

**FCC CLASSII PERMISSIVE CHANGE COVER LETTER**

Date: 15<sup>th</sup> July 2009

Elite Electronic Engineering, Inc.  
1516 Centre Circle  
Downers Grove, IL 60515

**FCC ID: XJLTMS9000**  
**FCC FRN: 0018740217**

Dear Sir,

Subject: Certification of TMS9000 models with antenna changes

In accordance with FCC Application r1.7, we, Honeywell, hereby request to certify remaining TMS9000 models for FCC with Class II permissive change. TMS models certified are 92012 and 92015 models with **FCC ID mentioned above**. The other models to be certified with antenna changes are 92011, 92013, 92014 and 92016. The changes include caliper coupling module and the rotor antenna modules. There is no change in remaining modules like Signal Processing Module, Power supply and RF cable

In support of **CLASSII PERMISSIVE CHANGE**, the following documents provide the rotor dimensions, caliper coupling module dimensions changes and corresponding photos.

Thank you.



Signature

Sincerely,

**NAME: Stephen Borthwick**

**TITLE: Senior Engineer**

**Honeywell**

Newhouse Industrial Estate

Block 1A, Motherwell

LA: ML1 5SB, GBR

Phone No.: +1-44-1698-481497

Cell No.: +1 614-535-8261

Fax No.: +1-44-1698-481014

E-mail: **Stephen.Borthwick@honeywell.com**

## Rotor Photos

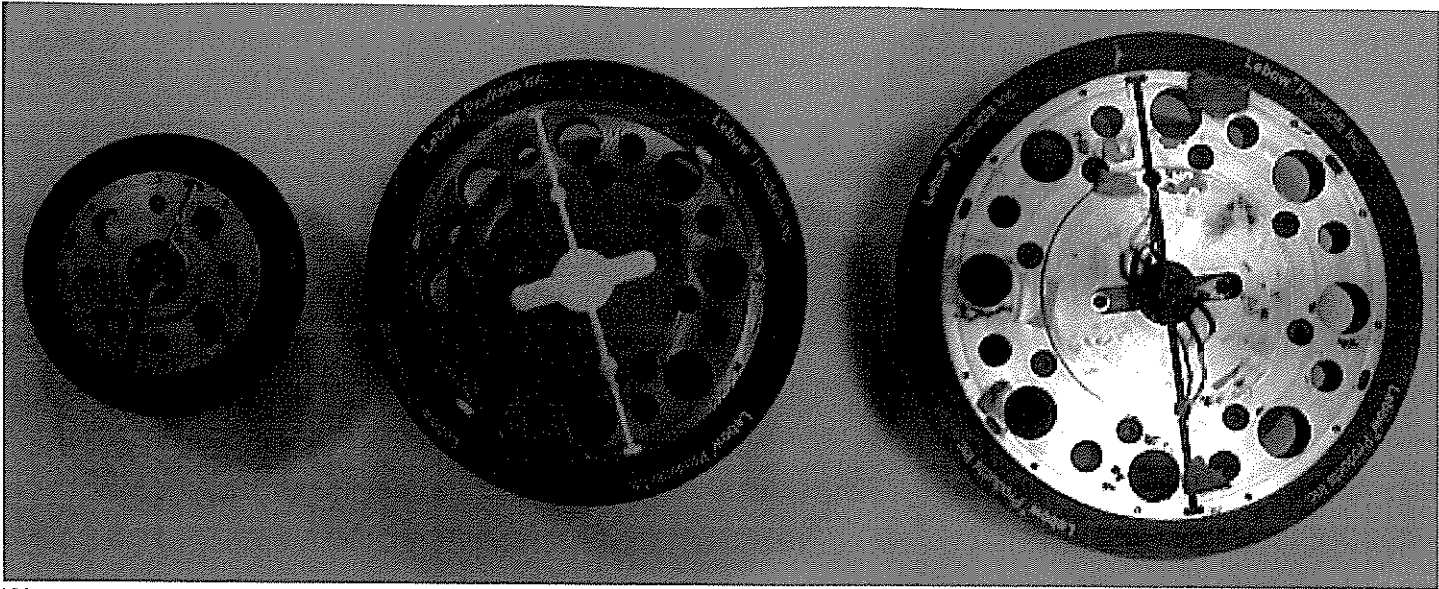


Figure 1: 92011(un-potted)

92013

92014 (un-potted)

