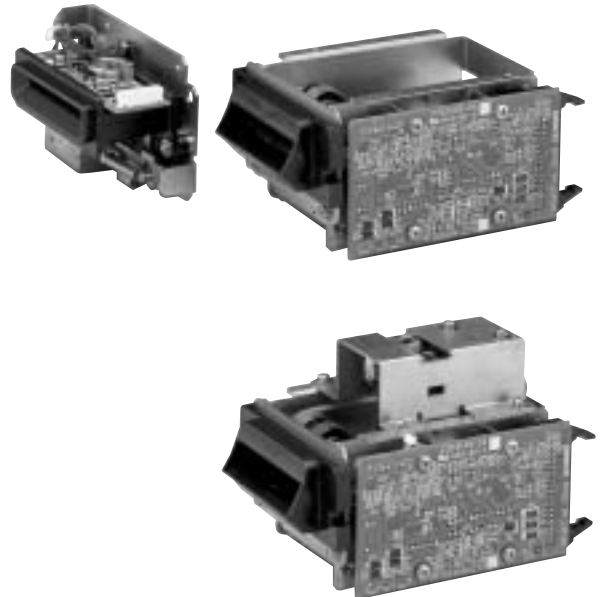


Versatile Reader/Writer Reliably Handles
Read Function for Magnetic Cards or
Read/Write Function for IC Cards

- Compact size and light weight allow easy installation in any terminal
- Single and triple track capability
- Heavy-duty construction for secure environments
- High speed card transport
- Shutter available to prevent insertion of foreign objects and improper cards



Ordering Information

Magnetic Tracks Supported (R, R/W)					IC Contact	Interface	Built-in Shutter	Cover/ Cable	Card Ejection	Color	Part Number
1	2	3	Center	JIS II							
R	R	R	—	—	No	TTL	No	No	Front/Rear	Black	3S4YR-MBR1
R	R	R	—	—	No	TTL	Yes	No	Front/Rear	Black	3S4YR-MBR1D
—	R	—	—	—	No	TTL	No	No	Front/Rear	Black	3S4YR-MBR4
—	R	—	—	—	No	TTL	Yes	No	Front/Rear	Black	3S4YR-MBR4D
—	—	—	—	—	ISO 7816	TTL	No	No	Front/Rear	Black	3S4YR-MCR0JCB
—	—	—	—	—	ISO 7816	TTL	Yes	No	Front/Rear	Black	3S4YR-MCR0JDB

■ ACCESSORIES

Description	Part Number
Shutter for MBR (Prevents tampering and incorrect card insertion)	Shutter MCD4N

■ TYPICAL APPLICATIONS

- ID Card Checkers
- Access Control
- Automatic Gate Machines
- EFT
- POS
- Vending Machines
- Kiosks

Specifications

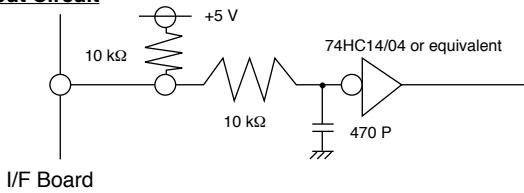
Part number		3S4YR-MBR/MCR			
Recommended card type	Magnetic card	ISO 7810, 7811/1-5, 7812, 7813			
	IC Card	ISO 7816/1-2			
Recording method		FM decoding (F2F)			
Card feeding speed		40 cm/sec (15.7 in/sec)			
Motor type		DC motor			
Service life <small>(See note)</small>	Magnetic head	1,000,000 passes			
	IC contact	300,000 times			
	Transport roller	1,000,000 passes or 5 years			
	Drive belt	1,000,000 passes or 5 years			
	Entire unit	1,000,000 passes (excluding the above mentioned parts)			
Operating power supply		24 VDC ± 10%			
Max. current consumption	3S4YR	MBR	MBR□D	MCR0JCB	MCR0JDB
	Waiting	25 mA	30 mA	20 mA	25 mA
	Operating	350 mA	550 mA	500 mA	700 mA
	Start-up, reverse	2A	2A	2A	2A
Mounting location		Indoors — away from wind, rain, and sunlight			
Ambient temperature	Operation	-5° to 55°C (23° to 131°F)			
	Storage	-25° to 70°C (-13° to 158°F)			
Ambient humidity	Operation	45% to 85% RH without condensation			
	Storage	20% to 90% RH			
Vibration (when not in use)		Single amplitude: 0.75 mm Max acceleration: 100 mm/sec ² ; 10 to 150 Hz for 30 minutes in X, Y, and Z directions			
Shock (when not in use)		300 m/sec ² (30 G) three times in each of X, Y, and Z directions			
Dimensions	3S4YR	MBR	MBR□D	MCR0JCB	MCR0JDB
	Length	122 mm (4.80 in)	147 mm (5.79 in)	122 mm (4.80 in)	147 mm (5.79 in)
	Width	90 mm (3.54 in)	90 mm (3.54 in)	90 mm (3.54 in)	105 mm (4.13 in)
	Height	62 mm (2.44 in)	62 mm (2.44 in)	95 mm (3.74 in)	95 mm (3.74 in)
Weight	3S4YR	MBR	MBR□D	MCR0JCB	MCR0JDB
		550 g (19.4 oz)	750g (26.5 oz)	900 g (31.7 oz)	1,100 g (38.8 oz)

