td><td>Note 1 & 2</td> <td>4.7</td><td>Note 4</td> <td>4.7.2.2</td><td>Note</td> </tr> <tr> <td>4.7.3.1</td><td>Note 2</td> <td>5.1.7.1</td><td>Note 3 & 4</td> <td>5.3.7</td><td>Note 1</td> </tr> <tr> <td>6</td><td>Note 2 & 5</td> <td>6.1.2.1</td><td>Note 2</td> <td>6.1.2.2</td><td>Note</td> </tr> <tr> <td>6.2.2</td><td>Note 6.</td> <td>2.2.1</td><td>Note 2</td> <td>6.2.2.2</td><td>Note</td> </tr> <tr> <td>7.1</td><td>Note 3</td> <td>7.2</td><td>Note</td> <td>7.3</td><td>Note 1 & 2</td> </tr> <tr> <td>G.2.1</td><td>Note 2</td> <td>Annex H</td><td>Note 2</td> <td></td><td></td> </tr> </table>	1.4.8	Note 2	1.5.1	Note 2 & 3	1.5.7.1	Note	1.5.8	Note 2	1.5.9.4	Note	1.7.2.1	Note 4, 5 & 6	2.2.3	Note	2.2.4	Note	2.3.2	Note	2.3.2.1	Note 2	2.3.4	Note 2	2.6.3.3	Note 2 & 3	2.7.1	Note	2.10.3.2	Note 2	2.10.5.13	Note 3	3.2.1.1	Note	3.2.4	Note 3.	2.5.1	Note 2	4.3.6	Note 1 & 2	4.7	Note 4	4.7.2.2	Note	4.7.3.1	Note 2	5.1.7.1	Note 3 & 4	5.3.7	Note 1	6	Note 2 & 5	6.1.2.1	Note 2	6.1.2.2	Note	6.2.2	Note 6.	2.2.1	Note 2	6.2.2.2	Note	7.1	Note 3	7.2	Note	7.3	Note 1 & 2	G.2.1	Note 2	Annex H	Note 2			P
1.4.8	Note 2	1.5.1	Note 2 & 3	1.5.7.1	Note																																																																					
1.5.8	Note 2	1.5.9.4	Note	1.7.2.1	Note 4, 5 & 6																																																																					
2.2.3	Note	2.2.4	Note	2.3.2	Note																																																																					
2.3.2.1	Note 2	2.3.4	Note 2	2.6.3.3	Note 2 & 3																																																																					
2.7.1	Note	2.10.3.2	Note 2	2.10.5.13	Note 3																																																																					
3.2.1.1	Note	3.2.4	Note 3.	2.5.1	Note 2																																																																					
4.3.6	Note 1 & 2	4.7	Note 4	4.7.2.2	Note																																																																					
4.7.3.1	Note 2	5.1.7.1	Note 3 & 4	5.3.7	Note 1																																																																					
6	Note 2 & 5	6.1.2.1	Note 2	6.1.2.2	Note																																																																					
6.2.2	Note 6.	2.2.1	Note 2	6.2.2.2	Note																																																																					
7.1	Note 3	7.2	Note	7.3	Note 1 & 2																																																																					
G.2.1	Note 2	Annex H	Note 2																																																																							
1.3.Z1	<p>Add the following subclause:</p> <p>1.3.Z1 Exposure to excessive sound pressure</p> <p>The apparatus shall be so designed and constructed as to present no danger when used for its intended purpose, either in normal operating conditions or under fault conditions, particularly providing protection against exposure to excessive sound pressures from headphones or earphones.</p> <p>NOTE Z1 A new method of measurement is described in EN 50332-1, Sound system equipment: Headphones and earphones associated with portable audio equipment - Maximum sound pressure level measurement methodology and limit considerations - Part 1: General method for “one package equipment”, and in EN 50332-2, Sound system equipment: Headphones and earphones associated with portable audio equipment - Maximum sound pressure level measurement methodology and limit considerations - Part 2: Guidelines to associate sets with headphones coming from different manufacturers.</p>	N																																																																								
1.5.1	<p>Add the following NOTE:</p> <p>NOTE Z1 The use of certain substances in electrical and electronic equipment is restricted within the EU: see Directive 2002/95/EC</p>	—																																																																								
1.7.2.1	<p>Add the following NOTE:</p> <p>NOTE Z1 In addition, the instructions shall include, as far as applicable, a warning that excessive sound pressure from earphones and headphones can cause hearing loss</p>	N																																																																								



