



VP Engineering
CAB PRODUKTTECHNIK GMBH & CO KG
WILHELM-SCHICKARD-STR 14
76131 KARLSRUHE GERMANY

Date: 12/03/2008
Subscriber: 103635001
PartySite: 421241
File No: E311215
Project No: 08CA54491
PD No: 08Q07649
Type: R
PO Number: add printer A4+M

Subject: UL Certification Documents For Applicant

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

<u>Document</u>	<u>Volume</u>	<u>Report Reference</u>	<u>Status</u>	<u>Date</u>
Index	X1			
UL Test Report	X1	E311215-A1-UL-1	Amendment	12/02/08

Please file revised Authorizations, Indices, and General Inspection Instructions in place of material of like identity. New Test Reports should be filed immediately following the last Test Report. Amendments or Corrections should be filed immediately before the Test Report to which they relate. Re-issued Test Reports should be filed immediately before all material related to the Test Report that it replaces.

NOTE: Manufacturers receive only the following sub-sections of the Applicant's complete Test Report, where applicable: Cover Page, Specific Inspection Criteria (BA through BE), Specific Technical Criteria (through section CF), Critical Components table, and Enclosures containing image supplements. Manufacturers do not receive Test Report information related to standard clause compliance or testing results.

NOTE: Manufacturers that require an Initial Product Inspection (IPI) have received their copy of the Follow-Up Service Procedure, but are instructed they are not allowed to ship products bearing the UL Mark until their UL Representative has successfully conducted the Initial Production Inspection.

Please review this material and report any inaccuracies to UL Germany Customer Service, PHONE: +49 6102 369 0, FAX: +49 6102 369 280, E-MAIL: CustomerService.de@de.ul.com, referring to the above Project and/or PD Numbers.

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c: FRK File

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<u>Product Type</u>	<u>Model/Type Reference</u>	<u>Report Reference #</u>
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Label printers	Mach4/xxx, BRADY IP Series (BP-IPXXX), A2+/XXX, A4+/XXX, A4.3+/XXX, A6+/XXX, A8+/XXX, all models may be followed by "B" or "P" or "PVT" or blank.	E311215-A1-UL-1
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The models Mach4/xxx, BRADY IP Series (IPXXX) may be followed by "C" which defines the models with cutting knife option.

BP-PRXXXPLUS, may be followed by "P" or blank.

Whereby "X" can be any digit from 0-9 and stands for different printheads (different resolution in dpi), "B" stands for the basic version, "P" stands for the version including an internal pressure roll and rewinder, not Safety relevant.

The model names starting with "BP" or BRADY IP are the versions for BRADY, in respect to safety identical to the others.

Models A4+M/XXX, TE3112, TE3124.

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COVER PAGE FOR TEST REPORT

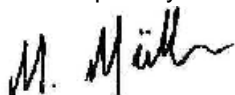
Product Category:	Information Technology Equipment Including Electrical Business Equipment
Product Category CCN:	NWGQ, NWGQ7
Test Procedure:	Listing
Product:	Label printers
Model/Type Reference:	<p>Mach4/xxx, BRADY IP Series (BP-IPXXX), A2+/XXX, A4+/XXX, A4.3+/XXX, A6+/XXX, A8+/XXX, all models may be followed by "B" or "P" or "PVT" or blank.</p> <p>The models Mach4/xxx, BRADY IP Series (IPXXX) may be followed by "C" which defines the models with cutting knife option.</p> <p>BP-PRXXXPLUS, may be followed by "P" or blank.</p> <p>Whereby "X" can be any digit from 0-9 and stands for different printheads (different resolution in dpi), "B" stands for the basic version, "P" stands for the version including an internal pressure roll and rewriter, not Safety relevant.</p> <p>The model names starting with "BP" or BRADY IP are the versions for BRADY, in respect to safety identical to the others.</p> <p>Models A4+M/XXX, TE3112, TE3124.</p>
Rating(s):	100-240 V, 2A max. , 50-60Hz
Standards:	<p>UL 60950-1, 1st Edition, 2007-10-31 (Information Technology Equipment - Safety - Part 1: General Requirements)</p> <p>CSA C22.2 No. 60950-1-03, 1st Edition, 2006-07 (Information Technology Equipment - Safety - Part 1: General Requirements)</p>
Applicant Name and Address:	<p>CAB PRODUKTTECHNIK GMBH & CO KG WILHELM-SCHICKARD-STR 14 76131 KARLSRUHE GERMANY</p>
<p>This Report includes the following parts, in addition to this cover page:</p> <ol style="list-style-type: none">1. Specific Technical Criteria2. Critical Components3. Enclosures	

This is to certify that representative samples of the products covered by this Test Report have been investigated in accordance with the above referenced Standards. The products have been found to comply with the requirements covering the category and the products are judged to be eligible for Follow-Up Service under the indicated Test Procedure. The manufacturer is authorized to use the UL Mark on such products which comply with this Test Report and any other applicable requirements of Underwriters Laboratories Inc. ('UL') in accordance with the Follow-Up Service Agreement. Only those products which properly bear the UL Mark are considered as being covered by UL's Follow-Up Service under the indicated Test Procedure.

