KDR-1000SERIES

MANUAL SWIPE CARD READER

APPROVAL		

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	APPROVED BY					

REVISION HISTORY

CHECK	ISSUED PATE	SCRIPTION	TOTAL PAGE
ISSUED	1992. 5. 26	- INITIALIZE	14
REVISION	1994. 5. 20	- PACKAGE FOR SERIES	14
REVISION	1994. 12. 1.	- NEW IC KD-2320 AND NEW HEAD MOUNTING DESIGN	14
REVISION	1996. 3. 30.	- HEAD LIFE TIME & DIMENSION CHANGE	5
REVISION	1996. 6.17	- KDR – 1500 INTERFACE ADDED	16
REVISION		- KDR-1200 INTERFACE ADDED	16
		- SHEET CHANGE	

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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 $\overline{CLS}$,$\overline{RCL}$, and $\overline{RDT}$.

2. CONFIGURATION TABLE

MODEL	DIMENSION W x D x H(mm)	ISO TRACKS							REMARKS
		SINGLE				DOUBLE		TRIPLE	
		Ⅰ	Ⅱ	Ⅲ	JIS	Ⅰ,Ⅱ	Ⅱ,Ⅲ	Ⅰ,Ⅱ,Ⅲ	
KDR-1100	21.4 x 99 x 25	1110	1120	1130	1140	1150	1160	1180	
KDR-1101	30 x 99 x 29	1111	1121	1131	1141	1151	1161	1181	*
KDR-1200	28.7 X 99 X25	1210	1220	1230	N/A	N/A	N/A	N/A	WITH JIS
KDR-1300	27 x 99 x 28.5	1310	1320	1330	1340	1350	1360	1380	
KDR-1301	31 x 99 x 32.5	1311	1321	1331	1341	1351	1361	1381	*
KDR-1302	29.5 x 99 x 28.5	1312	1322	1332	1342	1352	1362	1382	**
KDR-1400	22.4 x 90 x 24	1410	1420	1430	1440	1450	1460	1480	
KDR-1402	23.7 x 90 x 24	1412	1422	1432	1442	1452	1462	1482	**
KDR-1500	22 x 43 x 23	1510	1520	1530	N/A	1550	1560	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℃ , 0 ~ 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			JIS-II
5.2. Track No.	Ⅰ (IATA)	Ⅱ (ABA)	Ⅲ (MINTS)	
5.3. Reading Method	F2F (FM)			
5.4. Recording Density	210 BPI	75 BPI	210 BPI	210BPI
5.5. Recording Capacity	79 Characters (7-bit code)	40 Characters (5-bit code)	107 Characters (5-bit code)	42 Characters (8-bit code)
5.6. Card Thickness	0.76 ± 0.08 mm			

5.7. Power Supply : 5V DC ± 5%
5.8. Power Consumption : Less than 8mA(Single),15mA(Double),20mA(Triple)
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 ~ 120 cm/sec (4-50inch/sec)
5.13. Head Life time : min. 500,000 passes
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	$\overline{CLS}$	Brown	$\overline{RDT}$1,2	Brown	$\overline{RDT}$1	Brown
4	$\overline{RCL}$	Yellow	$\overline{RCL}$1,2	Orange	$\overline{RCL}$1	Orange
5	$\overline{RDT}$	Orange	$\overline{CLS}$1,2	Yellow	$\overline{CLS}$1	Yellow
6			$\overline{RDT}$2,3	Green	$\overline{RDT}$2	Green
7			$\overline{RCL}$2,3	Blue	$\overline{RCL}$2	Blue
8			$\overline{CLS}$2,3	Purple	$\overline{CLS}$2	Purple
9	$\overline{CLS}$: Card Loading Signal				$\overline{RDT}$3	Gray
10	$\overline{RCL}$: Read Clock				$\overline{RCL}$3	White
11	$\overline{RDT}$: Read Data Pulse				$\overline{CLS}$3	Pink

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

7. OUTPUT VOLTAGE LEVELS

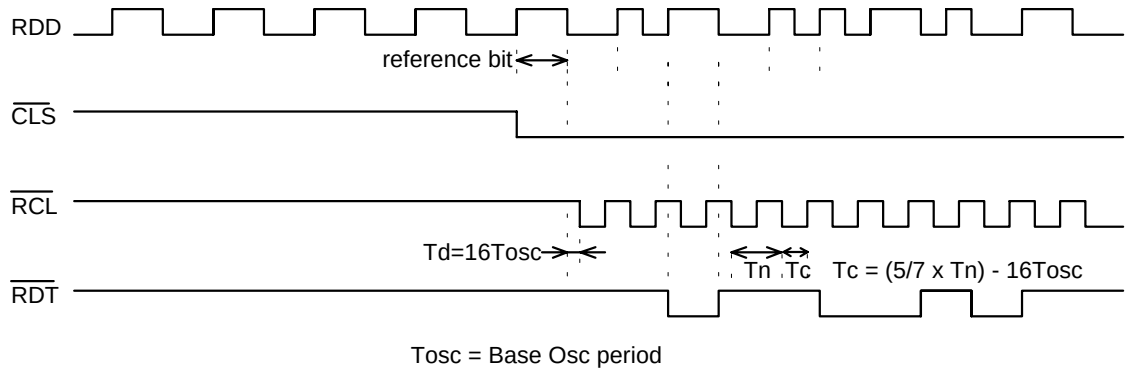
7.1. High Level : 2.4V min (IOH = 0.4 mA)
7.2. Low Level : 0.8V max (IOL = 8.0 mA)