Report No. 40103

2.7.1	<p>Replace the subclause as follows:</p> <p>Basic requirements</p> <p>To protect against excessive current, short-circuits and earth faults in PRIMARY CIRCUITS, protective devices shall be included either as integral parts of the equipment or as parts of the building installation, subject to the following, a), b) and c):</p> <p>a) except as detailed in b) and c), protective devices necessary to comply with the requirements of 5.3 shall be included as parts of the equipment;</p> <p>b) for components in series with the mains input to the equipment such as the supply cord, appliance coupler, r.f.i. filter and switch, short-circuit and earth fault protection may be provided by protective devices in the building installation;</p> <p>c) it is permitted for PLUGGABLE EQUIPMENT TYPE B or PERMANENTLY CONNECTED EQUIPMENT, to rely on dedicated overcurrent and short-circuit protection in the building installation, provided that the means of protection, e.g. fuses or circuit breakers, is fully specified in the installation instructions.</p> <p>If reliance is placed on protection in the building installation, the installation instructions shall so state, except that for PLUGGABLE EQUIPMENT TYPE A the building installation shall be regarded as providing protection in accordance with the rating of the wall socket outlet.</p>	P												
2.7.2	This subclause has been declared 'void'.	—												
3.2.3	Delete the NOTE in Table 3A, and delete also in this table the conduit sizes in parentheses.	N												
3.2.5.1	<p>Replace "60245 IEC 53" by "H05 RR-F"; "60227 IEC 52" by "H03 VV-F or H03 VVH2-F"; "60227 IEC 53" by "H05 VV-F or H05 VVH2-F2".</p> <p>In Table 3B, replace the first four lines by the following:</p> <table border="1" data-bbox="309 1317 1197 1413"> <tr> <td>Up to and including 6</td> <td></td> <td>0,75^{a)}</td> <td></td> </tr> <tr> <td>Over 6 up to and including 10</td> <td>(0,75)^{b)}</td> <td>1,0</td> <td></td> </tr> <tr> <td>Over 10 up to and including 16</td> <td>(1,0)^{c)}</td> <td>1,5</td> <td></td> </tr> </table> <p>In the conditions applicable to Table 3B delete the words "in some countries" in condition^{a)}.</p> <p>In NOTE 1, applicable to Table 3B, delete the second sentence.</p>	Up to and including 6		0,75 ^{a)}		Over 6 up to and including 10	(0,75) ^{b)}	1,0		Over 10 up to and including 16	(1,0) ^{c)}	1,5		P
Up to and including 6		0,75 ^{a)}												
Over 6 up to and including 10	(0,75) ^{b)}	1,0												
Over 10 up to and including 16	(1,0) ^{c)}	1,5												
3.3.4	<p>In Table 3D, delete the fourth line: conductor sizes for 10 to 13 A, and replace with the following:</p> <table border="1" data-bbox="309 1619 1197 1653"> <tr> <td>Over 10 up to and including 16</td> <td>1,5 to 2,5</td> <td>1,5 to 4</td> </tr> </table> <p>Delete the fifth line: conductor sizes for 13 to 16 A.</p>	Over 10 up to and including 16	1,5 to 2,5	1,5 to 4	N									
Over 10 up to and including 16	1,5 to 2,5	1,5 to 4												
4.3.13.6	<p>Add the following NOTE:</p> <p>NOTE Z1 Attention is drawn to 1999/519/EC: Council Recommendation on the limitation of exposure of the general public to electromagnetic fields 0 Hz to 300 GHz. Standards taking into account this Recommendation which demonstrate compliance with the applicable EU Directive are indicated in the OJEC.</p>	—												



Report No. 40103

Annex H	<p>Replace the last paragraph of this annex by:</p> <p>At any point 10 cm from the surface of the OPERATOR ACCESS AREA, the dose rate shall not exceed 1 μSv/h (0,1 mR/h) (see NOTE). Account is taken of the background level.</p> <p>Replace the notes as follows:</p> <p>NOTE These values appear in Directive 96/29/Euratom.</p> <p>Delete NOTE 2.</p>	—
Bibliography	Additional EN standards.	—

ZA	NORMATIVE REFERENCES TO INTERNATIONAL PUBLICATIONS WITH THEIR CORRESPONDING EUROPEAN PUBLICATIONS	—
----	---	---

ZB	SPECIAL NATIONAL CONDITIONS	P
1.2.4.1	In Denmark , certain types of Class I appliances (see 3.2.1.1) may be provided with a plug not establishing earthing conditions when inserted into Danish socket-outlets.	N
1.5.7.1	In Finland, Norway and Sweden , resistors bridging BASIC INSULATION in CLASS I PLUGGABLE EQUIPMENT TYPE A must comply with the requirements in 1.5.7.2.	N
1.5.8	In Norway , due to the IT power system used (see annex V, Figure V.7), capacitors are required to be rated for the applicable line-to-line voltage (230 V).	N
1.5.9.4	In Finland, Norway and Sweden , the third dashed sentence is applicable only to equipment as defined in 6.1.2.2 of this annex.	N
1.7.2.1	<p>In Finland, Norway and Sweden, CLASS I PLUGGABLE EQUIPMENT TYPE A intended for connection to other equipment or a network shall, if safety relies on connection to protective earth or if surge suppressors are connected between the network terminals and accessible parts, have a marking stating that the equipment must be connected to an earthed mains socket-outlet.</p> <p>The marking text in the applicable countries shall be as follows:</p> <p>In Finland: "Laitte on liitettävä suojamaadoituskoskettimilla varustettuun pistorasiaan"</p> <p>In Norway: "Apparatet må tilkoples jordet stikkontakt"</p> <p>In Sweden: "Apparaten skall anslutas till jordat uttag"</p>	N
1.7.5	In Denmark , socket-outlets for providing power to other equipment shall be in accordance with the Heavy Current Regulations, Section 107-2-D1, Standard Sheet DK 1-3a, DK 1-5a or DK 1-7a, when used on Class I equipment. For STATIONARY EQUIPMENT the socket-outlet shall be in accordance with Standard Sheet DK 1-1b or DK 1-5a.	N
2.2.4	In Norway , for requirements see 1.7.2.1, 6.1.2.1 and 6.1.2.2 of this annex.	N
2.3.2	In Finland, Norway and Sweden there are additional requirements for the insulation. See 6.1.2.1 and 6.1.2.2 of this annex.	N