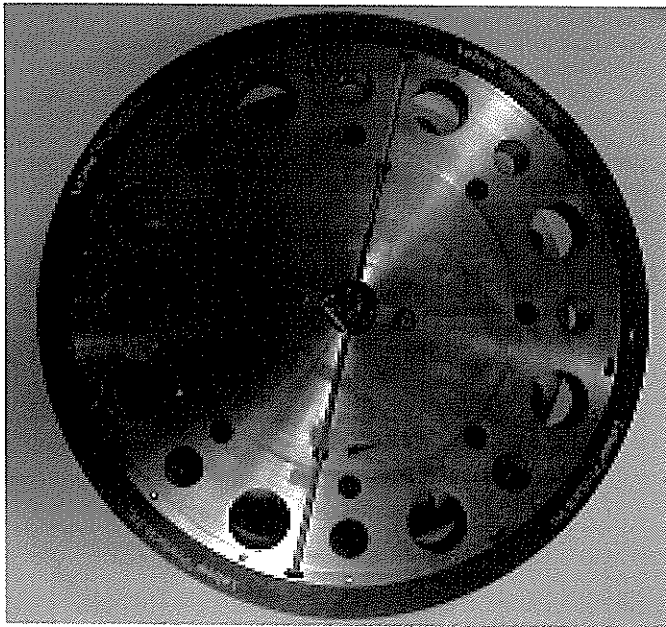


Figure 2: 92016 (un-potted)

**Rotor Drawing: DIN 65**

DESIGN UNITS: INCH  
TOLERANCES UNLESS NOTED:

NO PLACES	X	±
ONE PLACE	X	±
TWO PLACES	.XX	±
THREE PLACES	.XXX	±
ANGLES	X	3.0°

THIRD ANGLE PROJECTION

ANTENNA QUALITY CHECKS:  
1. RFE INPUT VOLTAGE  
2. TRANS RATE IN FAST MODE  
3. QUALITY TEST

NOTES:  
1. SENSOR IS TO SUPPLY INSPECTION REPORT INCLUDING DIMENSIONS AND QUALITY CHECKS FOR ALL SPECIFICATIONS.  
2. MATERIAL SPECIFICATION: COPPER COMPLIANT F74  
COPPER THICKNESS: 1.07 MIN

259 MAX LONG X .070 MAX WIDTH  
AND .040 MAX HEIGHT SOLDER PADS  
AND SOLDERED ON CAPACITORS  
AND SOLDERED ON ALL SOLDER  
AND CENTERED ON A Ø2.795 B.C.  
Ø 0.150 B.A.

VIAS Ø .100 MAX  
Ø .040 MAX HOLE  
ON A Ø 3.1 B.C. PERMITTED

SCALE 0.150

REV DOCUMENT CHANGED BY CHECK  
- - - - -

027-LW525-018  
HONEYWELL  
PART NUMBER

**TECHNICAL DRAWING: ROTOR RING PCB**

**Part Number:** 021-LW525-022

**Revision:** 06 DEC 07

**Notes:**

1. RING INPUT VOLTAGE:  $\geq 6.5 \text{ VDC}$
2. TRANS RATE IN FAST MODE:  $\geq 8034 \text{ SAMPLES/SEC}$
3. QUALITY TEST: 100%

**Material Specification:** ROHS COMPLIANT FR-4, COPPER THICKNESS: 1 oz MIN

**Design Units:** INCH

**Tolerances Unless Noted:**

Feature	Dimension	Tolerance
NO PLACES	X	$\pm 0.02$
ONE PLACE	X	$\pm 0.02$
TWO PLACES	XX	$\pm 0.02$
THREE PLACES	XXX	$\pm 0.02$
ANGLES	X	$\pm 3.0^\circ$

**Third Angle Projection**

**Scale:** 0.500

**Pin Dimensions:**

- Pin Diameter:  $\phi 0.0150 \text{ BIA}$
- Pin Spacing:  $\phi 0.4310 \text{ B.C.}$
- Pin Height:  $0.121 \text{ inches}$

**Pin Notes:**

- 250 MIL LONG X 0.010 MIL WIDTH AND 0.040 MIL HEIGHT SOLDER PADS AND SOLDERED ON CAPACITORS
- THE PINS ARE EQUALLY SPACED AND CENTERED ON A  $\phi 0.4310 \text{ B.C.}$

**Side View Dimensions:**

- Ring Thickness:  $0.063 \text{ inches}$
- Pin Diameter:  $\phi 0.0150 \text{ BIA}$