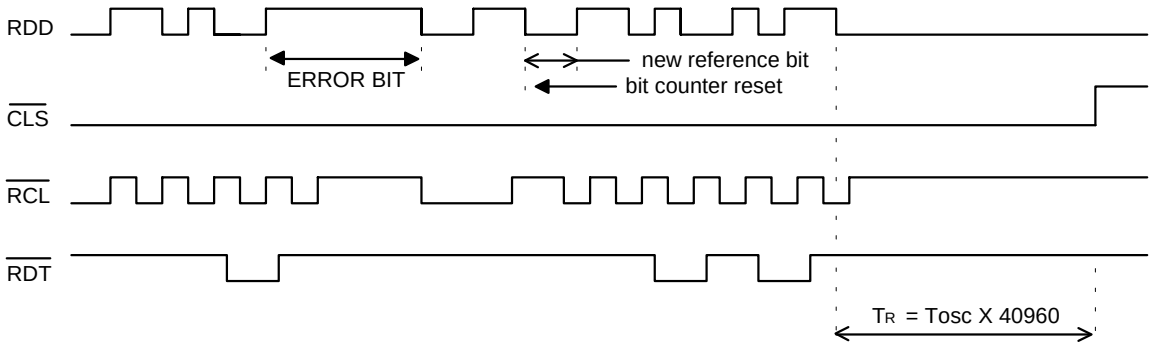
8. NOTES FOR BETTER OPERATION

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. TIMING CHART

9.1. GENERAL TIMING





9.2. DETAIL TIMING (RCL)

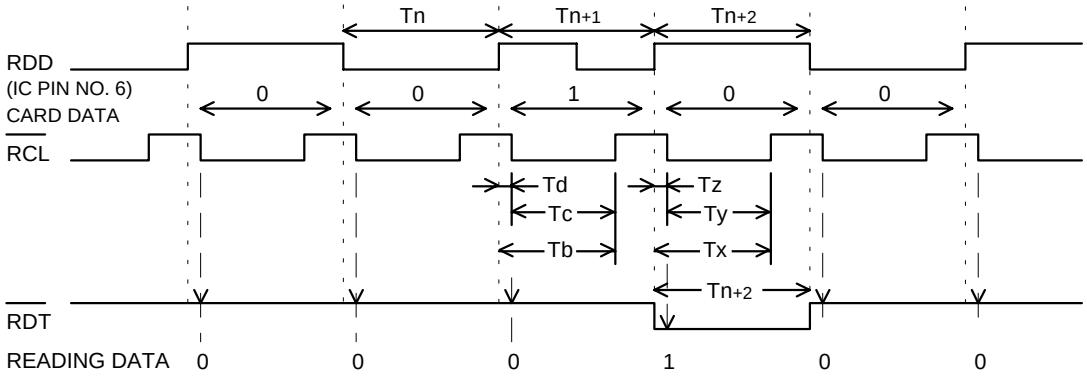
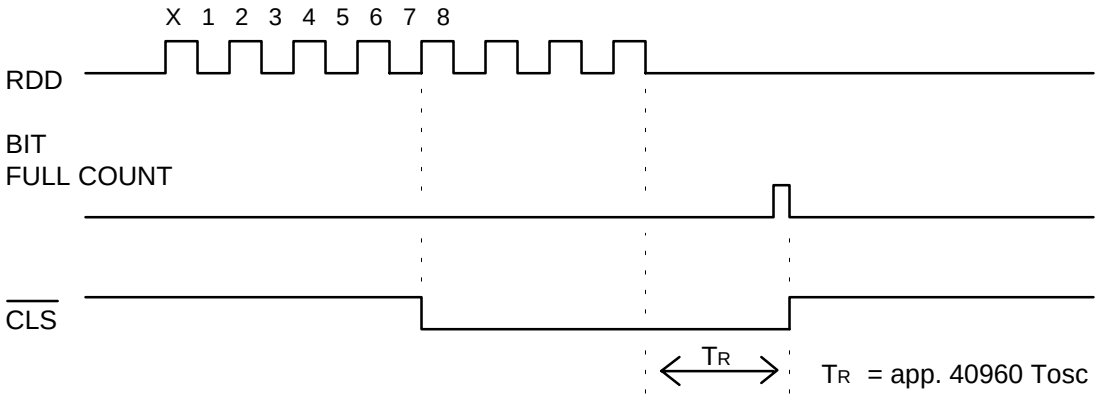