Report No. 40103

2.3.4	In Norway , for requirements see 1.7.2.1, 6.1.2.1 and 6.1.2.2 of this annex.	N																								
2.6.3.3	In the United Kingdom , the current rating of the circuit shall be taken as 13 A, not 16 A.	P																								
2.7.1	In the United Kingdom , to protect against excessive currents and short-circuits in the PRIMARY CIRCUIT of DIRECT PLUG-IN EQUIPMENT, tests according to 5.3 shall be conducted, using an external protective device rated 30 A or 32 A. If these tests fail, suitable protective devices shall be included as integral parts of the DIRECT PLUG-IN EQUIPMENT, so that the requirements of 5.3 are met.	N																								
2.10.5.13	In Finland, Norway and Sweden , there are additional requirements for the insulation, see 6.1.2.1 and 6.1.2.2 of this annex.	N																								
3.2.1.1	<p>In Switzerland, supply cords of equipment having a RATED CURRENT not exceeding 10 A shall be provided with a plug complying with SEV 1011 or IEC 60884-1 and one of the following dimension sheets:</p> <table border="0"> <tr> <td>SEV 6532-2.1991</td> <td>Plug Type 15</td> <td>3P+N+PE</td> <td>250/400 V, 10 A</td> </tr> <tr> <td>SEV 6533-2.1991</td> <td>Plug Type 11</td> <td>L+N</td> <td>250 V, 10 A</td> </tr> <tr> <td>SEV 6534-2.1991</td> <td>Plug Type 12</td> <td>L+N+PE</td> <td>250 V, 10 A</td> </tr> </table> <p>In general, EN 60309 applies for plugs for currents exceeding 10 A. However, a 16 A plug and socket-outlet system is being introduced in Switzerland, the plugs of which are according to the following dimension sheets, published in February 1998:</p> <table border="0"> <tr> <td>SEV 5932-2.1998</td> <td>Plug Type 25</td> <td>3L+N+PE</td> <td>230/400 V, 16 A</td> </tr> <tr> <td>SEV 5933-2.1998</td> <td>Plug Type 21</td> <td>L+N</td> <td>250 V, 16 A</td> </tr> <tr> <td>SEV 5934-2.1998</td> <td>Plug Type 23</td> <td>L+N+PE</td> <td>250 V, 16 A</td> </tr> </table>	SEV 6532-2.1991	Plug Type 15	3P+N+PE	250/400 V, 10 A	SEV 6533-2.1991	Plug Type 11	L+N	250 V, 10 A	SEV 6534-2.1991	Plug Type 12	L+N+PE	250 V, 10 A	SEV 5932-2.1998	Plug Type 25	3L+N+PE	230/400 V, 16 A	SEV 5933-2.1998	Plug Type 21	L+N	250 V, 16 A	SEV 5934-2.1998	Plug Type 23	L+N+PE	250 V, 16 A	N
SEV 6532-2.1991	Plug Type 15	3P+N+PE	250/400 V, 10 A																							
SEV 6533-2.1991	Plug Type 11	L+N	250 V, 10 A																							
SEV 6534-2.1991	Plug Type 12	L+N+PE	250 V, 10 A																							
SEV 5932-2.1998	Plug Type 25	3L+N+PE	230/400 V, 16 A																							
SEV 5933-2.1998	Plug Type 21	L+N	250 V, 16 A																							
SEV 5934-2.1998	Plug Type 23	L+N+PE	250 V, 16 A																							
3.2.1.1	<p>In Denmark, supply cords of single-phase equipment having a rated current not exceeding 13 A shall be provided with a plug according to the Heavy Current Regulations, Section 107-2-D1.</p> <p>CLASS I EQUIPMENT provided with socket-outlets with earth contacts or which are intended to be used in locations where protection against indirect contact is required according to the wiring rules shall be provided with a plug in accordance with standard sheet DK 2-1a or DK 2-5a.</p> <p>If poly-phase equipment and single-phase equipment having a RATED CURRENT exceeding 13 A is provided with a supply cord with a plug, this plug shall be in accordance with the Heavy Current Regulations, Section 107-2-D1 or EN 60309-2.</p>	N																								
3.2.1.1	<p>In Spain, supply cords of single-phase equipment having a rated current not exceeding 10 A shall be provided with a plug according to UNE 20315:1994.</p> <p>Supply cords of single-phase equipment having a rated current not exceeding 2,5 A shall be provided with a plug according to UNE-EN 50075:1993.</p> <p>CLASS I EQUIPMENT provided with socket-outlets with earth contacts or which are intended to be used in locations where protection against indirect contact is required according to the wiring rules, shall be provided with a plug in accordance with standard UNE 20315:1994.</p> <p>If poly-phase equipment is provided with a supply cord with a plug, this plug shall be in accordance with UNE-EN 60309-2.</p>	N																								