**Top View Dimensions:**

- Ring Diameter:  $0.500 \text{ inches}$

**Revision Table:**

REV	DOCUMENT	CHANGED BY	CHECK
-	-	BNK	06 DEC 07

**Part Number:** 021-LW525-022

**Part Name:** ROTOR RING PCB

**Part Size:** DIN 120MM

**Part Material:** ROHS COMPLIANT FR-4, COPPER THICKNESS: 1 oz MIN

**Part Notes:**

1. RING INPUT VOLTAGE:  $\geq 6.5 \text{ VDC}$
2. TRANS RATE IN FAST MODE:  $\geq 8034 \text{ SAMPLES/SEC}$
3. QUALITY TEST: 100%

[illegible]

[illegible]

# Caliper Coupling Module Drawings

LEBOW COUPLING PCB (for 65 and 90mm ANTENNAE)

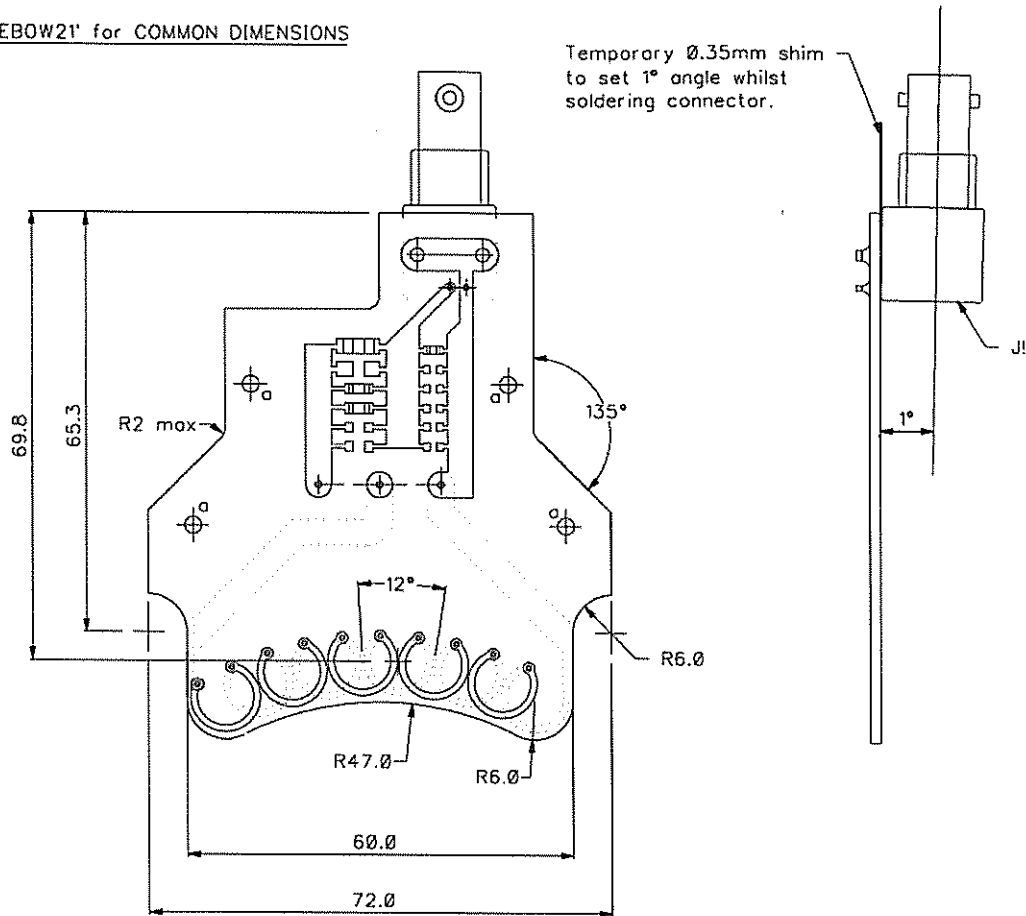
MATERIAL:- 1.6mm D.S. 4oz PTH FR4

QTY:- 2 PER SYSTEM

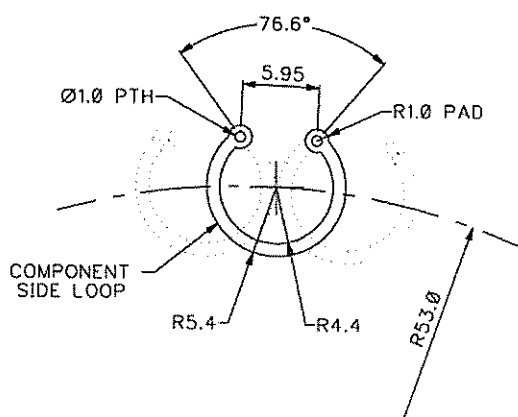
SCALE :- FULL SIZE

EPOXY SOLDER RESIST BOTH SIDES EXCEPT AREAS 'n'