Fig - 6

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

Note) Referance Frequency : fosc ≒ 2MHz

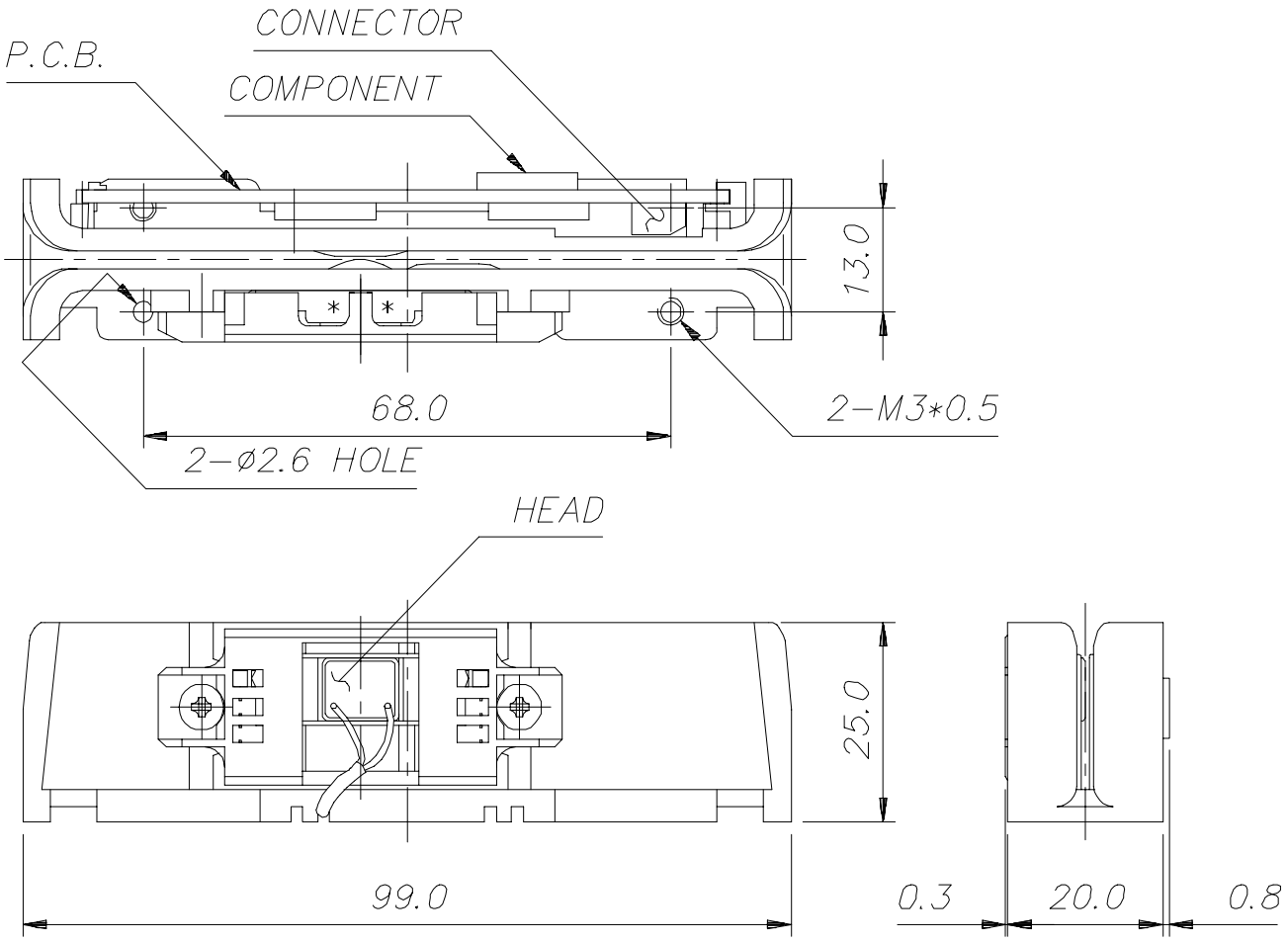
9.3. CLS generation (SELECT input voltage is low)



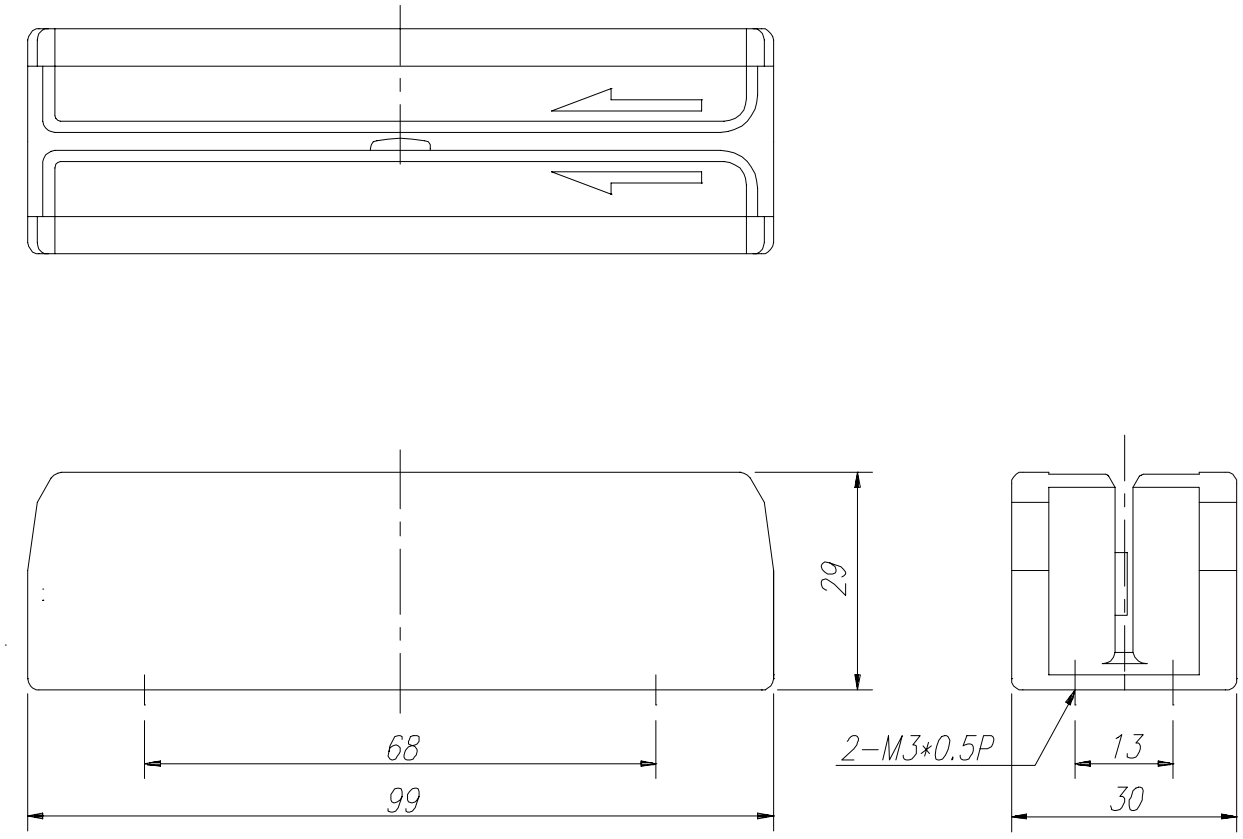
Note) TR time
Referance Frequency : fosc ≒ 2MHz
Tosc = 1/fosc = 5usec
TR = 40960 × 5usec = 204msec