Report No. 40103

3.2.1.1	<p>In the United Kingdom, apparatus which is fitted with a flexible cable or cord and is designed to be connected to a mains socket conforming to BS 1363 by means of that flexible cable or cord and plug, shall be fitted with a 'standard plug' in accordance with Statutory Instrument 1768:1994 - The Plugs and Sockets etc. (Safety) Regulations 1994, unless exempted by those regulations.</p> <p>NOTE 'Standard plug' is defined in SI 1768:1994 and essentially means an approved plug conforming to BS 1363 or an approved conversion plug.</p>	N
3.2.1.1	<p>In Ireland, apparatus which is fitted with a flexible cable or cord and is designed to be connected to a mains socket conforming to I.S. 411 by means of that flexible cable or cord and plug, shall be fitted with a 13 A plug in accordance with Statutory Instrument 525:1997 - National Standards Authority of Ireland (section 28) (13 A Plugs and Conversion Adaptors for Domestic Use) Regulations 1997.</p>	P
3.2.4	<p>In Switzerland, for requirements see 3.2.1.1 of this annex.</p>	N
3.2.5.1	<p>In the United Kingdom, a power supply cord with conductor of 1,25 mm² is allowed for equipment with a rated current over 10 A and up to and including 13 A.</p>	N
3.3.4	<p>In the United Kingdom, the range of conductor sizes of flexible cords to be accepted by terminals for equipment with a RATED CURRENT of over 10 A up to and including 13 A is:</p> <ul style="list-style-type: none"> • 1,25 mm² to 1,5 mm² nominal cross-sectional area. 	N
4.3.6	<p>In the United Kingdom, the torque test is performed using a socket outlet complying with BS 1363 part 1:1995, including Amendment 1:1997 and Amendment 2:2003 and the plug part of DIRECT PLUG-IN EQUIPMENT shall be assessed to BS 1363: Part 1, 12.1, 12.2, 12.3, 12.9, 12.11, 12.12, 12.13, 12.16 and 12.17, except that the test of 12.17 is performed at not less than 125 °C. Where the metal earth pin is replaced by an Insulated Shutter Opening Device (ISOD), the requirements of clauses 22.2 and 23 also apply.</p>	N
4.3.6	<p>In Ireland, DIRECT PLUG-IN EQUIPMENT is known as plug similar devices. Such devices shall comply with Statutory Instrument 526:1997 - National Standards Authority of Ireland (Section 28) (Electrical plugs, plug similar devices and sockets for domestic use) Regulations, 1997.</p>	N
5.1.7.1	<p>In Finland, Norway and Sweden TOUCH CURRENT measurement results exceeding 3,5 mA r.m.s. are permitted only for the following equipment:</p> <ul style="list-style-type: none"> • STATIONARY PLUGGABLE EQUIPMENT TYPE A that <ul style="list-style-type: none"> ○ is intended to be used in a RESTRICTED ACCESS LOCATION where <ul style="list-style-type: none"> equipotential bonding has been applied, for example, in a telecommunication centre; and ○ has provision for a permanently connected PROTECTIVE EARTHING CONDUCTOR; and ○ is provided with instructions for the installation of that conductor by a SERVICE PERSON; • STATIONARY PLUGGABLE EQUIPMENT TYPE B; • STATIONARY PERMANENTLY CONNECTED EQUIPMENT. 	N





