SPECIFICATION

	DOC NUMBER	SPECIFICATION	REV	PAGE	DATE
KDE	C1 - 305	**KDR - 1000 SERIES** **MANUAL SWIPE CARD READER**	E	1 of 15	1999. 5. 28 .

RESP.DEPT	R&D 2		RELATED DEPTS					
CHECKED	SIGN	DATE	DEPT	ASSENT	DATE	DEPT	ASSENT	DATE
ORIGINATIOR								
CHECK #1								
CHECK #2								
CHECK #3								
CHECK #4								
CHECK #5						DOC CONTROL		
						APPROVAL		

REMARKS

REVISION SHEET

PAGE	1	2	3	4	5	6	7	8	9	10
REVISION	E	E	D	E	D	D	D	D	D	D
PAGE	11	12	13	14	15	16	17	18	19	20
REVISION	D	E	E	D	A					
PAGE										
REVISION										
PAGE										
REVISION										
PAGE										
REVISION										

REVISION HISTORY

CHECK	DATE	DESCRIPTION	Page	Rev.
	1992. 5. 26.	INITIALIZE	ALL	A
	1994. 5. 20.	PACKAGE FOR SERIES	ALL	B
	1994. 12. 1.	NEW IC KD-2320 AND NEW HEAD MOUNTING DESIGN	ALL	C
	1996. 4. 16.	HEAD LIFE TIME & DIMENSION CHANGE	1,2,4, 12,13	D
	1999. 5. 28	NEW IC KD-2420A CHAMGE	ALL	E

INDEX

1. OVERVIEW

KDR-1000 series is a set of manual swipe type modules that read magnetically encoded data from magnetic stripes that conform to ISO standards and decode them to CLS,RCL, and RDT.

2. CONFIGURATION TABLE

MODEL	DIMENSION W x D x H(mm)	ISO TRACKS						REMARKS
		SINGLE			DOUBLE		TRIPLE	
		□	□	□	□,□	□,□	□,□,□	
KDR-1100	21.4 x 99 x 25	1110	1120	1130	1150	1160	1180	
KDR-1101	30 x 99 x 29	1111	1121	1131	1151	1161	1181	*
KDR-1300	27 x 99 x 28.5	1310	1320	1330	1350	1360	1380	
KDR-1301	31 x 99 x 32.5	1311	1321	1331	1351	1361	1381	*
KDR-1302	29.5 x 99 x 28.5	1312	1322	1332	1352	1362	1382	**
KDR-1400	22.4 x 90 x 24	1410	1420	1430	1450	1460	1480	
KDR-1402	23.7 x 90 x 24	1412	1422	1432	1452	1462	1482	**
KDR-1500	22 x 43 x 23	1510	1520	N/A	1550	N/A	N/A	

* WITH COVER
** WITH GND LUG.

3. FEATURES

3.1 3-Dimensional Head Mounting Design achieves Optimal Adhesion with Minimal Wear.
3.2 Universal Head Mounting makes Switching between Tracks Quick and Easy.
3.3 Silicone rubber-Action Card Guidance System aids Simple and Compact Structure.
3.4 Custom ICs provide 24% Jitter compensation over a Wide Range of Card Feeding Speeds.
3.5 High Coercive Magnetic Stripe up to 3,500Oe can be read.

4. ENVIRONMENTAL REQUIREMENTS

4.1 Operating Temperature and Humidity : 0 □ 50□ , 20 □ 90% RH
4.2 Conservation Temperature and Humidity : -20 □ 70□ , less than 95% RH
4.3 Vibration : Amplitude 2mm , 2 G , 10□55Hz/min in x,y,z direction
4.4 Shock Resistance : Up to 30 G, 11 msec

5. SPECIFICATIONS

5.1 Card Standard	ISO 7811		
5.2 Track No.	□ (IATA)	□ (ABA)	□ (MINTS)
5.3 Reading Method	F2F (FM)		
5.4 Recording Density	210 BPI	75 BPI	210 BPI
5.5 Recording Capacity	79 Characters (7-bit code)	40 Characters (5-bit code)	107 Characters (5-bit code)
5.6 Card Thickness	0.76 ± 0.08 mm		

5.7 Power Supply : 5V DC ± 5%
5.8 Power Consumption : Stand by : 3.5mA typ / at 5V (SINGLE)
Operation : Less than 8mA / at 5V
Stand by : 7.7mA typ / at 5V (DUAL)
Operation : Less than 15mA / at 5V
Stand by : 11.3mA typ / at 5V (TRIPLE)
Operation : Less than 20mA / at 5V
5.9 Ripple : Less than 50mVp-p
5.10 Reading Track Width : 1.5mm
5.11 Operation Locus : Indoors only
5.12 Card Feeding Speed : 10 □ 150 cm/sec (4-60 inch/sec)
5.13 Head Life time : 500,000 passes min.
5.14 Error Rate : Less than 0.5%
5.15 Insulation Voltage & Resistance : 500 V DC for 1min., 10MΩ or more at 500 V DC(Between ground and frame)
5.16 Weight : Approx. 45g