Note: One pass denotes one-way travel of card feed.

Engineering Data

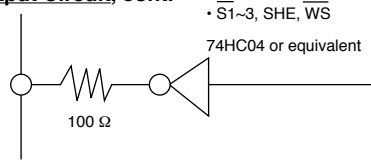
OUTPUT CIRCUIT DIAGRAM

Input Circuit



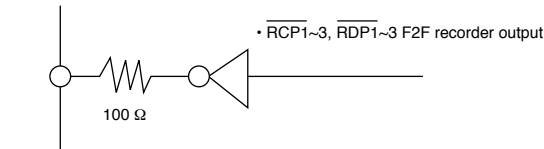
I/F Board

Output Circuit, cont.



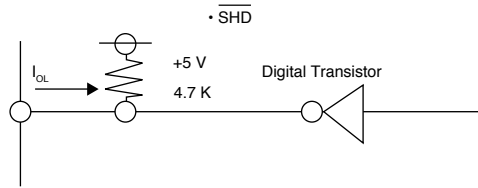
I/F Board

Output Circuit



I/F Board

$I_{OH} = -1 \text{ mA MAX (} V_{OH} = 3.5 \text{ V MIN)}$
 $I_{OL} = 4 \text{ mA MAX (} V_{OL} = 0.4 \text{ V MAX)}$



I/F Board

$I_{OL} = 10 \text{ mA MAX (} V_{OL} = 0.4 \text{ V MAX)}$

I/O INFORMATION

3S4YR-MBR1/1D/4/4D

Card reader side: Hirose Electric HIF3BA-26PA-2, 54DS (male)
 Cable side: Connector socket conforming to MIL-C-83503 (female);
 Berg 66900-266 or 65846-002; 3M 3399-6500SC+3448-3926J
 (connector + strain relief, cable-side connector is not included).

Pin #	Signal	Input/Output	Description
1	24V	—	24 VDC
2	24V	—	24 VDC
3	POV	—	0 VDC
4	POV	—	0 VDC
5	$\overline{\text{MFS}}$	Input	Motor forward signal
6	$\overline{\text{MRS}}$	Input	Motor reverse signal
7	$\overline{\text{S1}}$	Output	Card location sensor 1
8	$\overline{\text{S2}}$	Output	Card location sensor 2
9	$\overline{\text{S3}}$	Output	Card location sensor 3
10	—	—	—
11	$\overline{\text{RDP1}}$	Output	Read data, track 1
12	$\overline{\text{RCP1}}$	Output	Read clock, track 1
13	$\overline{\text{RDP2}}^*$	Output	Read data, track 2
14	$\overline{\text{RCP2}}^*$	Output	Read clock, track 2
15	$\overline{\text{RDP3}}^*$	Output	Read data, track 3
16	$\overline{\text{RCP3}}^*$	Output	Read data, track 3
17	—	—	—
18	—	—	—
19	—	—	—
20	—	—	—
21	$\overline{\text{WS}}^{**}$	Output	Card width switch
22	$\overline{\text{SHD}}^{**}$	Output	Sense head detector
23	$\overline{\text{SO}}^{**}$	Input	Shutter open/close
24	$\overline{\text{SHE}}^{**}$	Output	Shutter echo switch
25	—	—	—
26	0 VDC	—	0 VDC (GND)

3S4YR-MCROJCB/DB

Card reader side: Hirose Electric HIF3BA-26PA-2, 54DS (male)
 Cable side: Connector socket conforming to MIL-C-83503 (female);
 Berg 66900-226 or 65846-002; 3M 3399-6500SC+3448+3026J
 (connector + strain relief, cable-side connector is not included).