Report No. 40103

6.1.2.1	<p>In Finland, Norway and Sweden, add the following text between the first and second paragraph of the compliance clause:</p> <p>If this insulation is solid, including insulation forming part of a component, it shall at least consist of either</p> <ul style="list-style-type: none"> - two layers of thin sheet material, each of which shall pass the electric strength test below, or - one layer having a distance through insulation of at least 0,4 mm, which shall pass the electric strength test below. <p>If this insulation forms part of a semiconductor component (e.g. an optocoupler), there is no distance through insulation requirement for the insulation consisting of an insulating compound completely filling the casing, so that CLEARANCES and CREEPAGE DISTANCES do not exist, if the component passes the electric strength test in accordance with the compliance clause below and in addition</p> <ul style="list-style-type: none"> - passes the tests and inspection criteria of 2.10.11 with an electric strength test of 1,5 kV multiplied by 1,6 (the electric strength test of 2.10.10 shall be performed using 1,5 kV), and - is subject to ROUTINE TESTING for electric strength during manufacturing, using a test voltage of 1,5 kV. <p>It is permitted to bridge this insulation with a capacitor complying with EN 132400:1994, subclass Y2.</p> <p>A capacitor classified Y3 according to EN 132400:1994, may bridge this insulation under the following conditions:</p> <ul style="list-style-type: none"> - the insulation requirements are satisfied by having a capacitor classified Y3 as defined by EN 132400, which in addition to the Y3 testing, is tested with an impulse test of 2,5 kV defined in EN 60950-1:2006, 6.2.2.1; - the additional testing shall be performed on all the test specimens as described in EN 132400; - the impulse test of 2,5 kV is to be performed before the endurance test in EN 132400, in the sequence of tests as described in EN 132400. 	N
6.1.2.2	<p>In Finland, Norway and Sweden, the exclusions are applicable for PERMANENTLY CONNECTED EQUIPMENT, PLUGGABLE EQUIPMENT TYPE B and equipment intended to be used in a RESTRICTED ACCESS LOCATION where equipotential bonding has been applied, e.g. in a telecommunication centre, and which has provision for a permanently connected PROTECTIVE EARTHING CONDUCTOR and is provided with instructions for the installation of that conductor by a SERVICE PERSON.</p>	N
7.2	<p>In Finland, Norway and Sweden, for requirements see 6.1.2.1 and 6.1.2.2 of this annex.</p> <p>The term TELECOMMUNICATION NETWORK in 6.1.2 being replaced by the term CABLE DISTRIBUTION SYSTEM.</p>	N
7.3	<p>In Norway and Sweden, there are many buildings where the screen of the coaxial cable is normally not connected to the earth in the building installation.</p>	N
7.3	<p>In Norway, for installation conditions see EN 60728-11:2005.</p>	N
ZC	<p>A-DEVIATIONS (informative)</p>	P



Report No. 40103

1.5.1	<p>Sweden (Ordinance 1990:944)</p> <p>Add the following:</p> <p>NOTE In Sweden, switches containing mercury are not permitted.</p>	N
1.5.1	<p>Switzerland (Ordinance on environmentally hazardous substances SR 814.081, Annex 1.7, Mercury - Annex 1.7 of SR 814.81 applies for mercury.)</p> <p>Add the following:</p> <p>NOTE In Switzerland, switches containing mercury such as thermostats, relays and level controllers are not allowed.</p>	—
1.7.2.1	<p>Denmark (Heavy Current Regulations)</p> <p>Supply cords of CLASS I EQUIPMENT, which is delivered without a plug, must be provided with a visible tag with the following text:</p> <p style="text-align: center;">Vigtigt! Lederen med grøn/gul isolation må kun tilsluttes en klemme mærket</p> <p style="text-align: center;"> eller </p> <p>If essential for the safety of the equipment, the tag must in addition be provided with a diagram, which shows the connection of the other conductors, or be provided with the following text:</p> <p>“For tilslutning af de øvrige ledere, se medfølgende installationsvejledning.”</p>	—
1.7.2.1	<p>Germany (Gesetz über technische Arbeitsmittel und Verbraucherprodukte (Geräte- und Produktsicherheitsgesetz – GPSG) [Law on technical labour equipment and consumer products], of 6th January 2004, Section 2, Article 4, Clause (4), Item 2).</p> <p>If for the assurance of safety and health certain rules during use, amending or maintenance of a technical labour equipment or readymade consumer product are to be followed, a manual in German language has to be delivered when placing the product on the market.</p> <p>Of this requirement, rules for use even only by SERVICE PERSONS are not exempted.</p>	—
1.7.5	<p>Denmark (Heavy Current Regulations)</p> <p>With the exception of CLASS II EQUIPMENT provided with a socket outlet in accordance with the Heavy Current Regulations, Section 107-2-D1, Standard Sheet DK 1-4a, CLASS II EQUIPMENT shall not be fitted with socket-outlets for providing power to other equipment.</p>	—
1.7.13	<p>Switzerland (Ordinance on chemical hazardous risk reduction SR 814.81, Annex 2.15 Batteries)</p> <p>Annex 2.15 of SR 814.81 applies for batteries.</p>	N
5.1.7.1	<p>Denmark (Heavy Current Regulations, Chapter 707, clause 707.4)</p> <p>TOUCH CURRENT measurement results exceeding 3,5 mA r.m.s. are permitted only for PERMANENTLY CONNECTED EQUIPMENT and PLUGGABLE EQUIPMENT TYPE B.</p>	N