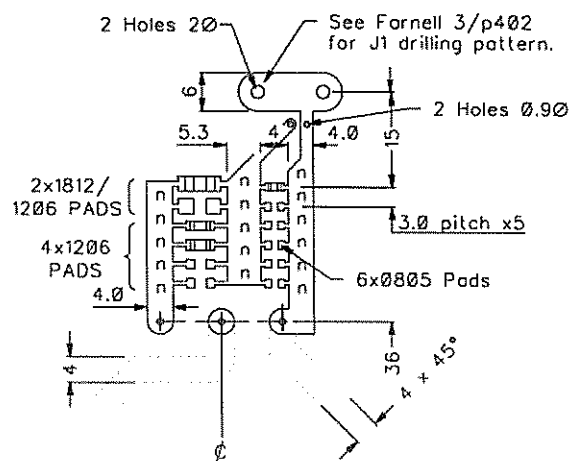
SEE 'LEBOW21' for COMMON DIMENSIONS



LOOP DETAIL x2



TRACKING DETAIL



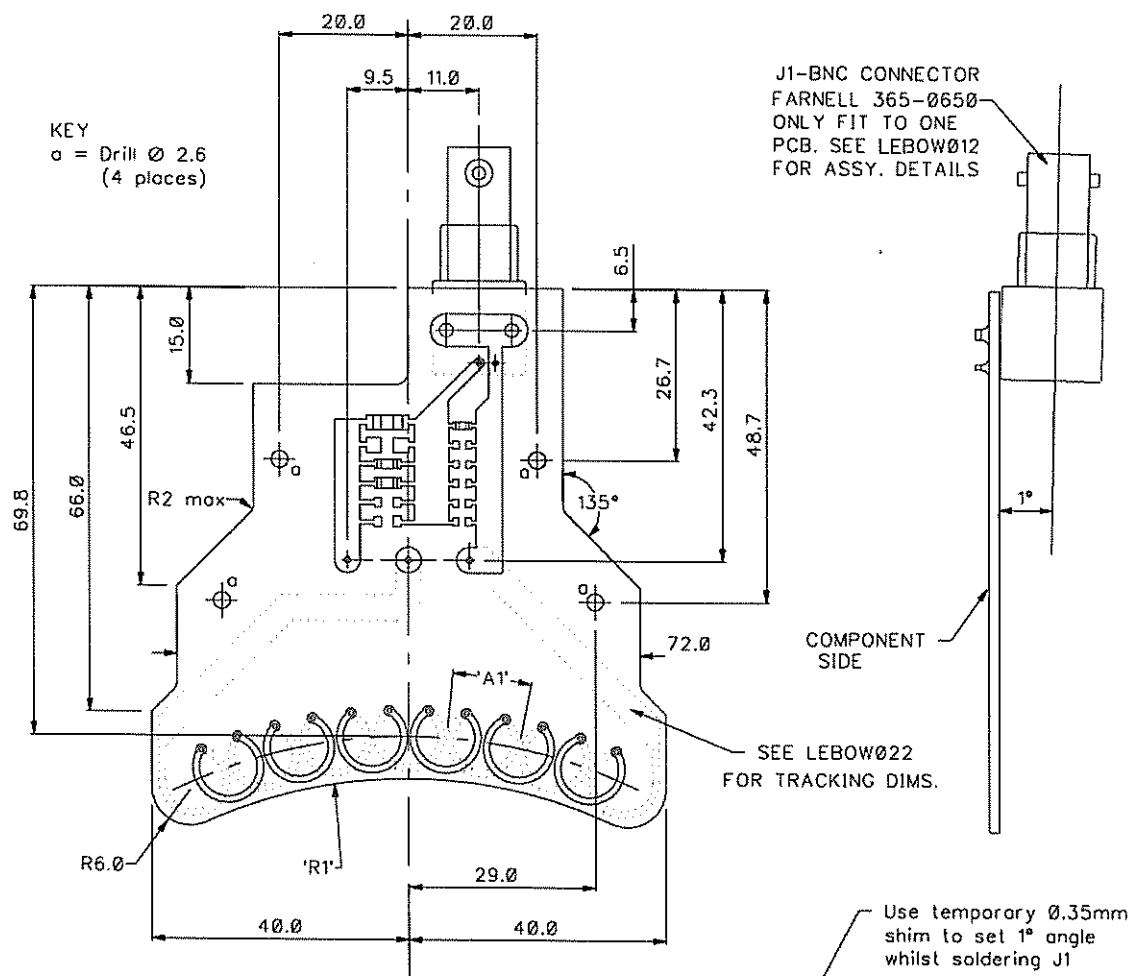
LEBOW22 180803 K&L SERVICES

# LEBOW COUPLING PCB (for 120,150,180 & 225MM ANTENNAE)

MATERIAL:- 1.6mm D.S. 4oz PTH FR4

QTY:- 2 PER SYSTEM

SCALE :- FULL SIZE



LOOP DETAIL x2

