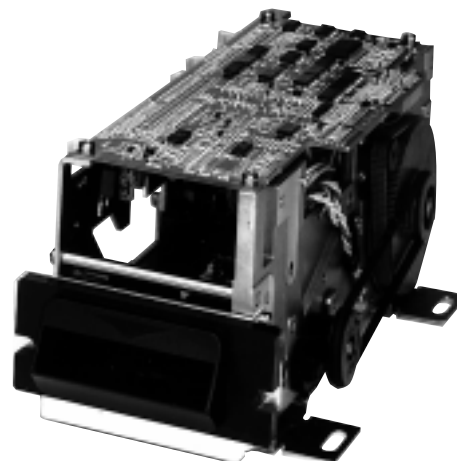


Motor Driven Card Reader/Writer

3S4YR-MKW, MKF, MKS

Versatile Hybrid Reader/Writer Handles Both Magnetic and IC Cards

- Durable 4-wheel, 2-belt drive with roller accommodates discrepancies in card thickness to accept warped or bent cards
- Ideal for open systems
- Compact size and light weight allow easy installation in any terminal
- Software-driven read/write function allows recognition of any type of ISO track
- Three integrated chip station positions available (X, J, B)
- Adjustable to card thicknesses of 0.20 mm, 0.40 mm, and 0.76 mm (PET, paper, or PVC cards)
- HiCo write capability available



Ordering Information

Magnetic Tracks Supported (R, R/W)					IC Contact	Shutter	Interface	Color	Part Number
1	2	3	Center	JIS II					
R/W	R/W	R/W	—	—	J-type(ISO) ^(See note 1)	Yes	TTL-compatible	Black	3S4YR-MKW1JD
R/W	R/W	R/W	—	—	X-type(ISO+CP8)	Yes	TTL-compatible	Black	3S4YR-MKW1XD
R/W	R/W	R/W	—	—	Upgradeable	Option	TTL-compatible	Black	3S4YR-MKW1PC
R/W	R/W	R/W	—	—	Upgradeable	Option	TTL-compatible	Black	3S4YR-MKW1PCH ^(See note 2)
R/W	R/W	R/W	—	—	Upgradeable	Yes	TTL-compatible	Black	3S4YR-MKW1PD
R/W	—	—	—	—	Upgradeable	Option	TTL-compatible	Black	3S4YR-MKW3PC
—	R/W	—	—	—	Upgradeable	Option	TTL-compatible	Black	3S4YR-MKW4PC
—	R/W	—	—	—	Upgradeable	Option	TTL-compatible	Black	3S4YR-MKW4PCH ^(See note 2)
—	R/W	—	—	—	Upgradeable	Yes	TTL-compatible	Black	3S4YR-MKW4PD
—	—	R/W	—	—	Upgradeable	Option	TTL-compatible	Black	3S4YR-MKW5PC
R/W	R/W	—	—	—	Upgradeable	Option	TTL-compatible	Black	3S4YR-MKW6PC
—	R/W	R/W	—	—	Upgradeable	Option	TTL-compatible	Black	3S4YR-MKW7PC
—	R/W	R/W	—	—	Upgradeable	Yes	TTL-compatible	Black	3S4YR-MKW7PD
R/W	R/W	R/W	—	—	Upgradeable	Option	RS-232C	Black	3S4YR-MKFW1PC ^(See note 3)
R/W	R/W	R/W	—	—	Upgradeable	Yes	RS-232C	Black	3S4YR-MKFW1PD ^(See note 3)
R/W	R/W	R/W	—	—	X-type(ISO+CP8)	Yes	RS-232C	Black	3S4YR-MKFW1XD ^(See note 3)
R/W	R/W	R/W	—	—	No	No	RS-232C	Black	3S4YR-MKS1N

Note 1: Consult the *IC-Card Basics* section of this catalog for IC contact descriptions.

2: MKW1PCH and MKW4PCH are capable of writing HiCo cards. All models can read HiCo cards.

3: RS-232C supports card control and magnetic reading/writing. IC support requires customer-designed interface board.