Report No. 40103

1.5.1 TABLE: List of critical components					P
Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition /year)	Mark(s) of conformity ¹⁾
3 way darkgrey pushbutton enclosure	Telemecanique/ Schneider Electric	XALDO3 XAL Z09. 1562 027&1562028	Polycarbonate V-0	EN/IEC 60947-1 EN/IEC 947-5-1 UL 508	UL CSA
Selector Switch	Telemecanique/ Schneider Electric	ZB5 AD3 ZBE-101	240VAC, 3A, 70°C	EN/IEC 60947-1 EN/IEC 947-5-1 UL 508	UL CSA
Emergency stop	Telemecanique/ Schneider Electric	ZB5 AS44	240VAC, 3A, 70°C	EN/IEC 60947-1 EN/IEC 947-5-1	UL CSA
Complete body 2NC	Telemecanique/ Schneider Electric	ZB5 AZ104	V-0,70°C	EN/IEC 60947-1 EN/IEC 947-5-1	UL CSA
Compete Body 2NO	Telemecanique/ Schneider Electric	ZB5 AZ103	V-0,70°C	EN/IEC 60947-1 EN/IEC 947-5-1	UL CSA
Cable Glands 3030751	Pro Power /Farnell	251/97/93B M20	Nylon 66.V-2, 100°C	UL 94	UL
F1 Fuse Holder	Bulgin	FX0460	16A, 250V, 5 x 20mm fuse, screw cap	EN60127-6: 1994 +A1:1996	IMQ, SEMKO, CSA,UL E60600
Fuse F1	Little Fuse	0218.200MXP anti surge 20mm T	200mA T 250V, 20mm	CSA IEC 60127	CSA1422-30 BSI. KM41462
Phase Shift Capacitors C1 & C2	Vishay	2222 338 10224	220nF X1 CAP 440V	EN/IEC 60384- 14 ed. 3 , UL1414 ;UL1283 CSA 22.2.8	Fimko F15256 E112471 E109565
Discharge Resistors R1 & R2	Vishay	1M2 VR37 2306 24213 125	1.2MΩ	EN/IEC 60065 UL1676	VDE 0860 E171160
J1 Appliance Inlet	SCHURTER	4732.0000	10A,250VAC 50/60 Hz,-25°C to 70°C,V-0	IEC/EN 60320-2- 2,UL 498, UL94 CSA C22.2. 42	VDE4001073 1 UL E96454 CSA56242
3 –core Flexible cord mains inlet to CU. black	Propower	3183-Y H05VV- F CBBR0067 Flexible Cable	40/0.2mm, 1.25mm ² 3 core, 13A	BS6500, HD21.5	<HAR> BASEC Approved
4-Core mains cord.CU to conveyor. white	Propower	3184Y H05VV- F CBBR0076 Flexible Cable	6A 16/.02 0.75mm2	BS6500, HD21.5	<HAR> BASEC Approved
Plug Shell Trident4 way connector	ITT Canon	TST 04 PA00 0110 Group C	250V 4W Up to10A, V-0	UL94	VDE, UL E321972
Main Drive Motor	Portescap	MV86111-P5 synchronous AC motor	220V AC 50Hz 32mA. phase shift capacitor 0.22μF.	EN60950-1: 2006	Tested in application

¹⁾ An asterisk indicates a mark which assures the agreed level of surveillance

Supplementary information:



Report No. 40103

1.5.1	TABLE: Opto Electronic Devices	N
Manufacturer		
Type		
Separately tested		
Bridging insulation.....		
External creepage distance		
Internal creepage distance.....		
Distance through insulation.....		
Tested under the following conditions.....		
Input		
Output.....		
Supplementary information:		
No Opto Electronic Devices used		



Report No. 40103

1.6.2	TABLE: Electrical data (in normal conditions)						P
U (V)	I (mA)	I _{rated} (mA)	P (W)	Fuse #	I _{fuse} (mA)	Condition/status	
216	29	200	6	F1	250	Refer to supplementary Information	
220	29.2	200	6	F1	250	Refer to supplementary Information	
230	31.3	200	6.5	F1	250	Refer to supplementary Information	
240	33.1	200	7.32	F1	250	Refer to supplementary Information	
254	36.0	200	8.4	F1	250	Refer to supplementary Information	
Supplementary information:							
Tests were conducted in forward and reverse direction and maximum values under normal loading were recorded							

2.1.1.5 c1)	TABLE: max. V, A, VA test				N
Voltage (rated) (V)	Current (rated) (A)	Voltage (max.) (V)	Current (max.) (A)	VA (max.) (VA)	
Supplementary information:					

2.1.1.5 c2)	TABLE: stored energy			N
Capacitance C (µF)	Voltage U (V)		Energy E (J)	
Supplementary information:				
$E=0,5 CU^2 \times 10^{-6}$				



Report No. 40103

2.2	TABLE: evaluation of voltage limiting components in SELV circuits			N
Component (measured between)	max. voltage (V) (normal operation)		Voltage Limiting Components	
	V peak	V d.c.		
Fault test performed on voltage limiting components	Voltage measured (V) in SELV circuits (V peak or V d.c.)			
Supplementary information:				

2.5	TABLE: limited power sources			N
	I _{sc} (A)		VA	
	Meas.	Limit	Meas.	Limit
Supplementary information:				

2.10.2	Table: working voltage measurement			P
Location	RMS voltage (V)	Peak voltage (V)	Comments	
All circuits are conductively connected to the mains supply.	250	360		
Supplementary information:				



Report No. 40103

2.10.3 and 2.10.4	TABLE: Clearance and creepage distance measurements						P
Clearance (cl) and creepage distance (cr) at/of/between:	U peak (V)	U r.m.s. (V)	Required cl (mm)	cl (mm)	Required cr (mm)	cr (mm)	
Functional:							
Basic/supplementary:							
Primary winding to Earth body	354	250	2.0	4.1	2.5	4.1	
Reinforced:							
Supplementary information: Accessible fuse holder is an approved component.							