Pin #	Signal	Input/Output	Description
1	24V	—	24 VDC
2	24V	—	24 VDC
3	POV	—	0 VDC
4	POV	—	0 VDC
5	$\overline{\text{MFS}}$	Input	Motor forward signal
6	$\overline{\text{MRS}}$	Input	Motor reverse signal
7	$\overline{\text{S1}}$	Output	Card location sensor 1
8	$\overline{\text{S2}}$	Output	Card location sensor 2
9	$\overline{\text{S3}}$	Output	Card location sensor 3
10	IVCC	◆	IC card VCC
11	IRST	◆	IC card RESET
12	ICIO	◆	IC card IN/OUT
13	IGND	◆	IC card GND
14	ICLX	◆	IC card PROGRAM
15	IVVP	◆	IC card CLOCK
16	IRS1	◆	IC card RESERVE 1
17	IRS2	◆	IC card RESERVE 2
18	$\overline{\text{IECO}}^{***}$	Output	IC card contact press echo
19	$\overline{\text{IECS}}^{***}$	Output	Stopper release sensor echo (rear ejection only)
20	$\overline{\text{ISO1}}^{***}$	Input	IC card contact press
21	$\overline{\text{WS}}^{**}$	Output	Card width switch
22	$\overline{\text{SHD}}^{**}$	Output	Sense head detector
23	$\overline{\text{SO}}^{**}$	Input	Shutter open/close
24	$\overline{\text{SHE}}^{**}$	Output	Shutter echo switch
25	$\overline{\text{ISO2}}^{***}$	Input	IC card stopper release (rear ejection only)
26	0 VDC	—	0 VDC (GND)

* Signals applicable for the MBR1 and MBR1D only.

** Signals applicable when shutter is attached.

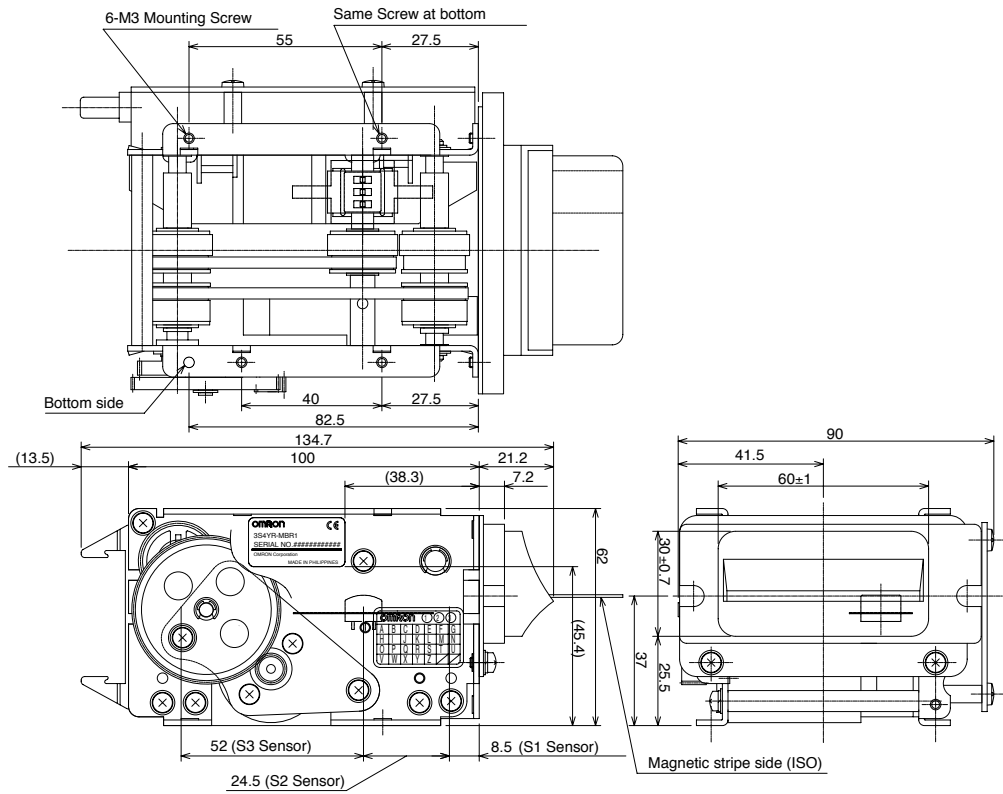
*** Signals applicable for rear ejection models only.