10. OUTLINE DRAWINGS

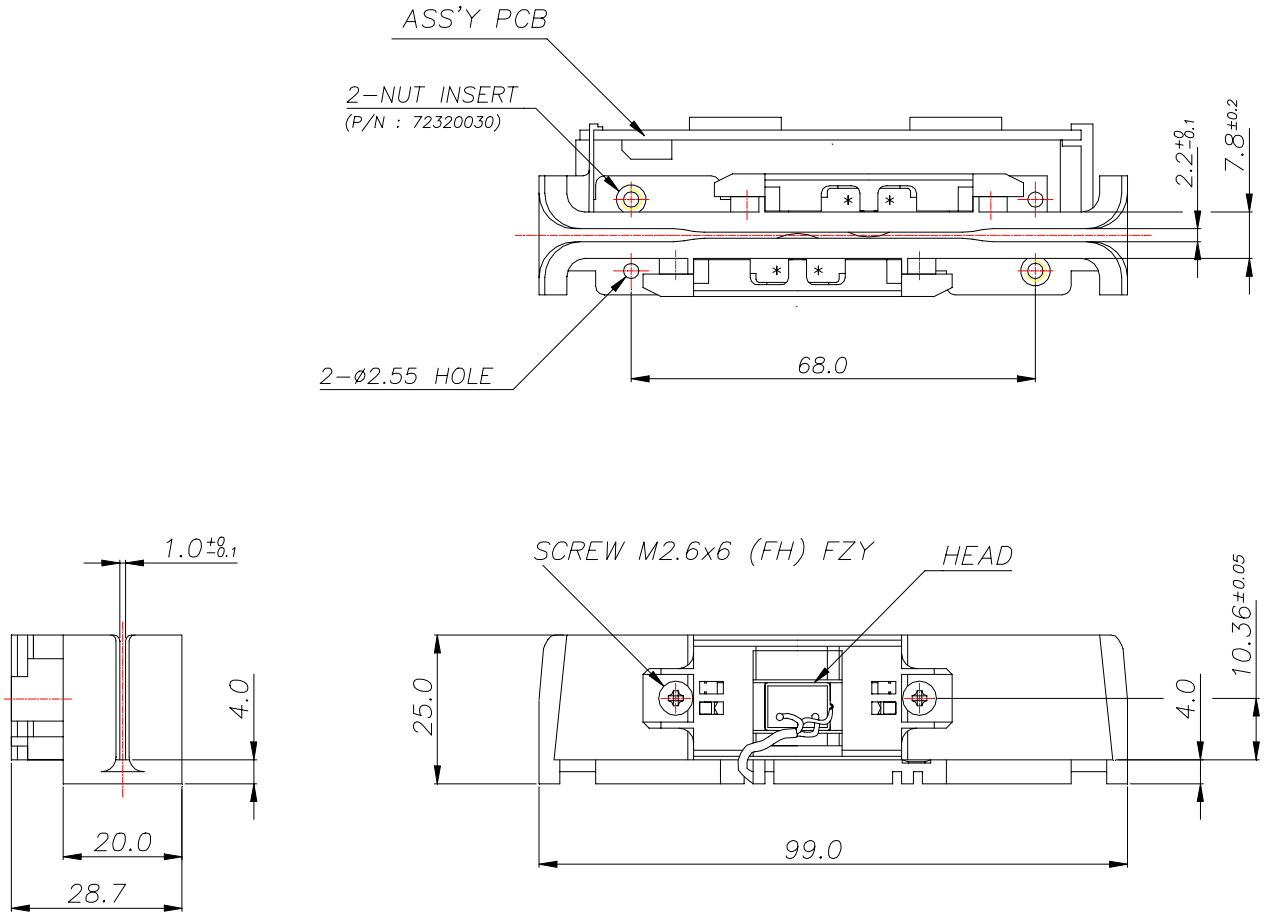
10.1. KDR - 1100



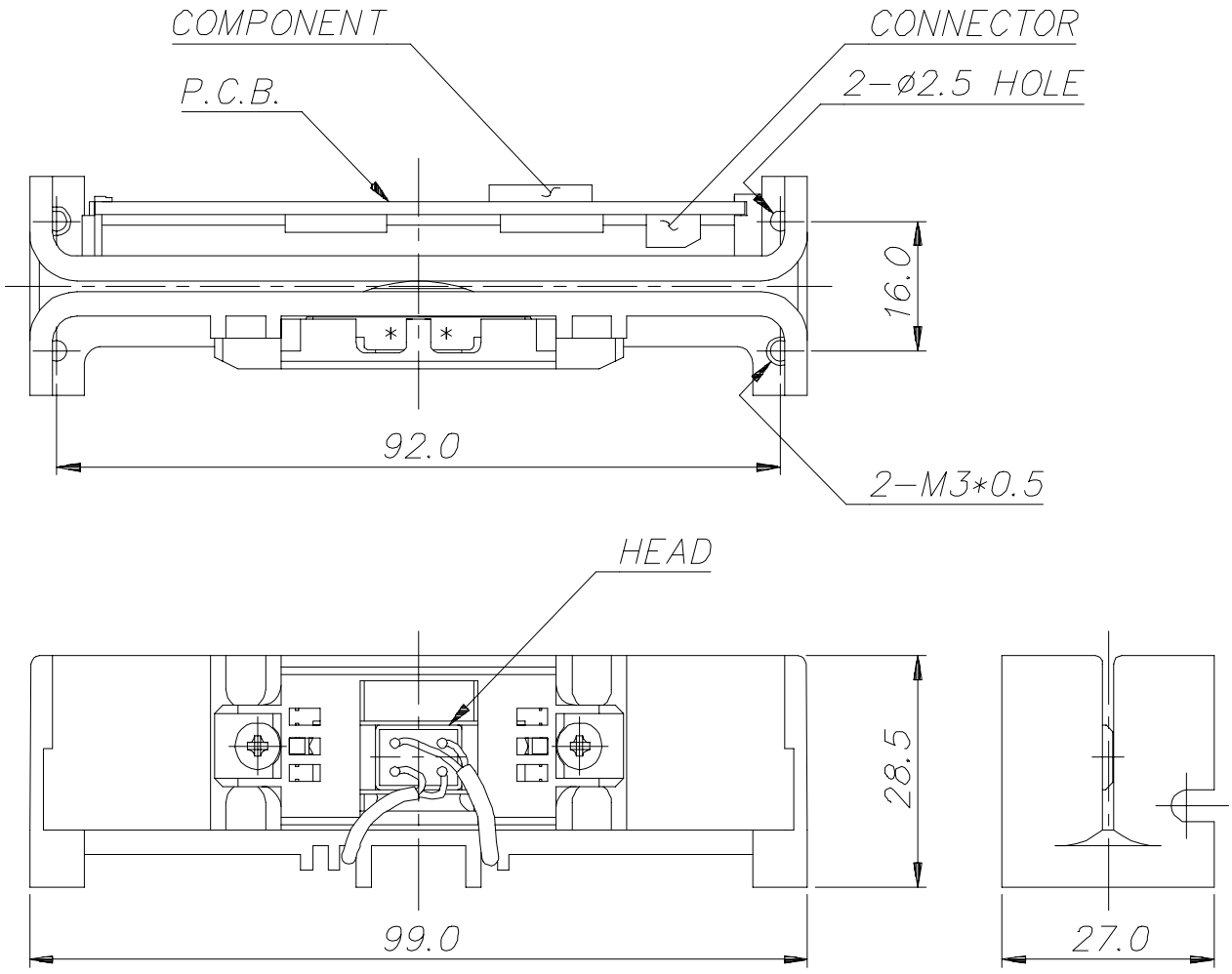
10.2. KDR - 1101



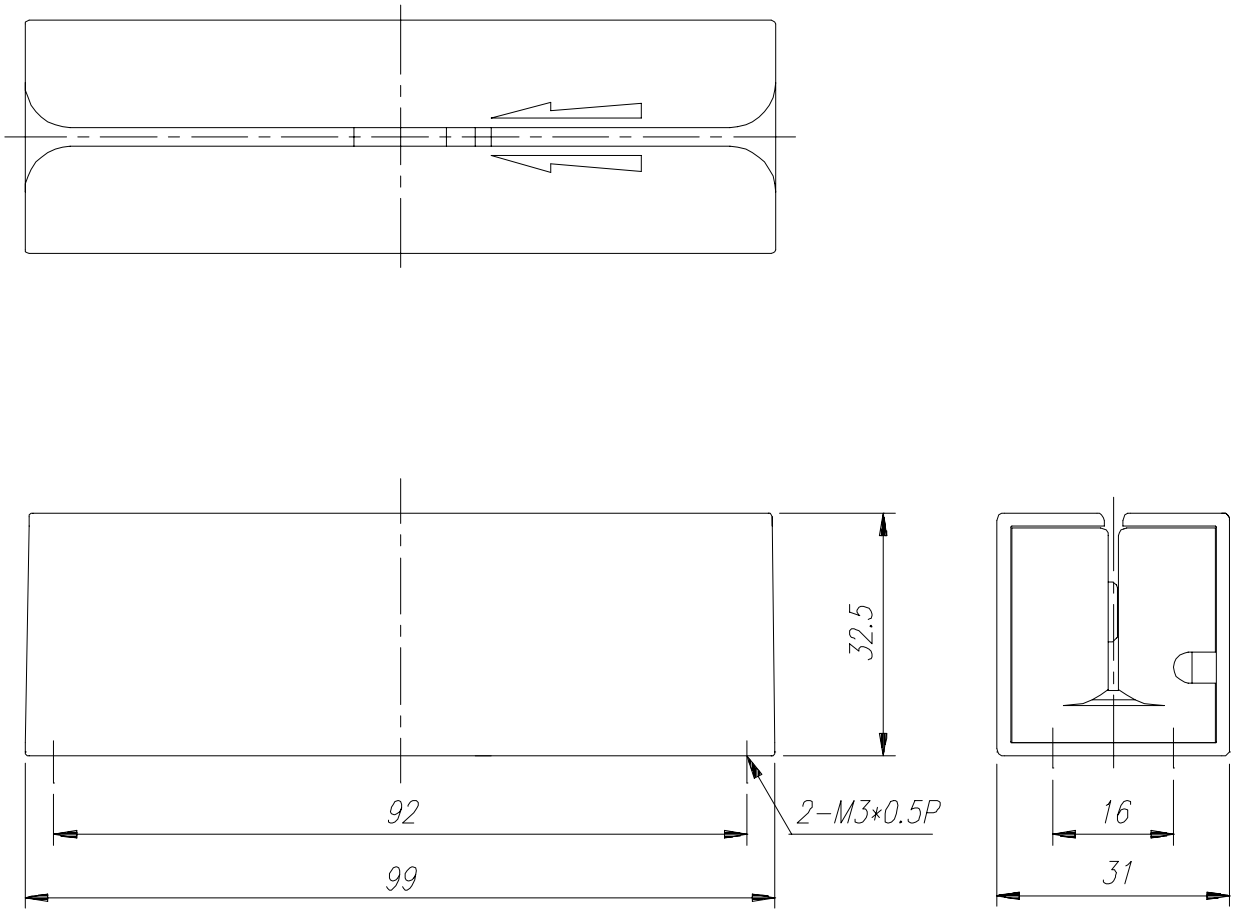
10.3. KDR-1200


ASS'Y PCB
2-NUT INSERT
(P/N : 72320030)
2-ø2.55 HOLE
68.0
2.2+0.1
7.8±0.2
1.0+0.1
4.0
20.0
28.7
SCREW M2.6x6 (FH) FZY
HEAD
25.0
4.0
10.36±0.05
99.0