2.10.5	TABLE: Distance through insulation measurements					N
Distance through insulation (DTI) at/of:	U peak (V)	U rms (V)	Test voltage (V)	Required DTI (mm)	DTI (mm)	
Supplementary information:						
No Secondary Circuit						



Report No. 40103

4.3.8	TABLE: Batteries	N
Battery category : Manufacturer : Type / model..... : Voltage : Capacity : Tested and Certified by (incl. Ref. No.)..... : Circuit protection diagram:		

MARKINGS AND INSTRUCTIONS (1.7.12, 1.7.15)	
Location of replaceable battery	
	Language(s):
Close to the battery	
In the servicing instructions	
In the operating instructions	



Report No. 40103

4.3.8	TABLE: Batteries								N
The tests of 4.3.8 are applicable only when appropriate battery data is not available									
Is it possible to install the battery in a reverse polarity position?									
	Non-rechargeable batteries			Rechargeable batteries					
	Discharging		Un-intentional charging	Charging		Discharging		Reversed charging	
	Meas. current	Manuf. Specs.		Meas. current	Manuf. Specs.	Meas. current	Manuf. Specs.	Meas. current	Manuf. Specs.
Max. current during normal condition									
Max. current during fault condition									
Test results:								Verdict	
- Chemical leaks									
- Explosion of the battery									
- Emission of flame or expulsion of molten metal									
- Electric strength tests of equipment after completion of tests									
Supplementary information:									



Report No. 40103

4.5	TABLE: Thermal requirements			
	Supply voltage (V)	216	254	—
	Ambient T _{min} (°C)	20	21	
	Ambient T _{max} (°C)	21	22	
Maximum measured temperature T of part/at::		T (°C)		Allowed T _{max} (°C)
Synchronous Motor -Casing		57	79	130
Control Unit Box		29	31	95
Emergency stop Switch body		35	33	70
Fuse Holder-Body		44	44	85
Forward /Reverse Switch body		33	34	70
IEC 60320 Appliance Inlet Body		27	27	70
Motor Phase shift capacitor		29	22	105
Earth terminal		23	30	—
Internal Mains wiring-Control box		26	24	105
Input Cable Gland Internal		26	25	100
Output Cable gland Internal		28	27	100
Supplementary information:				

4.5.5	TABLE: Ball pressure test of thermoplastic parts			P
	Allowed impression diameter (mm)	≤ 2 mm		—
Part		Test temperature (°C)	Impression diameter (mm)	
Motor winding bobbin material		125	0.9	
Supplementary information:				
Motor winding is metal encased class 1 components.				



Report No. 40103

4.7 TABLE: Resistance to fire					
Part	Manufacturer of material	Type of material	Thickness (mm)	Flammability class	Evidence
CU enclosure 2-parts Plastic	Telemecanique /Schneider Electric	XAL Z09O3 (1562027) & (1562028) Polycarbonate	1.75	V-0 V-0	UL E164353 CSA 44087-133
Selector Switch Plastics material	Telemecanique /Schneider Electric	ZBE-101 Polycarbonate	1.75	UL94 V-0	UL E164353 CSA 44087-133
Connector P1 Plastics material	ITT Canon	Black Nylon66.	1.0	UL94 V-0	UL E321972
Cable Glands Plastics material	Pro Power	251/97/93B (M16 or M20) Nylon 66	2.0	UL94 V-2	UL Manufacturer's declaration
Emergency stop Plastics material	Telemecanique /Schneider Electric	ZB5 AS44 Glass-reinforced polyester.	1.75	UL94 V-0	UL E164353 CSA 44087-133
Complete body Plastics material 2NC	Telemecanique /Schneider Electric	ZB5 AZ104 Glass-reinforced polyester.	1.75	UL94 V-0	UL E164353 CSA 44087-133
Complete Body Plastics material 2NO	Telemecanique /Schneider Electric	ZB5 AZ103 Glass-reinforced polyester.	1.75	UL94 V-0	UL E164353 CSA 44087-133
Supplementary information:					



Report No. 40103

5.1	TABLE: touch current measurement			P
Measured between:	Measured (mA)	Limit (mA)	Comments/conditions	
Normal	0.043	3.5		
Reverse	0.055	3.5		
Supplementary information:				
There are no Y-Capacitors in the equipment.				