6. INTERFACE

	Single Track		Double Track		Triple Track	
Pin No.	Signal	Color	Signal	Color	Signal	Color
1	VCC	Red	VCC	Red	GND	Black
2	GND	Black	GND	Black	VCC	Red
3	CLS	Brown	$RDT_{1,2}$	Brown	RDT_1	Brown
4	RCL	Yellow	$RCL_{1,2}$	Orange	RCL_1	Orange
5	RDT	Orange	$CLS_{1,2}$	Yellow	CLS_1	Yellow
6			$RDT_{2,3}$	Green	RDT_2	Green
7			$RCL_{2,3}$	Blue	RCL_2	Blue
8			$CLS_{2,3}$	Purple	CLS_2	Purple
9	CLS : Card Loading Signal				RDT_3	Gray
10	RCL : Read Clock				RCL_3	White
11	RDT : Read Data Pulse				CLS_3	Pink

* Except KDR-1500
* Connector Housing : MOLEX 5264 - XX

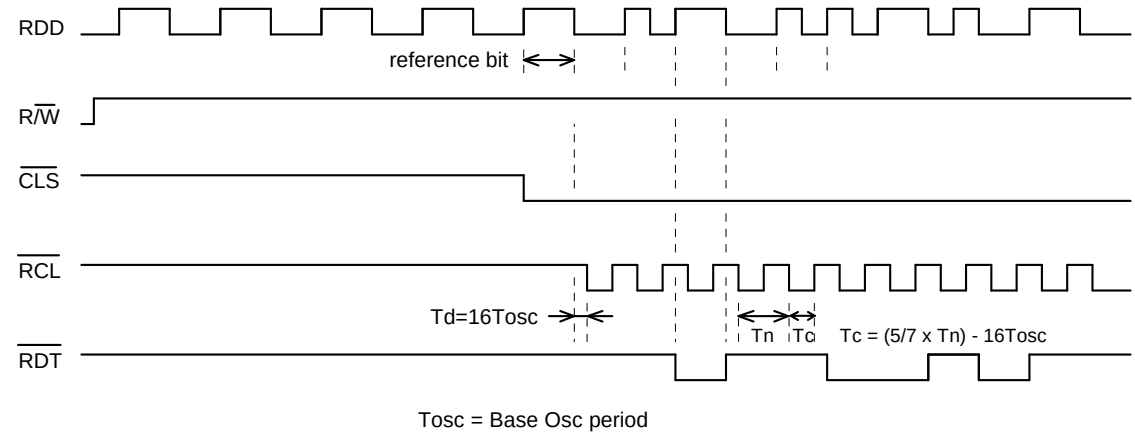
7. OUTPUT VOLTAGE LEVELS

7.1 High Level : 2.4V min (I_{OH} = 0.4 mA)
7.2 Low Level : 0.8V max (I_{OL} = 8.0 mA)