■ TYPICAL APPLICATIONS

- Cash Dispensers
- Automatic Teller Machines (ATM)
- POS Terminals
- Credit Card Checkers
- ID Card Checkers
- Electronic Lock Systems
- Medical Patient Systems
- Health Control Systems

■ ACCESSORIES

Description	Part Number
IC Card on the front, lower position	IC CONTACT J (See note 1)
IC Card on the front, upper position	IC CONTACT B (See note 1)
IC Card on the front, upper and lower positions	IC CONTACT X (See note 1)
Shutter for MKW1PC, MKW1PCH, MKFW1PC	SHUTTER MKD1
Shutter for MKW3PC	SHUTTER MK3
Shutter for MKW4PC, MKW4PCH	SHUTTER MK4
Shutter for MKW5PC	SHUTTER MK5
Shutter for MKW6PC	SHUTTER MK6
Shutter for MKW7PC	SHUTTER MK7
MM Sensor Holder (MM sensor itself must be purchased from the manufacturer.)	MM HOLDER
Watermark Reader Head. Cannot be used to write track 1.	WATERMARK HEAD (See note 2)
Watermark Circuit Board. Cannot be used to write track 1.	WATERMARK PCB (See note 2)

Note 1: Consult your Omron sales representative for IC contact accessories. Special configurations can be supplied.

2: Watermark Reader Head and Watermark Circuit Board must be ordered together.

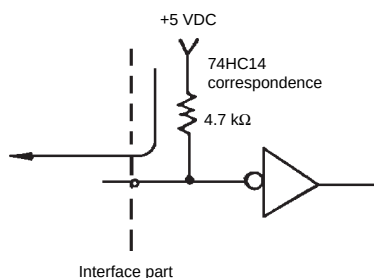
Specifications

Part number		3S4YR-MKW, MKF, MKS
Recommended card type	Magnetic card	ISO 7810-7813
	IC card	ISO 7816/1, 2
Recording method		FM decoding (F2F)
Card feeding speed		20 cm/sec $\pm$ 10% (7.87 in/sec)
Motor type		DC motor
Service life (See note)		1,200,000 passes min.
Operating power supply	Amplifier	24 VDC $\pm$ 10%
	Motor	24 VDC $\pm$ 10%
	Control logic	5 VDC $\pm$ 5%
Current consumption	Amplifier	260 mA max.
	Motor	1.7 A max.
	Control logic	330 mA max.
Mounting location		Anywhere not directly subject to water or rain
Mounting orientation		Stripe top or stripe bottom
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	30% to 90% RH
Vibration		10 to 55 Hz, 2 mm double amplitude, for 30 minutes in X, Y, and Z directions
Shock		300 m/sec ² (30 G) in each of X, Y, and Z directions
Dimensions	With shutter	247L x 106W x 92H mm (9.72L x 4.17W x 3.62H in)
	Without shutter	222L x 98W x 92H mm (8.74L x 3.86W x 3.62H in)
Weight		Approx. 1.9 kg (4.2 lbs) when fully equipped

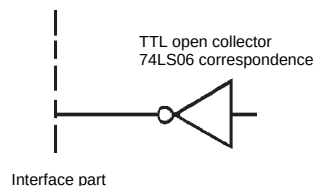
Note: One pass denotes one round trip.

Engineering Data

INPUT CIRCUIT DIAGRAM



OUTPUT CIRCUIT DIAGRAM



I/O INFORMATION

3S4YR-MKW Connector of Magnetic Card (CN1 Signal)

3M 3433-5302JL. Mate: 3M 3425-6550EL.