The applicant is authorized to reproduce the referenced Test Report provided it is reproduced in its entirety.

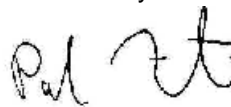
Any information and documentation involving UL Mark services are provided on behalf of Underwriters Laboratories Inc. (UL) or any authorized licensee of UL.

Test Report By:



Manfred Mueller
Senior Project Engineer
UL International Germany GmbH

Reviewed By:



Paul Zawatson
Engineering Group Leader
UL International Germany GmbH

SPECIFIC TECHNICAL CRITERIA

UL 60950-1, First Edition Information technology equipment - Safety- Part 1: General Requirements	
Report Reference No	E311215-A1-UL-1
Compiled by	Manfred Mueller
Reviewed by	Paul Zawatson
Date of issue	2007-05-04
Standards	UL 60950-1, 1st Edition, 2007-10-31 (Information Technology Equipment - Safety - Part 1: General Requirements) CSA C22.2 No. 60950-1-03, 1st Edition, 2006-07 (Information Technology Equipment - Safety - Part 1: General Requirements)
Test procedure	Listing
Non-standard test method	N/A
Test item description	Label printers
Trademark	None
Model and/or type reference	Mach4/xxx, BRADY IP Series (BP-IPXXX), A2+/XXX, A4+/XXX, A4.3+/XXX, A6+/XXX, A8+/XXX, all models may be followed by "B" or "P" or "PVT" or blank. The models Mach4/xxx, BRADY IP Series (IPXXX) may be followed by "C" which defines the models with cutting knife option. BP-PRXXXPLUS, may be followed by "P" or blank. Whereby "X" can be any digit from 0-9 and stands for different printheads (different resolution in dpi), "B" stands for the basic version, "P" stands for the version including an internal pressure roll and rewinder, not Safety relevant. The model names starting with "BP" or BRADY IP are the versions for BRADY, in respect to safety identical to the others. Models A4+M/XXX, TE3112, TE3124.
Rating(s)	100-240 V, 2A max. , 50-60Hz

Particulars: test item vs. test requirements

Equipment mobility: movable
Operating condition: continuous
Mains supply tolerance (%): +6%, -10%
Tested for IT power systems: No
IT testing, phase-phase voltage (V): N/A
Class of equipment: Class I (earthed)
Mass of equipment (kg): < 18
Protection against ingress of water: IP X0

Possible test case verdicts:

- test case does not apply to the test object: N / A
- test object does meet the requirement: Pass
- test object does not meet the requirement: Fail (acceptable only if a corresponding, less stringent national requirement is "Pass")

General remarks:

- "(see Enclosure #)" refers to additional information appended to the Test Report
- "(see appended table)" refers to a table appended to the Test Report
- Throughout the Test Report a point is used as the decimal separator

GENERAL PRODUCT INFORMATION:	
CA1.0	Report Summary
CA1.1	N/A
CB1.0	Product Description
CB1.1	Transfer- and Thermodirectprinters. Optional the printers can have installed the accessories applicator 1000-300 or 1000-220-pvt externally!
CC1.0	Model Differences
CC1.1	<p>Mach4/xxx, BRADY IP Series (BP-IPXXX), A2+/XXX, A4+/XXX, A4.3+/XXX, A6+/XXX, A8+/XXX, all models may be followed by "B" or "P" or "PVT" or blank.</p> <p>BP-PRXXXPLUS, may be followed by "P" or blank.</p> <p>Whereby "X" can be any digit from 0-9 and stands for different printheads (different resolution in dpi), "B" stands for the basic version, "P" stands for the version including an internal pressure roll and rewinder, not Safety relevant.</p> <p>The model names starting with "BP" or BRADY IP are the versions for BRADY, in respect to safety identical to the others.</p> <p>The models A4+M/XXX, TE3112, TE3124 are identical to the models A4+/XXX, except the roll mounting system is different now but not safety relevant.</p> <p>The type-keys are only for marketing purpose and no impact safety related critical components and construction.</p> <p>The models Mach4/xxx, BRADY IP Series (IPXXX) may be followed by "C" which defines the models with cutting knife option.</p>
CD1.0	Additional Information
CD1.1	<p>Models MACH4/XXX and BRADY IP Series cutter option inserted and for models starting with the letter "A" and "BP" one part of the metal side of the fire enclosure has been replaced by a plastic side enclosure in min. thickness of 3mm (Bayblend FR2000 from Bayer, rated V-0 in min. thickness of 1.5mm)</p> <p>Correction: Model designations for cutting knife versions added as follows: The models Mach4/xxx, BRADY IP Series (IPXXX) may be followed by "C" which defines the models with cutting knife option.</p> <p>Amendment 3: BDC Board for the models IP Series, additional models A4+M/XXX, TE3112, TE3124.</p>