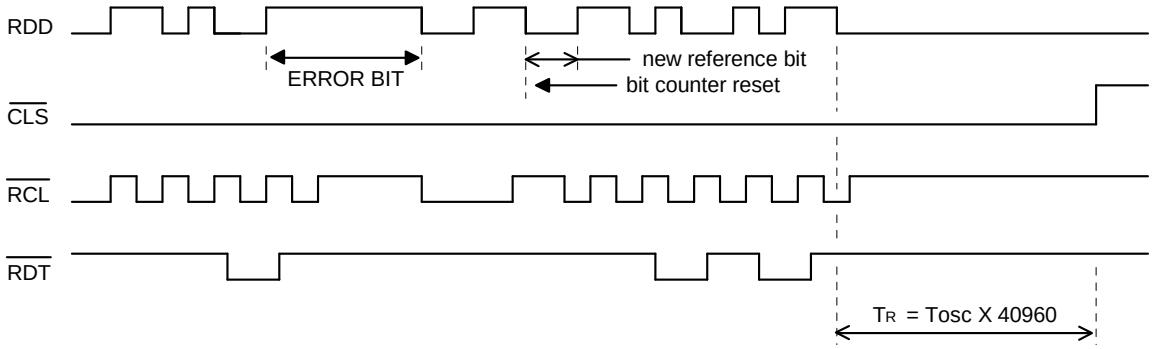
8. NOTES FOR BETTER OPERATION

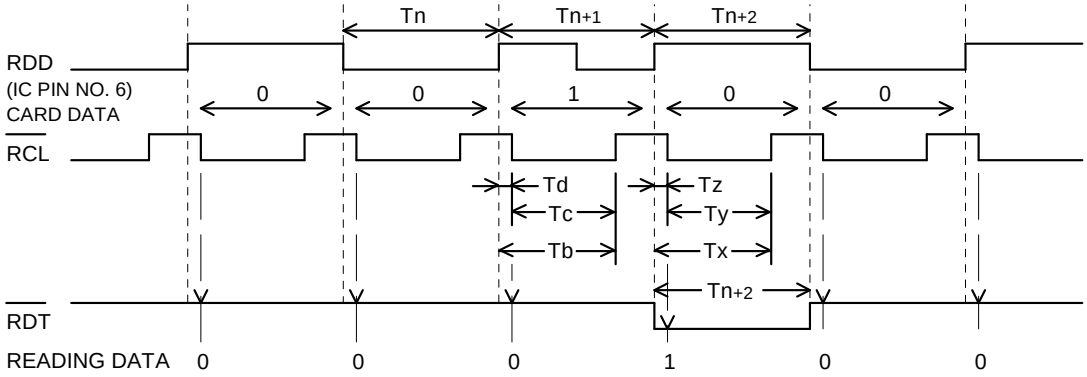
8.1 The card should be inserted in the specified direction.
8.2 Cards which meet standards should be used.
8.3 Cards should not be dirty, scratched or deformed.
8.4 Cards should not be placed near magnets or damp.
8.5 Standard condition is temperature at 20□ ± 5□ and humidity at 35% □ 60% RH.
8.6 Specification to be changed or revised without notice.

9. 9. TIMING CHART



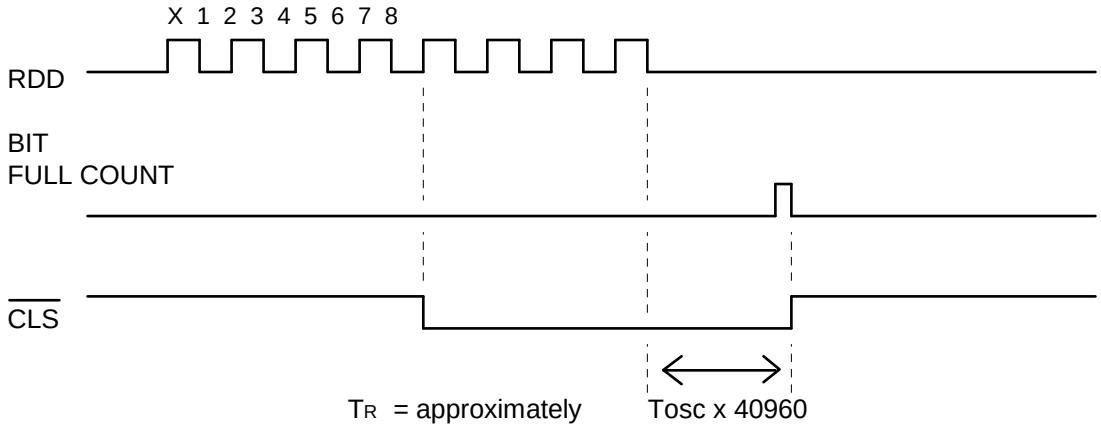
Tosc = Base Osc period





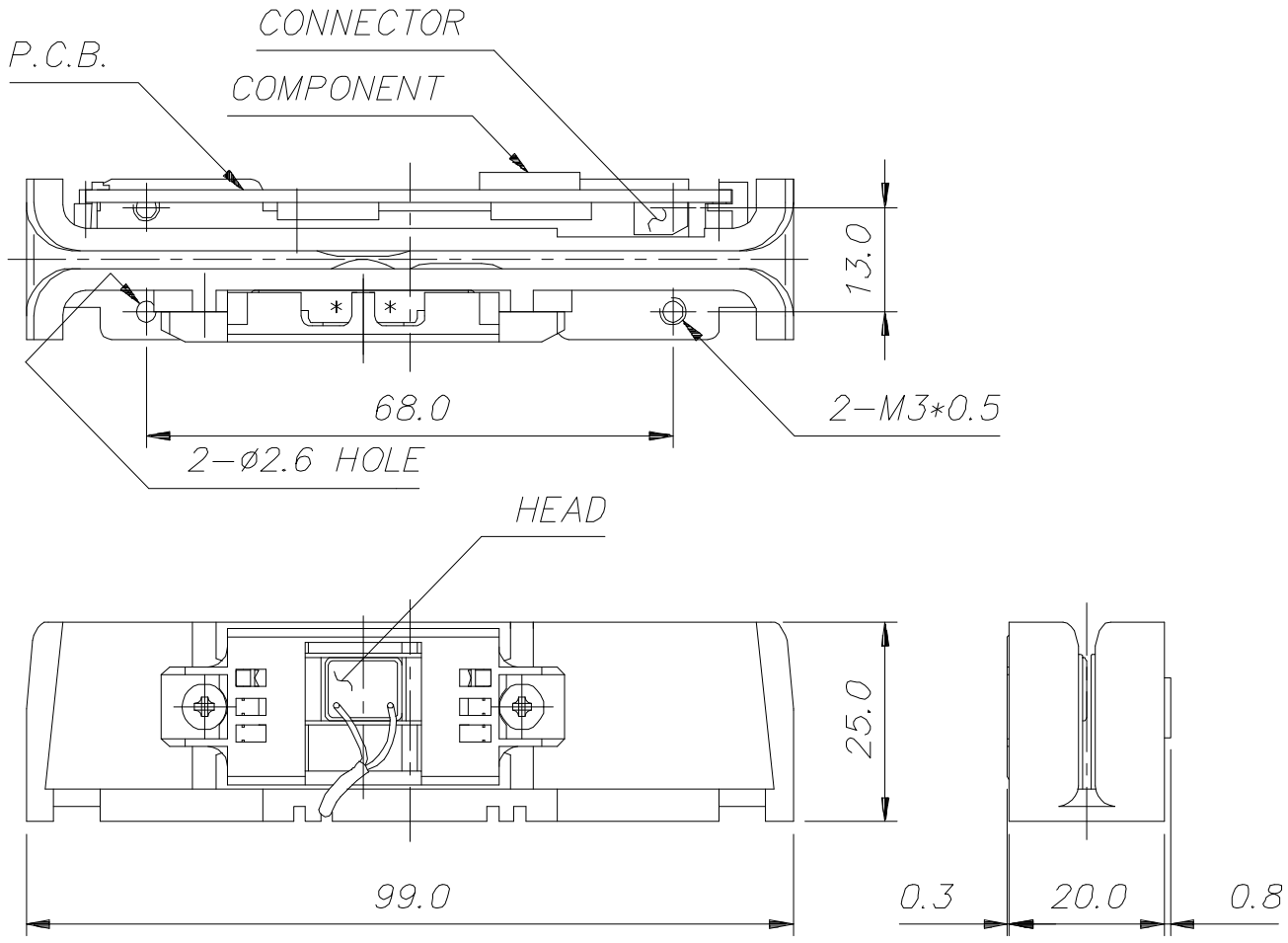
Tn+1		Tn+2	
Td	16 Tosc	Tz	16 Tosc
Tc	(5/7 x Tn) - Td	Ty	(5/7 x Tn^{+1}) - Tz
Tb	5/7 x Tn	Tx	5/7 x Tn^{+1}