Pin #	Signal	Input/Output	Pin #	Signal	Input/Output
1	+5 VDC	—	26	$\overline{S1}$	Output
2	+5 VDC	—	27	$\overline{S2}$	Output
3	0 V	—	28	$\overline{S3}$	Output
4	0 V	—	29	$\overline{S4}$	Output
5	P24V	—	30	$\overline{STW}$	Output
6	P24V	—	31	$\overline{RCP1}$	Output
7	P0V	—	32	$\overline{RDP1}$	Output
8	P0V	—	33	$\overline{RCP2}$	Output
9	$\overline{MFW}$	Input	34	$\overline{RDP2}$	Output
10	$\overline{MRV}$	Input	35	$\overline{RCP3}$	Output
11	$\overline{SOL1}$	Input	36	$\overline{RDP3}$	Output
12	—	—	37	$\overline{RCP4}$	Output
13	—	—	38	$\overline{RDP4}$	Output
14	—	—	39	$\overline{WCP1}$	Output
15	—	—	40	$\overline{WCP2}$	Output
16	—	—	41	$\overline{WDT1}$	Input
17	$\overline{WEN}$	Input	42	$\overline{CNT1}$	Input
18	—	—	43	$\overline{WDT2}$	Input
19	$\overline{RCPS}$	—	44	$\overline{CNT2}$	Input
20	$\overline{RDP5}$	—	45	$\overline{WDT3}$	Input
21	$\overline{SHD1}$	Output	46	$\overline{CNT3}$	Input
22	$\overline{WDV}$	Output	47	$\overline{WDT4}$	Input
23	$\overline{SHE}$	Output	48	$\overline{CNT4}$	Input
24	$\overline{WID}$	Output	49	+24 VDC	—
25	$\overline{S0}$	Output	50	+24 VDC	—

3S4YR-MKW Connector of IC Card (CN2 Signal)

3M 3408-5302JL. Mate: 3M 3452-6516EL.

Pin #	Signal	Input/Output	Pin #	Signal	Input/Output
1	IVCC	◆	9	IRS1	◆
2	IRST	◆	10	IRS2	◆
3	ICIO	◆	11	$\overline{IECO}$	Input
4	IGND	◆	12	—	—
5	—	—	13	$\overline{IMSL}$	Input
6	ICKL	◆	14	$\overline{ISOL}$	Input
7	IVCC	◆	15	+5 VDC	—
8	IVPP	◆	16	0 V	—

◆ = Direct IC Contact

I/O INFORMATION, continued

3S4YR-MKF (RS-232C Adaptor)

Modular Jack, Hirose TM3RA-88.

Recommended mating connector: TM8P-88P.

Pin #	Signal	Input/Output	Pin #	Signal	Input/Output
1	DSR	Input	5	RTS	Output
2	Signal Ground	—	6	RXD	Input
3	DTR	Output	7	TXD	Output
4	CTS	Input	8	Frame Ground	—

3S4YR-MKF (Power Connector)

Molex 5046-04A. Recommended mating connector: Molex 5102-04 or 5050-04.

Pin #	Signal
1	X24V
2	XGND
3	GNB
4	+24V

3S4YR-MKF (Chip Card Adaptor)

HIF3FC-26PA-254DS (Hirose Electric Co. Japan)

2.54 mm pitch, double row (Conforming to MIL-C-83503)

Recommended mating connector: any type conforming to the MIL-C-83503.

Pin #	Signal	Input/Output	Pin #	Signal	Input/Output
1	X24V	—	14	ICI0	◆
2	NC	—	15	IRS1	◆
3	NC	—	16	$\overline{\text{IECO}}$	Output
4	+5V	—	17	IDI0	Input/Output
5	$\overline{\text{CENB}}$	Output	18	$\overline{\text{IRSTEN}}$	Output
6	0V	—	19	$\overline{\text{IATR}}$	Output
7	$\overline{\text{PDWN}}$	Output	20	$\overline{\text{X0R1}}$	Output
8	ICLK	◆	21	$\overline{\text{X0R2}}$	Output
9	$\overline{\text{IEMRG}}$	Input	22	$\overline{\text{X0R3}}$	Output
10	IVCC	◆	23	$\overline{\text{X0R4}}$	Output
11	IRST	◆	24	0V	—
12	IGND	◆	25	$\overline{\text{RESET}}$	Output
13	IVPP	◆	26	IRS2	◆

3S4YR-MKS

Connector: Hirose HDBB-25S.