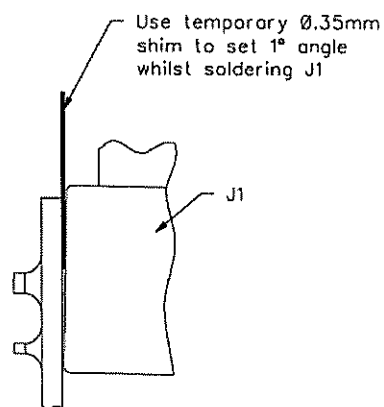
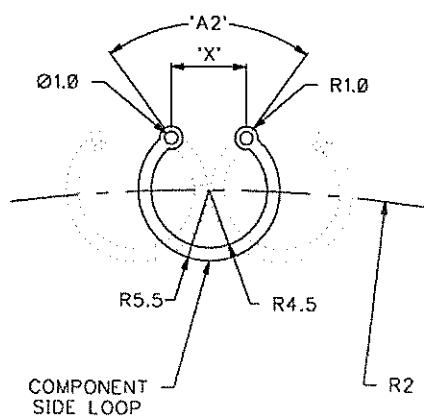


TABLE 1

DIMENSION	'DIN' ANTENNA SIZE	
	120/150	180/225
A1	8.00°	5.60°
A2	73.95°	71.5°
R1	75.5	109.5
R2	81.5	115.5
X	6.015	5.843

LEBOW13 iss2 050803 K&L SERVICES



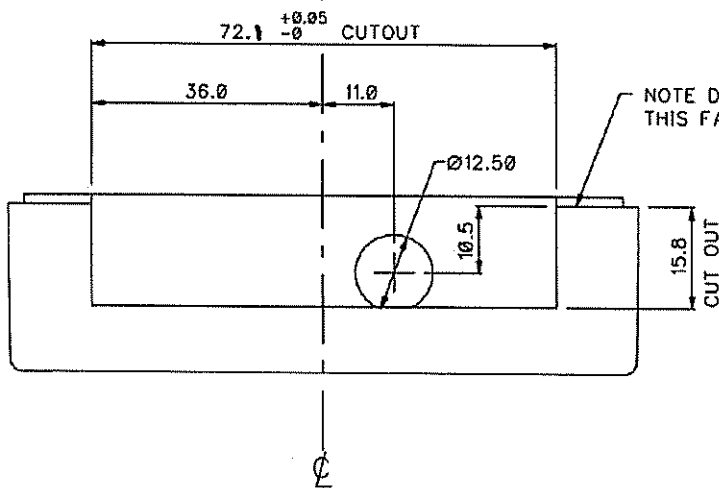
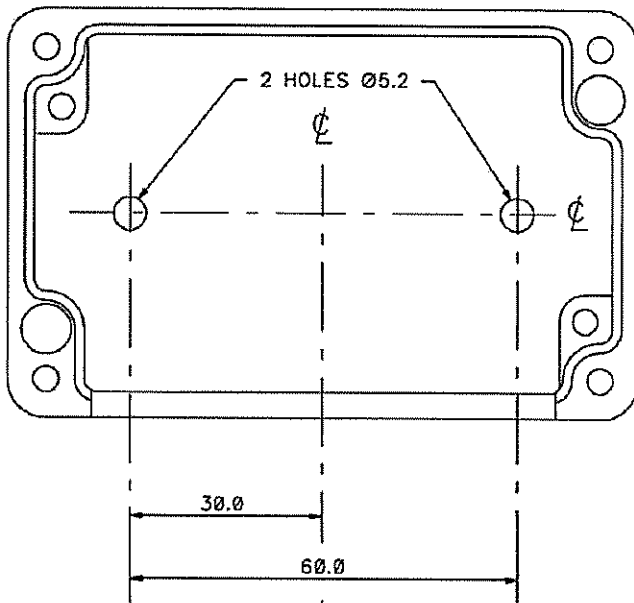
# LEBOW COUPLING MODULE