. $\overline{CLS}$ generation (SELECT input voltage is low)

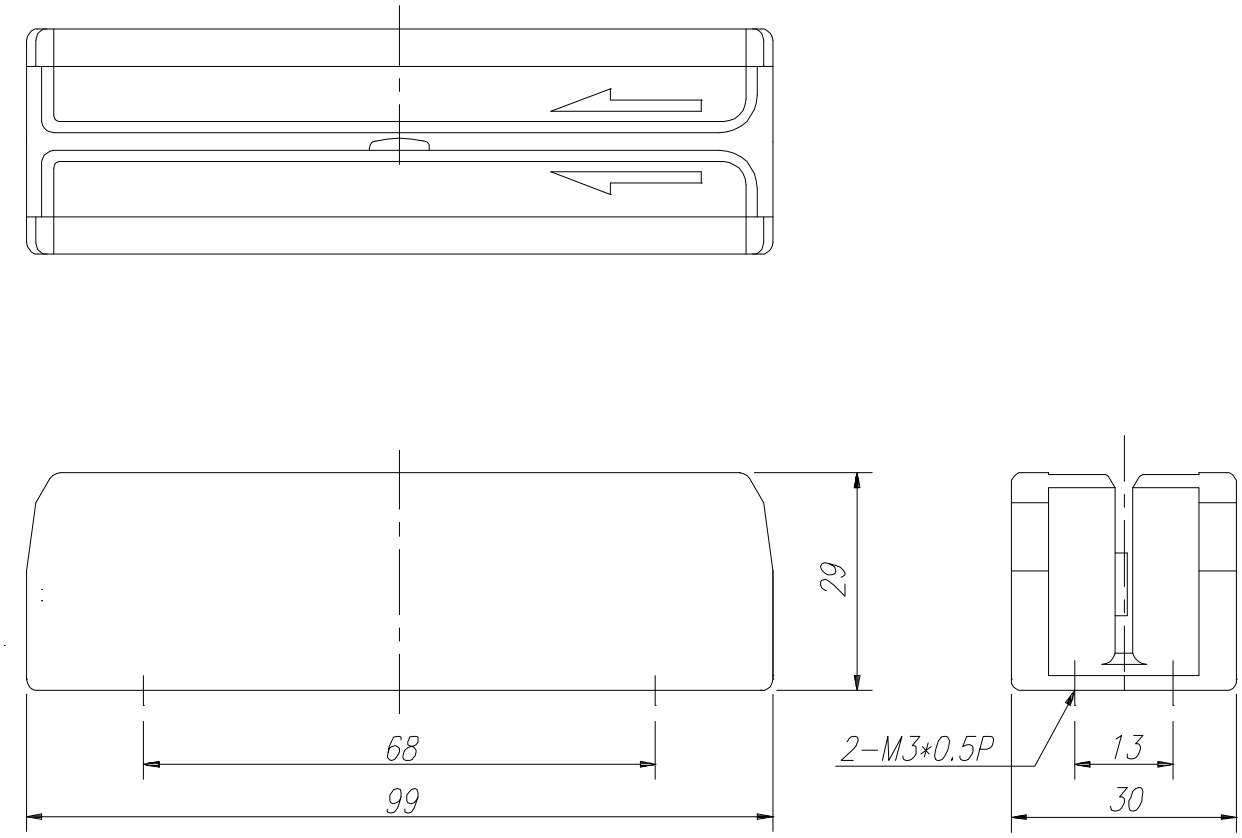


10. OUTLINE DRAWINGS

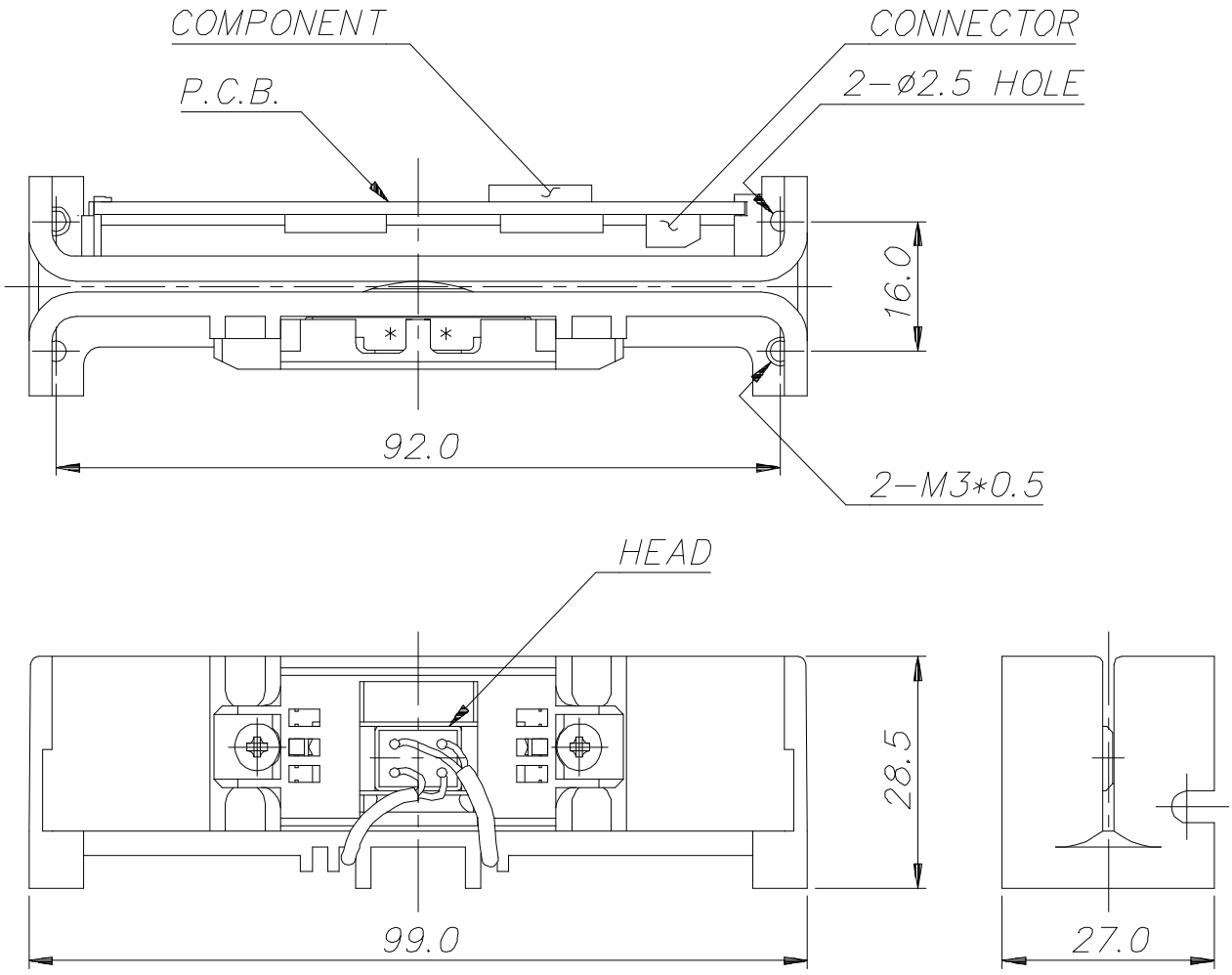