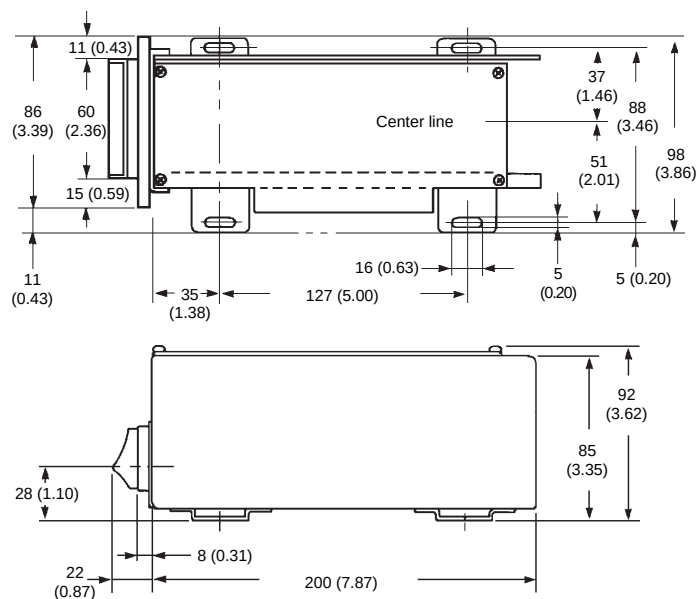
Pin #	Signal	Input/Output
1	FG	—
2	TXD	—
3	RXD	—
4	RTS	—
5	CTS	—
6	DSR	—
7	GND	—
20	DTR	—

◆ = Direct IC Contact

Dimensions

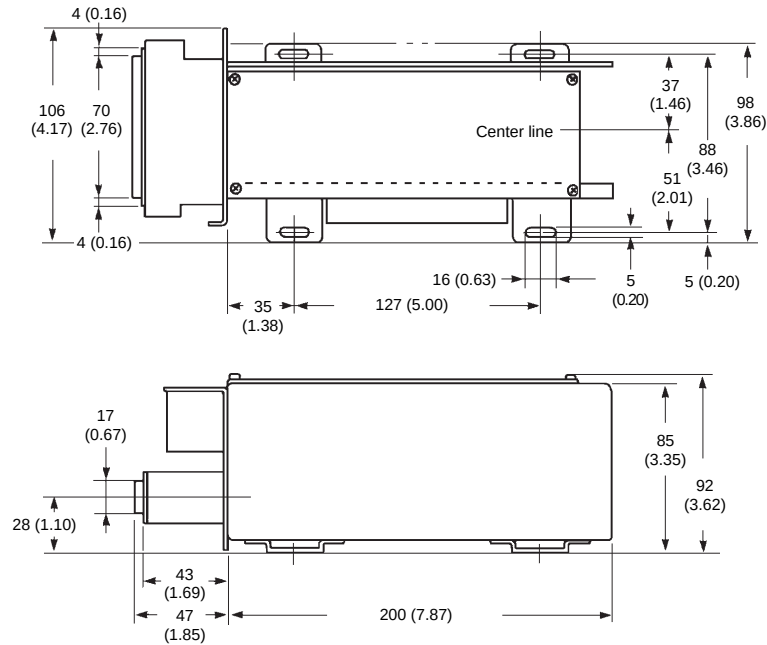
Unit: mm (inch)

3S4YR-MKW WITHOUT SHUTTER



Stripe down shown.
Can be mounted with
stripe up.