DET 1 - ENCLOSURE MODIFICATION

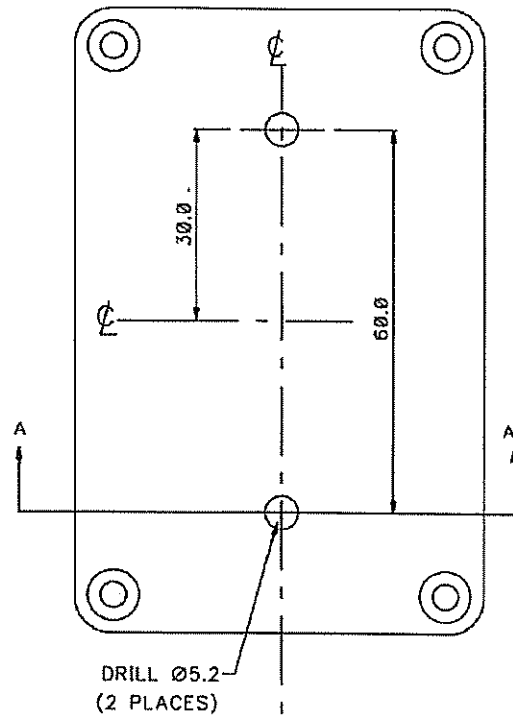
MATERIAL :- Fornell 353-6099 Enclosure

SCALE - FULL SIZE (A4)

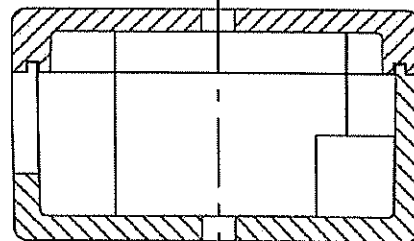
BASE



LID + BASE



SECTION 'A - A'



TOLERANCES (UNLESS STATED OTHERWISE)

- Ø D.P. +/- 0.3 mm.
- 1 D.P. +/- 0.1 mm.
- 2 D.P. +/- 0.03 mm.

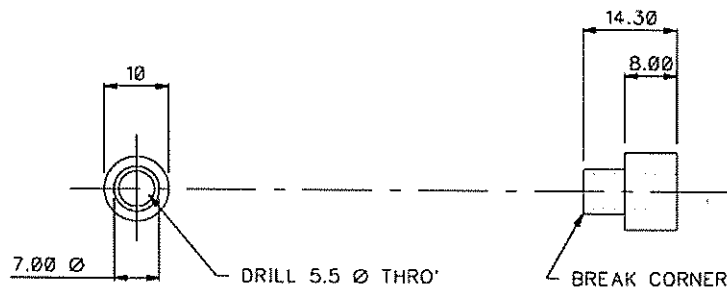
LEBOW23 iss 081003 K&L SERVICES

# LEBOW COUPLING MODULE DETAILS

DET 4 QTY :- 4 PER COUPLING ASSEMBLY

MATERIAL :- 'SPEEDAL' or St.Steel.

SCALE - FULL SIZE (A4)



TOLERANCES (UNLESS  
STATED OTHERWISE)

Ø D.P. +/- 0.3 mm.