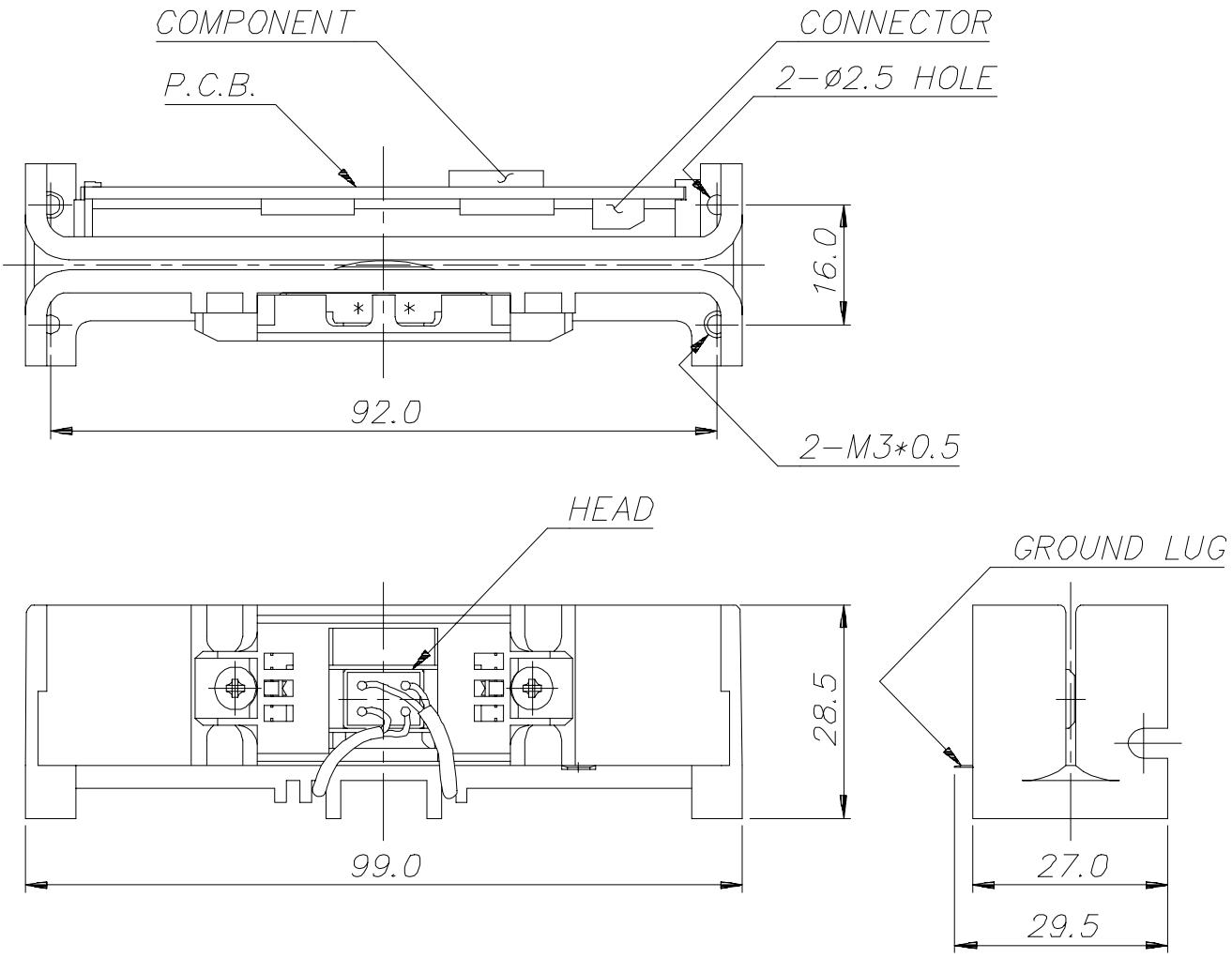
10.4. KDR - 1300


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

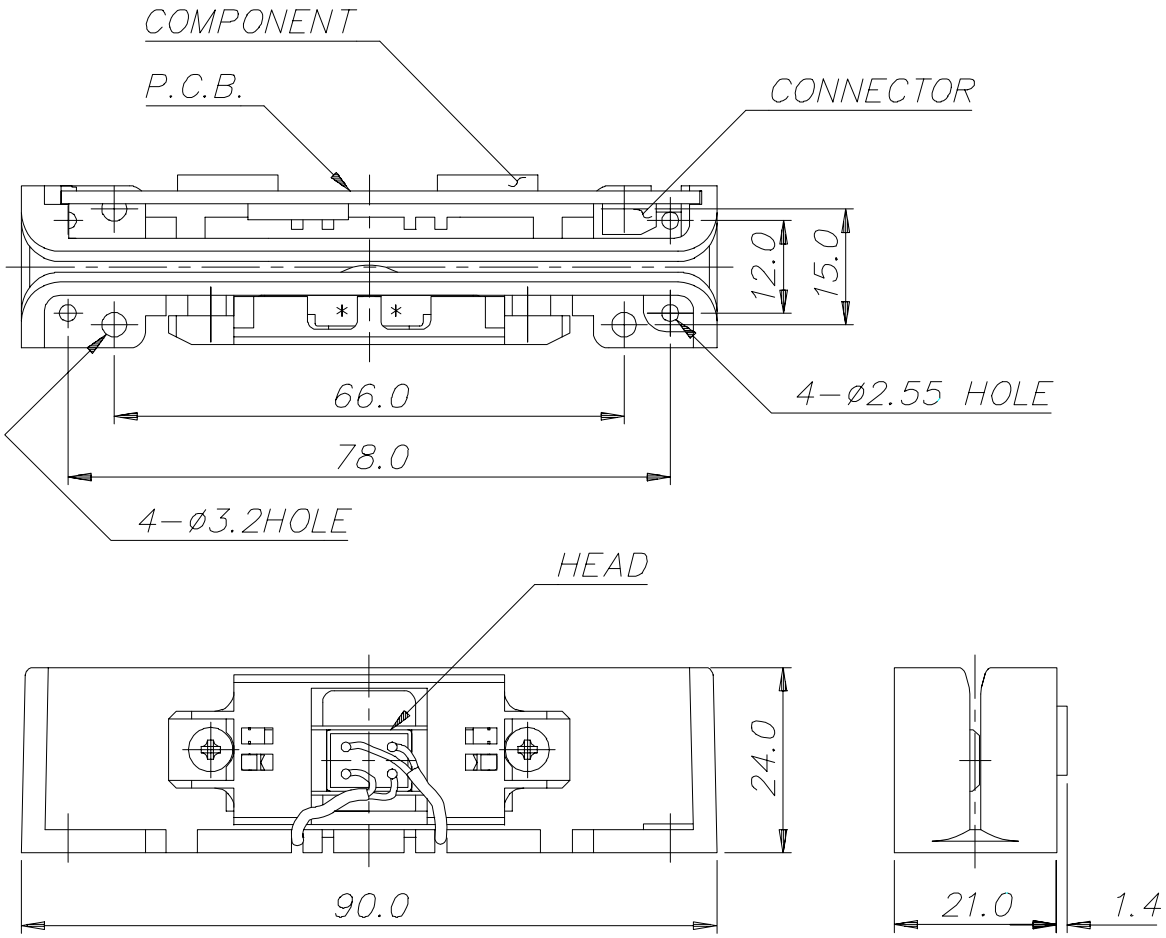
10.5. KDR - 1301