CE1.0	Technical Considerations
CE1.2	The product was submitted and tested for use at the maximum ambient temperature (T _{ma}) permitted by the manufacturer's specification of: 40°C
CE1.3	The means of connection to the mains supply is: Detachable power cord, Pluggable A
CE1.4	The product is intended for use on the following power systems: TN
CE1.5	The equipment disconnect device is considered to be: Appliance inlet,

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

1.5.1	TABLE: list of critical components					Pass
Object/part No.	Manufacturer/ trademark	type/model	technical data	Product Category CCN(s)	Required Marks of Conformity	Supplement ID
Fire/mechanical/electrical enclosure bottom and top for models MACH4/XXX and BRADY IP Series	BAYER	Bayblend FR2000	V-0 in min. thickness of 1.5mm Card rating, Enclosure in min. thickness of 2mm	QMFZ2	--	3-01
All other covers and plastic parts, e.g. display housing, top cover above the rolls and so on for models MACH4/XXX and BRADY IP Series	various	various	HB in thickness used.	QMFZ2	--	3-02
Fire/mechanical/electrical enclosure for models starting with the letter A and BP	various	various	Metal in min. thickness of 2mm	--	--	3-03
Alternate Fire/mechanical/electrical enclosure for models starting with the letter A and BP, one side of this fire enclosure had been changed from metal into plastic.	Bayer	Bayblend FR2000	In min. thickness of 3mm used, (rated V-0 already in thickness of 1.5mm)	QMFZ2	--	3-03
Side cover shaped as shown, which covers the rolls for models starting with the letter "A" and "BP"	various	various	Metal or partially metal and plastic or plastic in total, plastic rated min. HB in thickness used.	QMFZ2 If made of plastic	--	3-04
All other plastic parts	various	various	Rated min. HB in thickness	QMFZ2	--	3-05

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Clause	Requirement + Test	Result - Remark	Verdict

and so on for Models starting with the Letter "A" and "BP"			used			
Rubber Rolls	various	various	--	--	--	3-05
Display, powered by a Limited Power Sourc	various	various	Printed wiring board rated min. V-1, 105°C	ZPMV2	--	3-01
Appliance inlet/mains switch combination	INALWAYS CORP	0711-1RS series	250V/10A	AXUT2/8	UR	3-06
Internal Primary Wiring	Various	Various	Min. 250V, min. AWG 18, 60°C	AVLV2/8	UR	3-08
Power supply	PHIHONG TECHNOLOGY CO LTD	PSM165-207	100-240Vac, 2.5A, 50-60Hz, Output: +24Vdc/6.88A, +38Vdc/0.75A	QQGQ2/8	UR	3-09
Power supply alternate	PHIHONG TECHNOLOGY CO LTD	PSM165-207-EFF-R	100-240Vac, 2.5A, 50-60Hz, Output: +24Vdc/6.88A, +38Vdc/0.75A	QQGQ2/8	UR	
Printed wiring Boards	various	various	Rated min. V-1, 105°C	ZPMV2	As mentioned in the UL recognition card	3-08
Connectors (Primary)	various	various	Rated min. 250V	ECBT2, RTRT2	As mentioned in the UL recognition card	3-08
Connectors (Secondary)	various	various	Rated min. V-2	ECBT2, RTRT2 or QMFZ2	As mentioned in the UL recognition card	3-10
Wiring (Secondary)	various	various	Rated min. 40V, 60°C	AVLV2/8 or insulated with PVC, TFE, PTFE, FEP, neoprene or	--	3-10