10.1 KDR - 1100



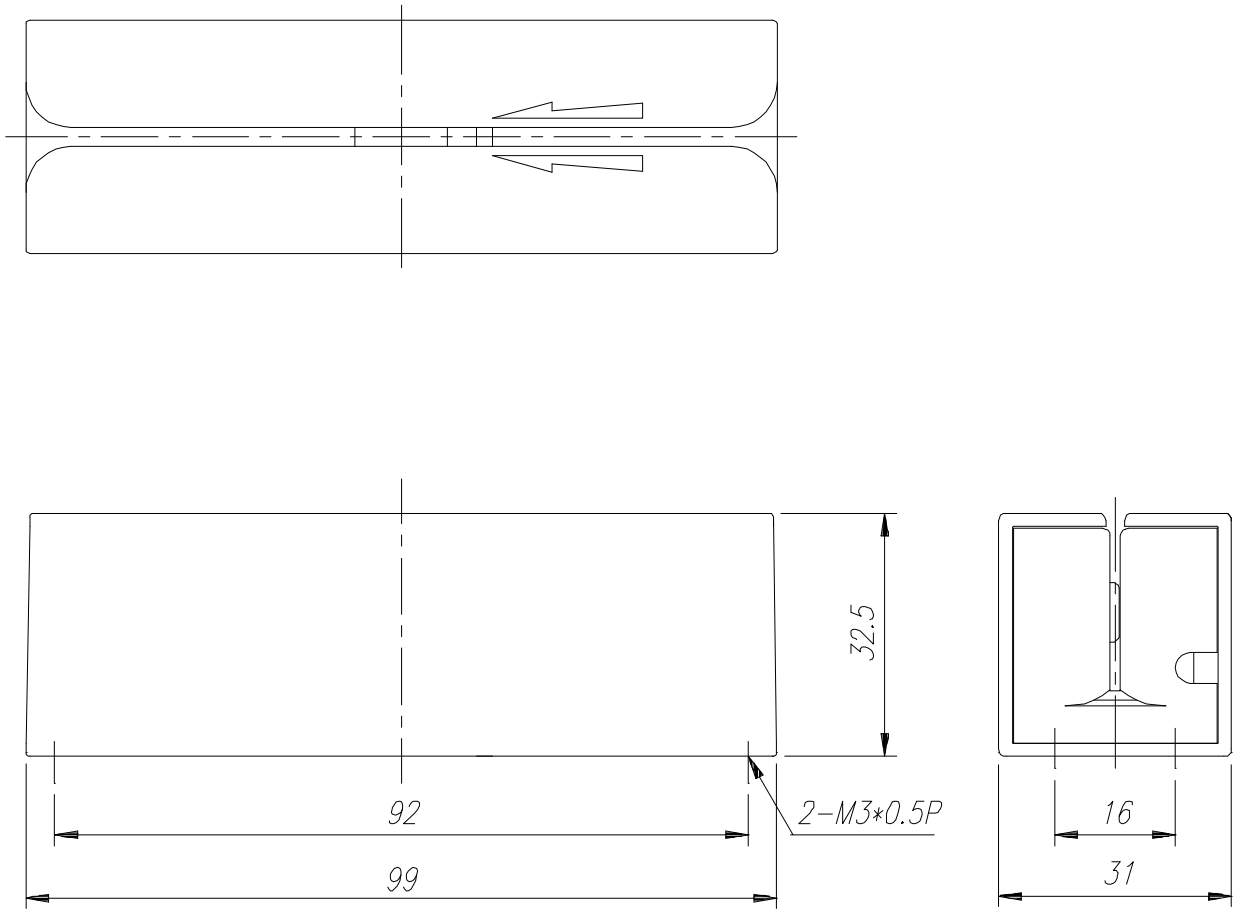
10.2 KDR - 1101



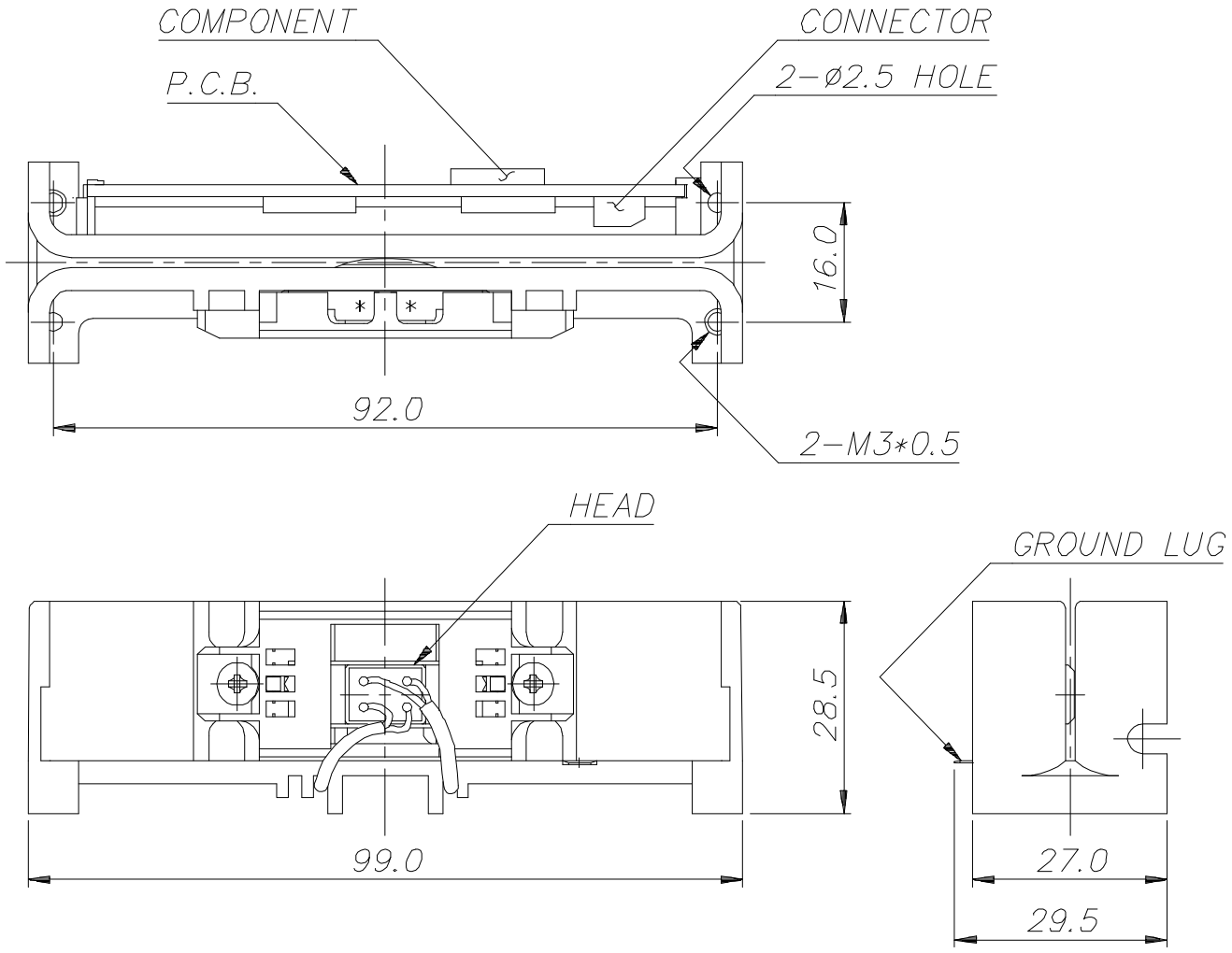
10.3 KDR - 1300


COMPONENT
P.C.B.
CONNECTOR
2-ø2.5 HOLE