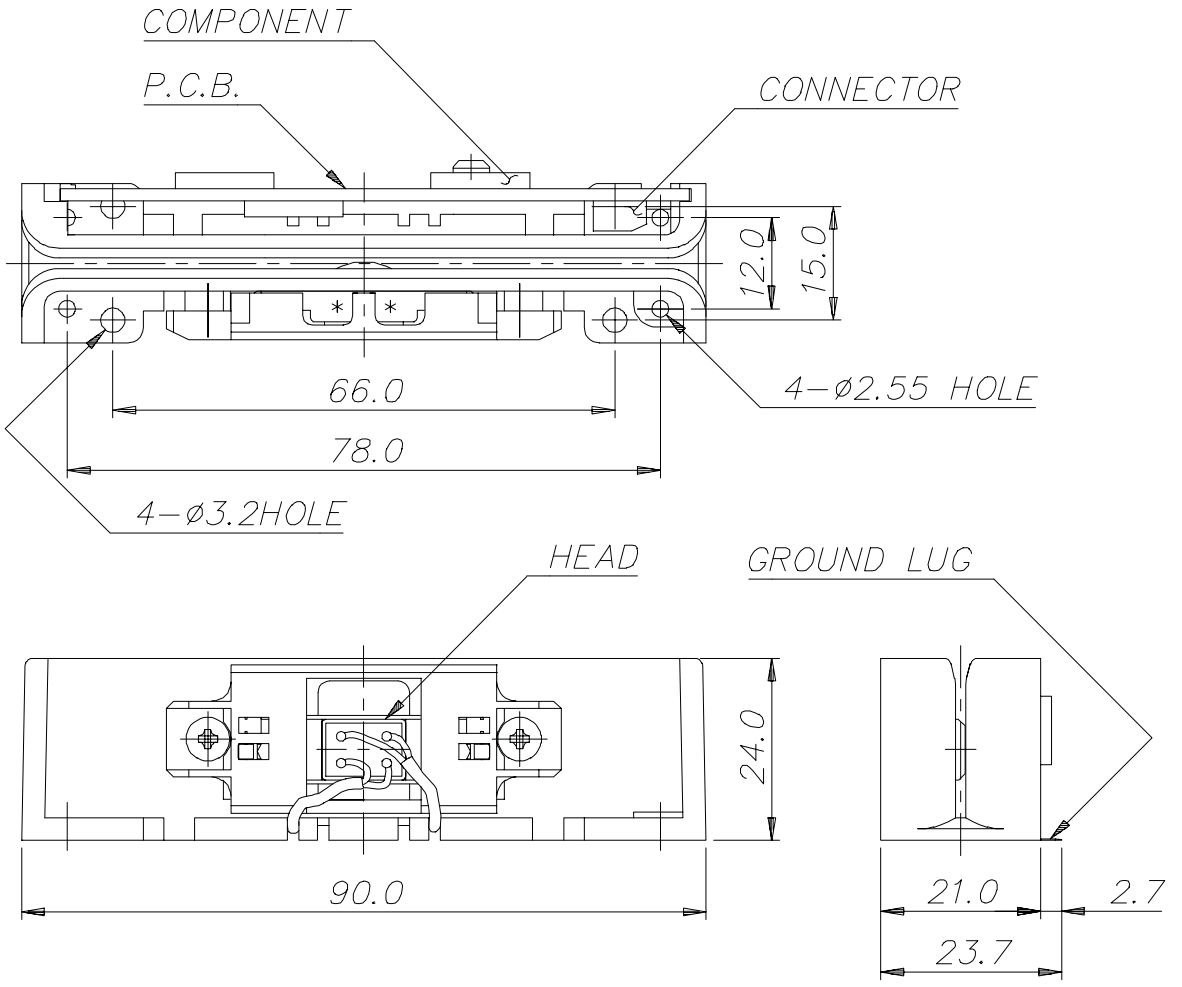
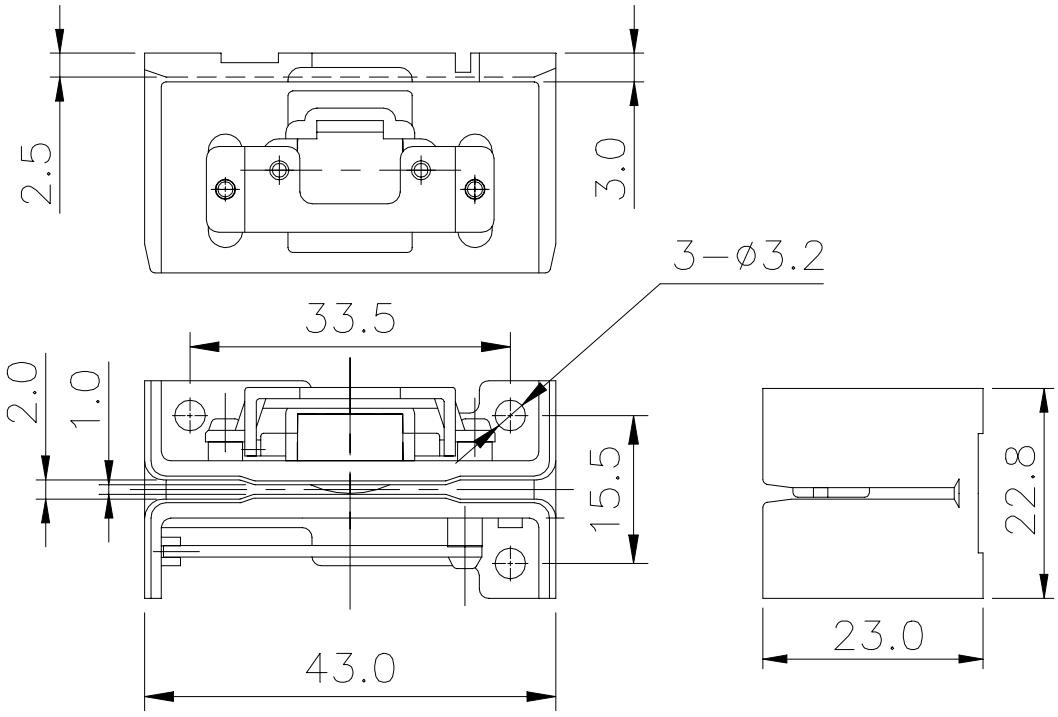
10.6. KDR - 1302


COMPONENT
P.C.B.
CONNECTOR
2-ø2.5 HOLE
16.0
92.0
2-M3*0.5
HEAD
GROUND LUG
28.5
99.0
27.0
29.5

10.7. 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

10.8. 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

10.9. KDR - 1500