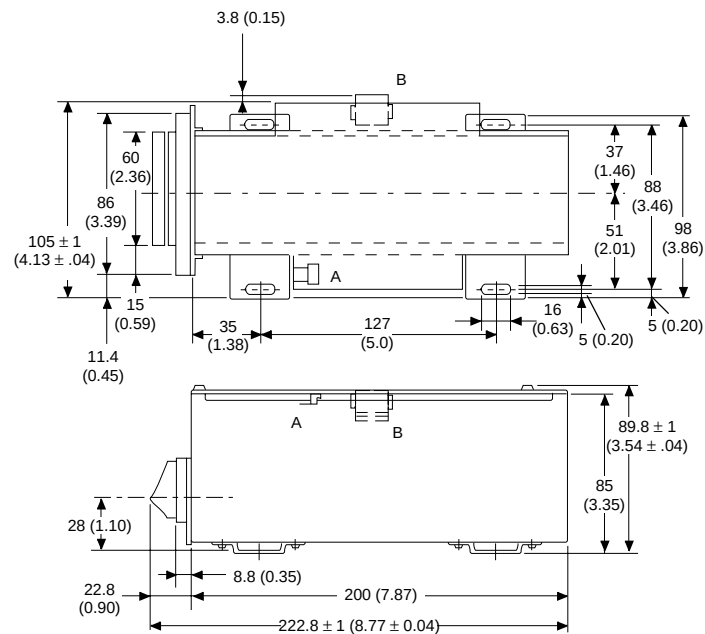
3S4YR-MKW WITH SHUTTER



Stripe down shown.
Can be mounted with
stripe up.

Note: Unless otherwise specified, tolerance is ± 0.3 .

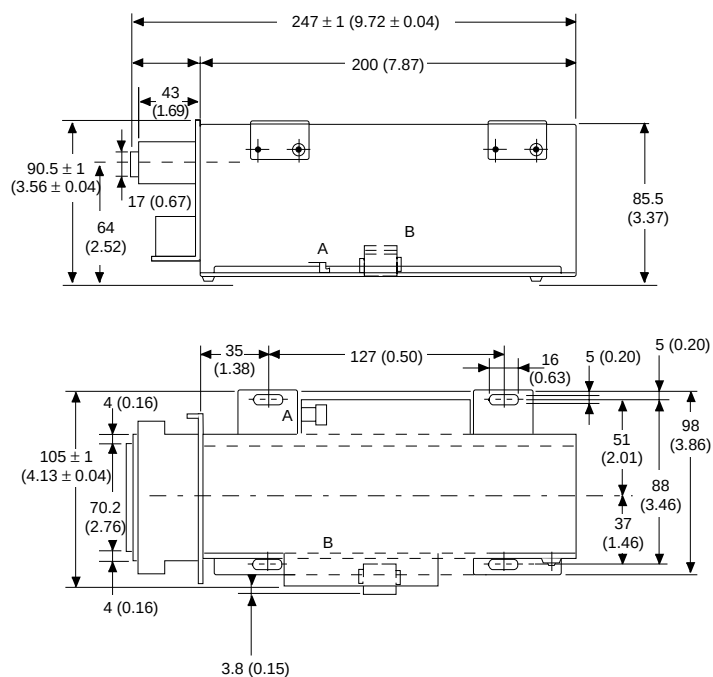
3S4YR-MKF WITHOUT SHUTTER



Stripe down shown.
Can be mounted with
stripe up.

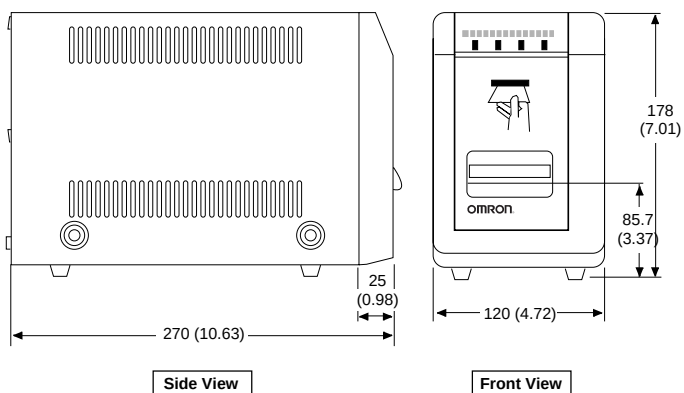
Unit: mm (inch)

■ 3S4YR-MKF WITH SHUTTER



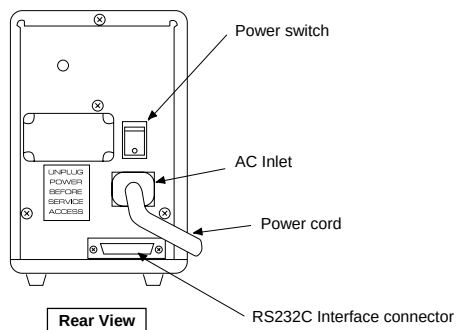
Stripe up shown.
Can be mounted with
stripe down.

■ 3S4YR-MKS



Side View

Front View



Rear View



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