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Clause	Requirement + Test	Result - Remark	Verdict

				poplyimide		
Stepper Motor	various	various	Metal Enclosure (totally enclosed)	--	--	3-11
Print Head, not shown	various	various	--	--	--	
Lithium Battery mounted on CPU	various	various	Min. 3Vdc, Max Abnormal Charging Current of 5mA,	BBCV2	As mentioned in the UL recognition card	3-08
Lithium Battery Protection circuitry IC6 and Resistor (R52) mounted on CPU	Ramtron International Corporation	FM3104-X, whereby "X" may be any character	Resistor (R52) rated 1kOhm	--	--	3-08
Integrated IC15A/B/C/D mounted on CPU to ensure the LPS conditions of the 5V outputs, e.g. to the display	Texas Instruments Inc.	TPS2044B Series	2.7-5.5.V, Cont. Current per output 0.5A, Protective Current 5A	QVGS2	As mentioned in the UL recognition card	3-08
Thermistor (F1/F3) mounted on CPU to ensure the LPS conditions of the 3V outputs, e.g. to the display	BOURNS INC	MF-MSMF020	Vmax dc 60V, Ih=200mA, It=400mA, Imax=40A, Isc=40A	XGPU2	As mentioned in the UL recognition card	3-08
Thermistor (F2), mounted on CPU	BOURNS INC	MF-SM150/33	Vmax dc 33V, Ih=1.5A, It=3A, Imax=40A, Isc=40A	XGPU2	As mentioned in the UL recognition card	3-08
Fuse (F4) mounted on CPU	Littelfuse	451 Series	125V, 1.5A,	JDYX2	As mentioned in the UL recognition	3-08

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

					card	
FAN located in SELV Circuitry only installed in models MACH4/XXX and BRADY IP Series	ebmpapst	414 series	24Vdc, min. 8m³/h	GPWV2	UR	3-09
Alternate Fan	Various	Various	24Vdc, min. 8m³/h	GPWV2	UR	3-09
Accessory (Optional), Applicator 5949002	cab	Applikator 1000-300	Cylinder in length of 300mm, metal enclosure , PWB rated min. V-1, 105°C, connectors rated min. V-2. Wires (AVLV2/8) or insulated with PVC, TFE, PTFE, FEP, neoprene or poplyimide	--	--	3-13
Accessory (Optional), Applicator 5949205, not shown	cab	Applikator 1000-220-PVT	Cylinder in length of 220mm, metal enclosure , PWB rated min. V-1, 105°C, connectors rated min. V-2. Wires (AVLV2/8) or insulated with PVC, TFE, PTFE, FEP, neoprene or poplyimide	--	--	
Nameplate Label	various	various	capable for applying to plastic and metal enclosure	PGJ12	--	
Knife on top for models MACH4/XXX and BRADY IP Series only	various	5541112	steeel, Material 90MnCrV8	--	--	
Knife below for models MACH4/XXX and BRADY IP Series only	various	5541113	steeel, Material 90MnCrV8	--	--	
Alternate for models MACH4/XXX and BRADY IP Series only motor for knife option	WEDO GmbH	SRS-395PA-15145-R	24Vdc	--	--	

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

Alternate for models MACH4/XXX and BRADY IP Series only motor for knife option	various	various	24Vdc	---	--	
Board BDC for models IP Series only	various	various	PWB rated min. V-1, 105°C enclosed by metal	ZPMV2	-	

Enclosure Photographs

Supplement Id	Description
3-01	Overall view of printer MACH4/XXX
3-02	Printer MACH4/XXX decorative covers opened
3-03	Overall view of the printer a8+
3-04	Side view of the printer a8+
3-05	Printer a8+ cover of the rolls opened
3-06	Rear view of the printer a8+
3-07	Rear view of the printer MACH4
3-08	Printer a8+ internal view
3-09	Printer MACH4 power supply location
3-10	Printer MACH4 CPU Location
3-11	Printer a8+ CPU Board removed to the left side
3-12	Printer MACH4 Stepper Motor
3-13	Overall view of applicator 1000-300
3-14	Overall view opposite side of applicator 1000-300
3-15	Internal view of applicator 1000-300
3-16	enclosure knife option
3-17	other view to enclosure of knife option
3-18	knife enclosure opened
3-19	BDC Board enclosed by metal totally
3-20	BDC Board metal cover removed
3-21	A4+M/XXX roll mounting system