1 D.P. +/- 0.1 mm.

2 D.P. +/- 0.03 mm.

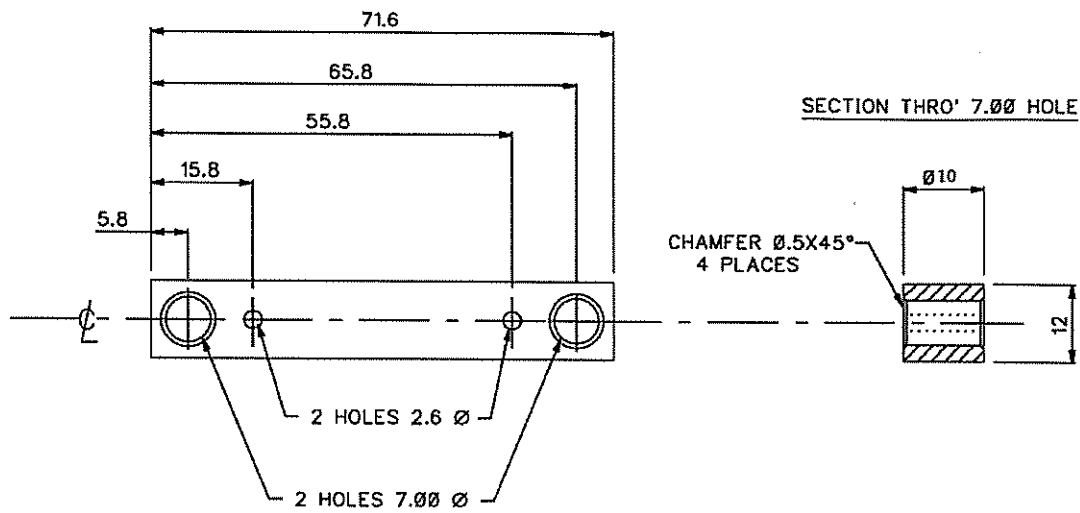
LEBOW25 iss2 081003 K&L SERVICES

# LEBOW COUPLING MODULE DETAILS

DET 2 QTY :- 1 PER COUPLING ASSEMBLY

MATERIAL :- NATURAL ACETAL COPOLYMER

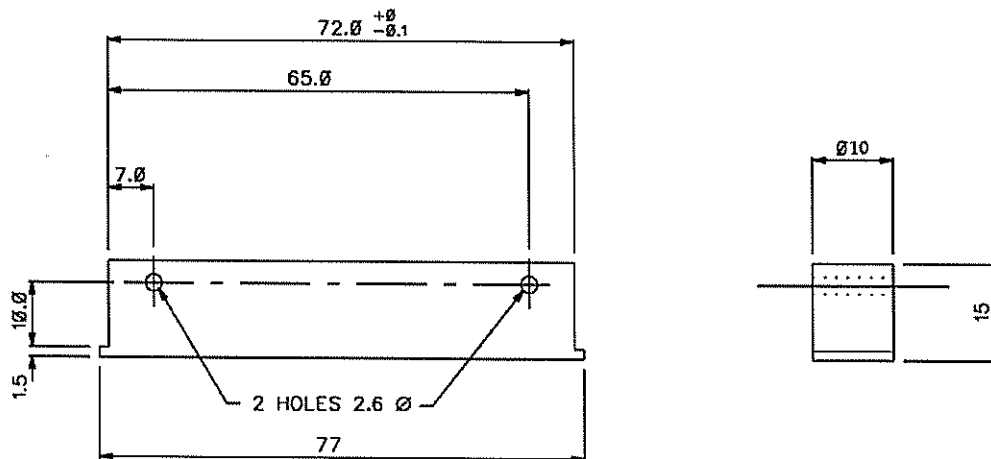
SCALE - FULL SIZE (A4)



DET 3 QTY :- 1 PER COUPLING ASSEMBLY

MATERIAL :- ACETAL (NATURAL COLOUR)

SCALE - FULL SIZE (A4)



TOLERANCES (UNLESS STATED OTHERWISE)

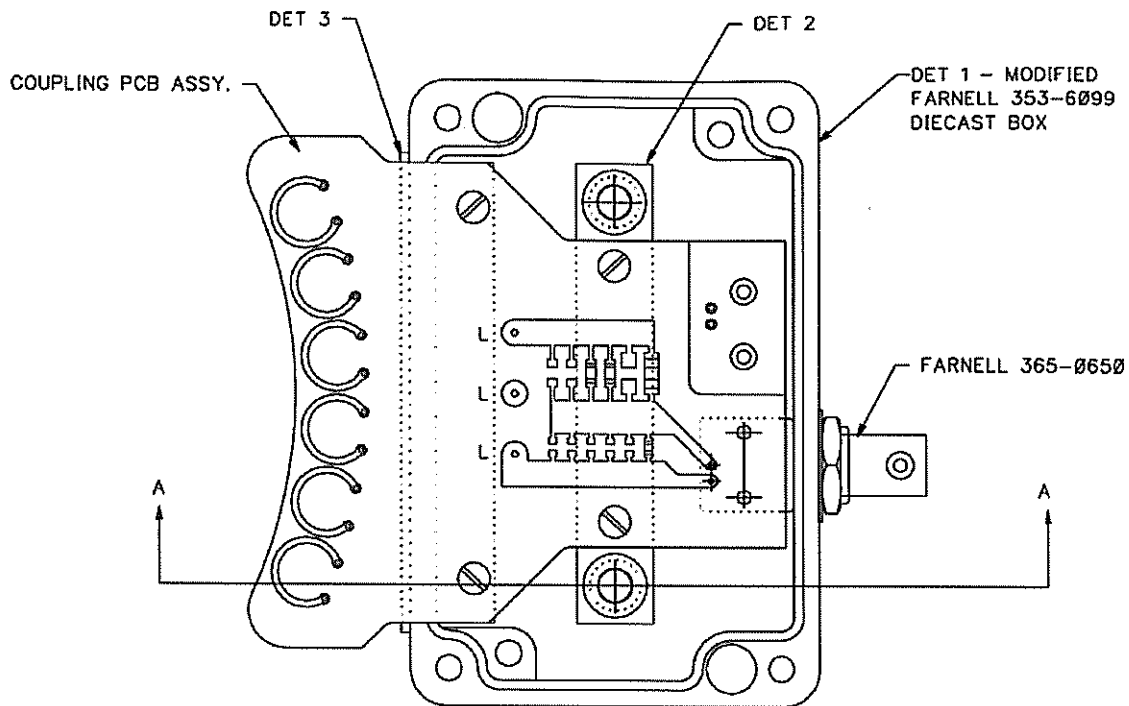
Ø D.P. +/- 0.3 mm.  
1 D.P. +/- 0.1 mm.  
2 D.P. +/- 0.03 mm.