5.2	TABLE: Electric strength tests, impulse tests and voltage surge tests			P
Test voltage applied between:	Voltage shape (AC, DC, impulse, surge)	Test voltage (V)	Breakdown Yes / No	
Basic/supplementary:				
Live to neural before the fuse.	-	1500	No	
Live to earthed metal parts	-	1500	No	
Reinforced:				
Supplementary information:				



Report No. 40103

5.3	TABLE: Fault condition tests					P
	Ambient temperature (°C)				22	—
	Power source for EUT: Manufacturer, model/type, output rating				Mains supply Variable Input	—
Component No.	Fault	Supply voltage (V)	Test time	Fuse #	Fuse current (mA)	Observation
Drive Motor	Locked Rotor	254	15days	F1	200	Maximum Temperature=89°C. No hazard.
Dive Motor	Running Overload Test	254	4hours	F1	200	Maximum Temperature=75°C. No hazard.
Capacitor C1	S/C	254	Instant	F1	200	Mains Inout fuse F1 operated. No hazard.
Capacitor C1	O/C	254	2hours	F1	200	Conveyor continued to operate, No hazard.
Capacitor C2	S/C	254	Instant	F1	200	Mains Inout fuse F1 operated. No hazard.
Capacitor C2	O/C	254	2hours	F1	200	Conveyor continued to operate, No hazard.
Capacitor C1	O/C under Locked rotor	254	4hours	F1	200	Conveyor continued to operate, Maximum temperature =69°C. No hazard.
Resistor R2	O/C under Locked rotor	254	4hours	F1	200	Conveyor continued to operate, Maximum temperature =51°C. No hazard.
Supplementary information:						



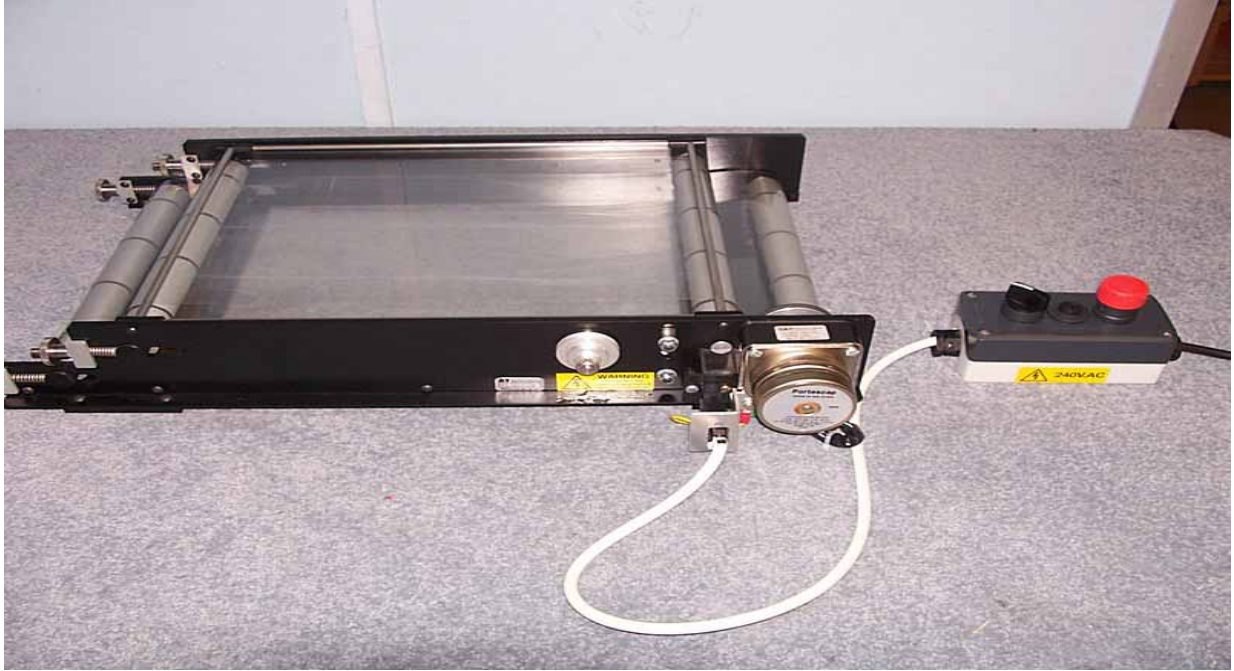
Report No. 40103

C.2	TABLE: transformers							N
Loc.	Tested insulation	Working voltage peak / V (2.10.2)	Working voltage rms / V (2.10.2)	Required electric strength (5.2)	Required clearance / mm (2.10.3)	Required creepage distance / mm (2.10.4)	Required distance thr. insul. (2.10.5)	
Loc.	Tested insulation			Test voltage/ V	Measured clearance / mm	Measured creepage dist./ mm	Measured distance thr. insul. / mm; number of layers	
Supplementary information:								



Photos

Order No. 40130



Top and Side View.





Photos

Order No.

40130





Photos

Order No.

40130





Photos

Order No. 40130