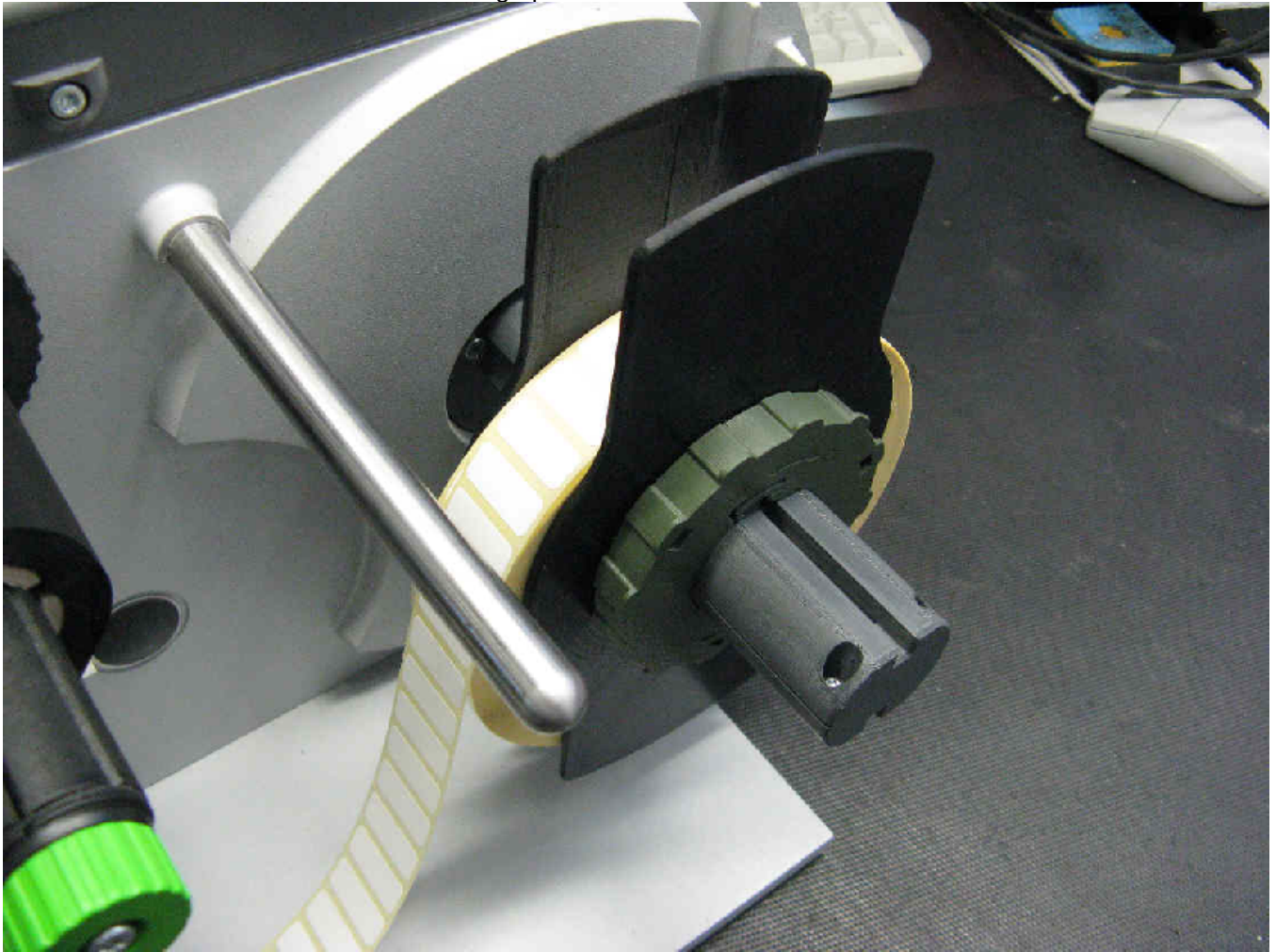
Photographs ID 3-19



Photographs ID 3-20



Photographs ID 3-21



Issue Date: 2007-05-04
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Report Reference #

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Enclosure
Miscellaneous

Supplement Id	Description
7-01	Tyco UL Mark label

Misc ID 7-01



Enclosure
Test Record

Description
Test Record 1
Datasheetpackage 1 of 2
Datasheetpackage 2 of 2
Test Record 2
Mach4 Data sheets cutter option
Models starting with A and BP one side of the fire enclosure made of plastic instead of steel
Test Record 3
Test Datasheet for the alternate power supply PSM165-207-EFF-R
Test Record 4

Issue Date: 2007-05-04
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Report Reference #

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Test Record No. 4

Testing of the models A4+M/XXX, TE3112, TE3124 were not considered necessary based on the results of previous investigation which covers these non safety relevant changes as well.