LEBOW24 iss2 081003 K&L SERVICES

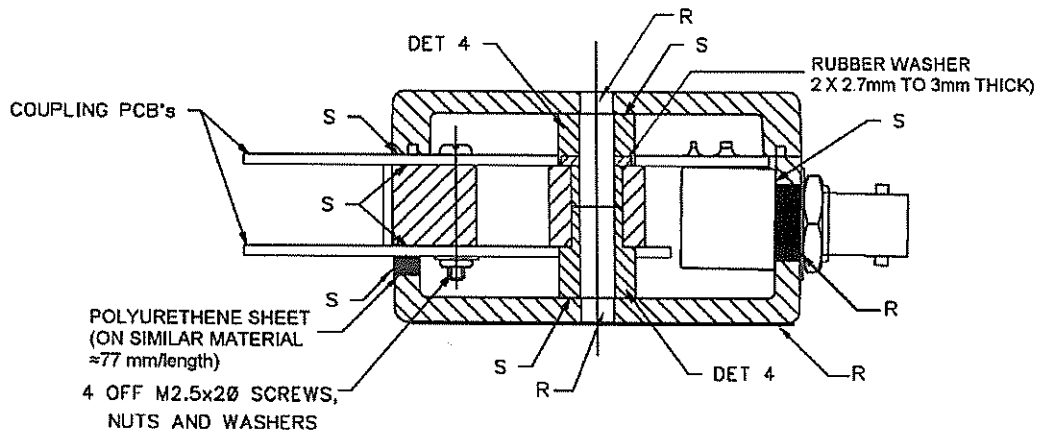
# LEBOW COUPLING MODULE – G.A.

SCALE – FULL SIZE (A4)

LID OMITTED FROM THIS VIEW



## SECTION 'A-A'



NOTES :-

- 1) APPLY SEALANT TO FACES 'S'
- 2) SOLDER 18 SWG TCW LINKS TO LOCATIONS 'L' (3 PLACES)
- 3) REMOVE PAINT ON SURFACE MARKED "R"

LEBOW20 150803 K&L SERVICES

HONEYWELL PART NUMBER 029-6555-00		REV I		DOCUMENT -		CHANGED BY -		CHECK -	
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029-6555-03	024-0749-03	80	14.3	72	4	109.0	0.5
029-6555-02	024-0749-02	80	14.3	72	4	75.5	0.5
029-6555-01	024-0749-01	60	17	72	6	46.5	0.5
PART NUMBER	CCM VERTICAL PCB REFERENCE (HONEYWELL PART NO.)	"A"	"B"	"C"	"D"	"R"	"T"

NOTES:

1. MANUFACTURER : WURTH ELECTRONICS
2. MANUFACTURER PART NUMBER : 30405

DESIGN UNITS: MM		DRAWN BNK		20 NOV 08		<b>Honeywell</b>	
TOLERANCES UNLESS NOTED:		CHECK PREM		20 NOV 08			
NO PLACES ONE PLACE TWO PLACE THREE PLACE ANGLES		$\pm$ $\pm$ $\pm$ $\pm$ $\pm$		THIS DRAWING COVERS A PROPRIETARY ITEM AND IS THE PROPERTY OF HONEYWELL. THIS DRAWING IS NOT TO BE COPIED OR USED WITHOUT THE PERMISSION OF HONEYWELL.  INTERPRET PER ASME Y14.5M-1994 OTHER HONEYWELL ENGINEERING STANDARDS MAY APPLY		TITLE <b>FERRITE ABSORBER SHEET</b>	
THIRD ANGLE PROJECTION		Pro/ENGINEER		3D SCALE 1:1		SIZE <b>A4</b>	
						TYPE/CAGE CODE/DRAWING NAME <b>029-6555-00</b>	
						REV <b>1</b>	
						SHEET 1 OF 1	