◆ = Direct IC Contact

Dimensions

Unit: mm (inch)

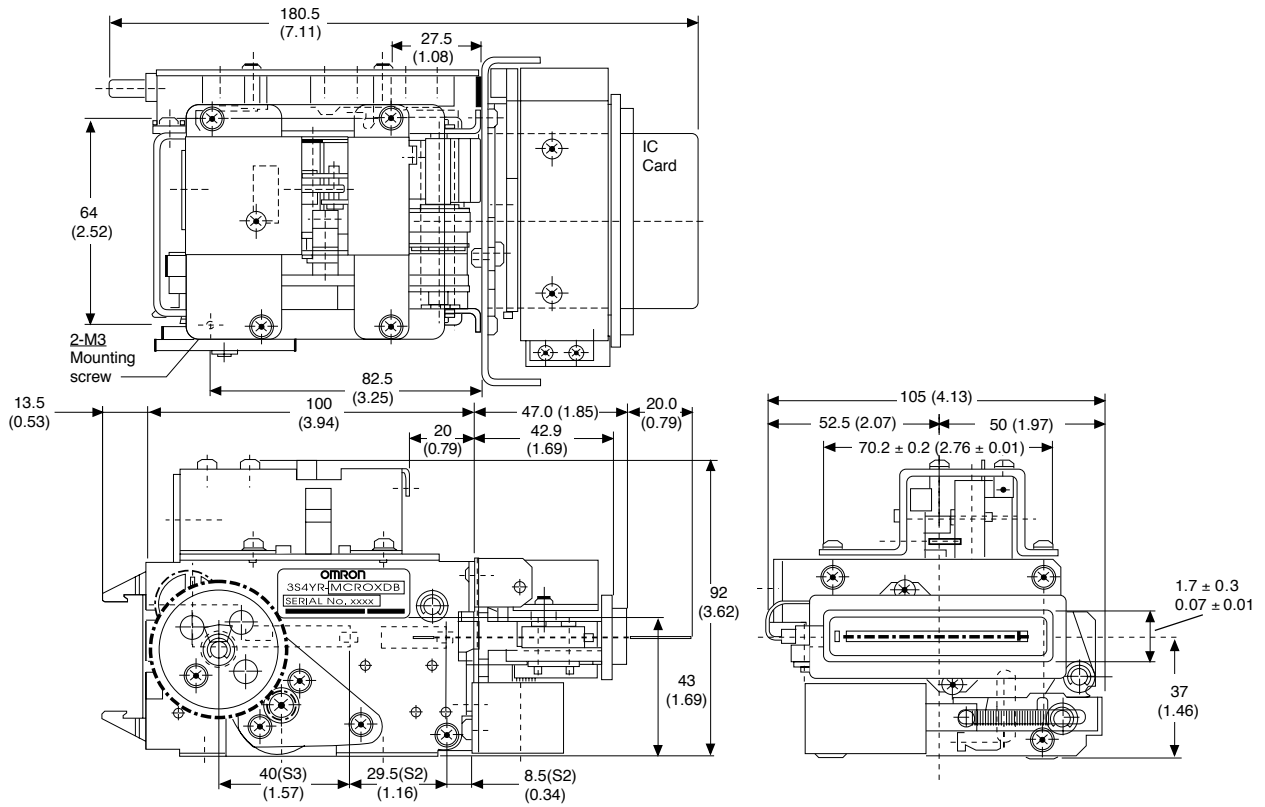
■ 3S4YR-MBR1



NOTE: Tolerances unless otherwise noted +/-1.5mm
 Fig.1 Dimensional Outline Drawing (without shutter unit)

Dimensions

■ 3S4YR-MCR0JDB



OMRON[®]

Card Business Promotion Division
Card Reader Components Dept.

©OMRON Corporation

Gate City Ohsaki, West Tower 14F 1-11-1, Ohsaki, Shinagawa-Ku Tokyo, 141-0032 JAPAN
TEL 81-3-5435-2012 FAX 81-3-5435-2017

URL : <http://www.omron.com/card/cardreader>

Contact our nearest representative at

CAT. No. IW-01

©OMRON Corporation 2002

All Rights Reserved

• This catalog is valid as of April 2002.
• Real products may slightly differ in color from catalog products, due to catalog printing methods.
• All specifications may be subject to change without notice.