16.0
92.0
2-M3*0.5
HEAD
28.5
99.0
27.0

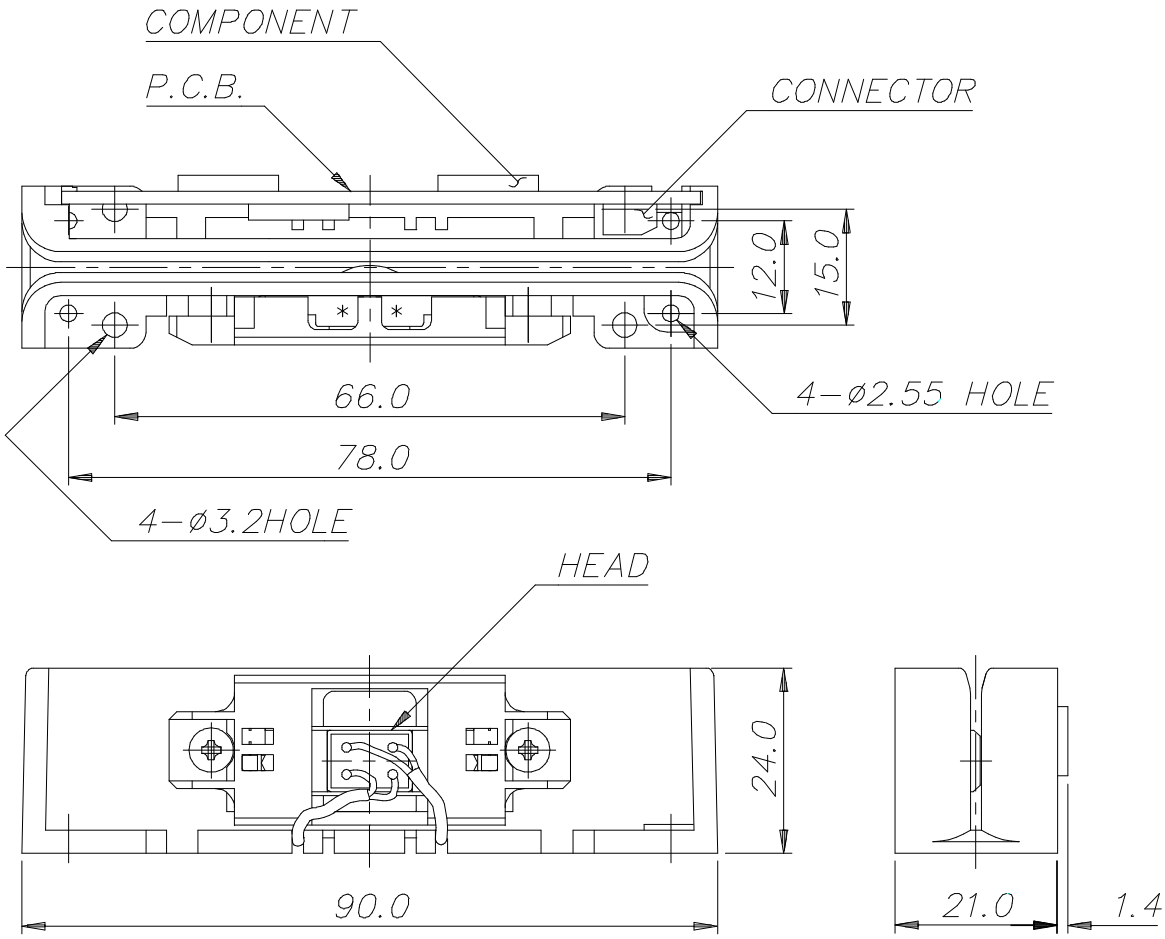
10.4 KDR - 1301



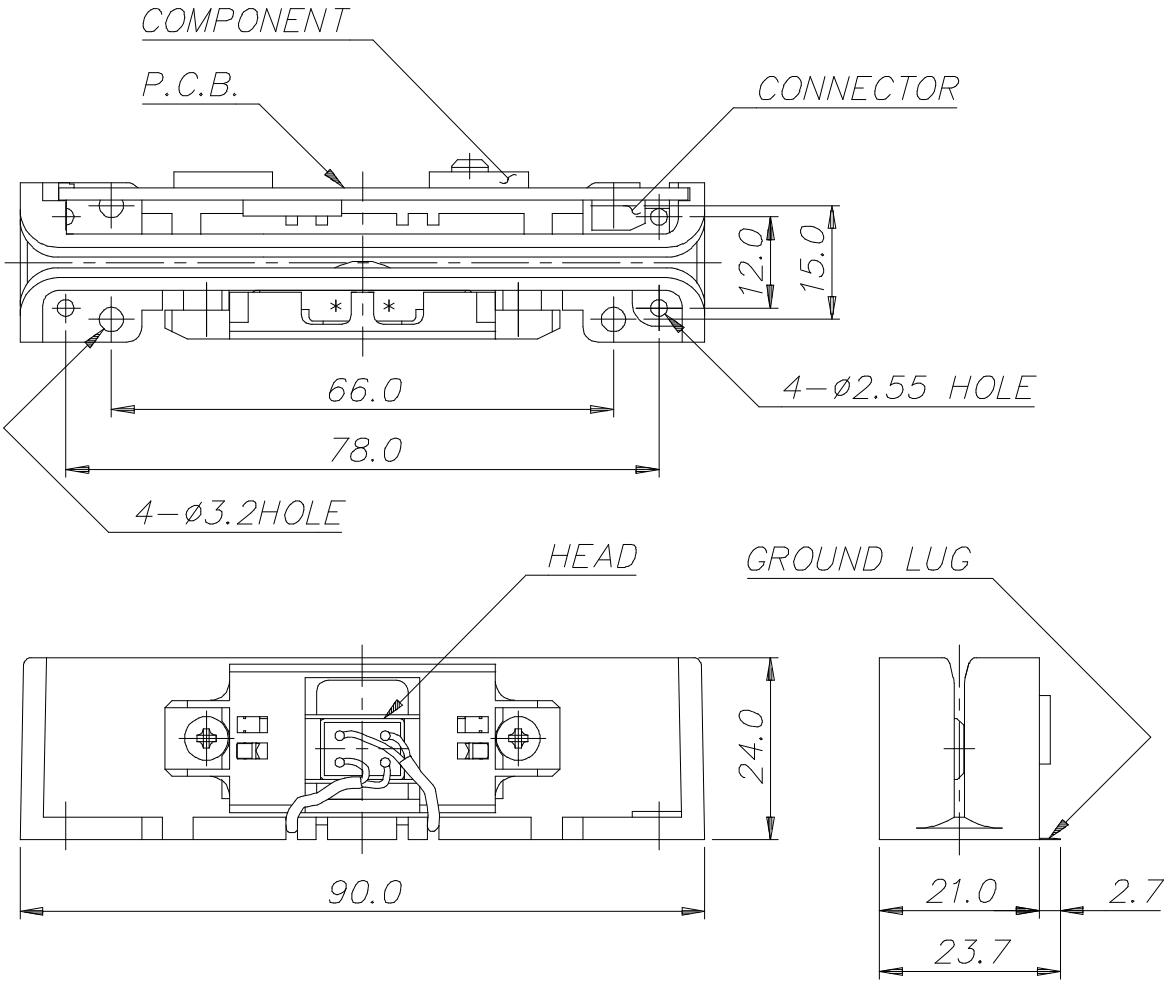
10.5 KDR - 1302


COMPONENT
P.C.B.
CONNECTOR
2-Ø2.5 HOLE
16.0
92.0
2-M3*0.5
HEAD
28.5
99.0
GROUND LUG
27.0
29.5

10.6 KDR - 1400


COMPONENT
P.C.B.
CONNECTOR
12.0
15.0
66.0
78.0
4-ø2.55 HOLE
4-ø3.2HOLE
HEAD
24.0
90.0
21.0
1.4

10.7 KDR - 1402


COMPONENT
P.C.B.
CONNECTOR
12.0
15.0
66.0
78.0
4-ø2.55 HOLE
4-ø3.2HOLE
HEAD
GROUND LUG
24.0
90.0
21.0
2.7
23.7

10.8 KDR - 1500