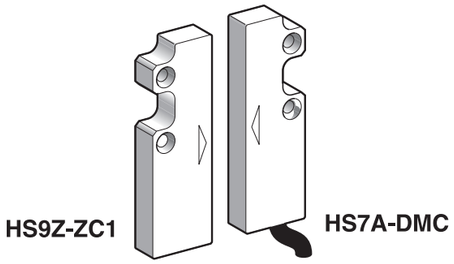
IDEC

INSTRUCTION SHEET

Coded Magnetic Switches
HS7A-DMC



Confirm that the delivered product is what you have ordered. Read this instruction sheet to make sure of correct operation. Make sure that the instruction sheet is kept by the end user.

The products have been designed in accordance with the standards in effect : IEC 60947-5-1, EN 292, EN 60204-1 to ensure the safety of machine operators and machine operating reliability, and have obtained the UL/CSA certifications

SAFETY NOTE

⚠ CAUTION

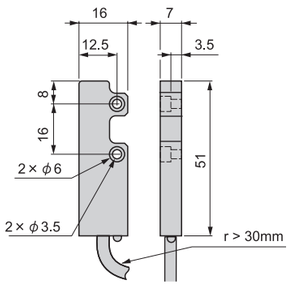
The use of the safety relay modules is required for the monitoring of the coded magnetic safety switches.
When correctly installed and connected to the HR1S safety relay modules they produce a category 4 control circuit per EN ISO 13849-1 (2 redundant contacts monitored by one HR1S safety relay module or FS series safety controller. See user's manual for wiring with safety comtroller).
Use the safety switches for an interlocking device in compliance with laws and regulations of the country in which it is being used.

1 Specifications

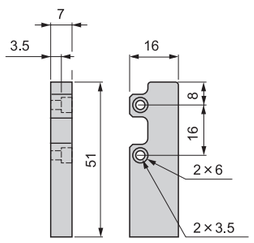
Conforming to standards		IEC / EN 60947-5-1 EN ISO / ISO 14119 UL 508, CSA C22.2 No.14
Interlocking device Type / the level of coded		Type 4 interlocking device / low level coded actuator (EN ISO 14119)
Ambient air temperature		Operation : -13° F to 185° F(-25℃+85℃) (no freezing) Storage : -40° F to 185° F(-40℃+85℃) (no freezing)
Vibration resistance		10 gn (10-150 Hz) conforming to IEC 60068-2-6
Shock resistance		30 gn (11 ms) conforming to IEC 60068-2-7
Protection against electric shock		Class Ⅱ as per IEC 60536
Degree of protection		IP67
Degree of pollution		3, conforming to IEC /EN 60947-5-1
Rated operating chatacteristics		Ue = 24VDC Ie = 100 mA
Protection (using without safety relay module)		500 mA gG (gL) cartridge fuse (use type CC in the United States)
Repeat accuracy		≤10%
Hysteresis		≤20%
Frequency of operating cycle		150 Hz
Drop out voltage	I=10mA	0,1V without LED; 2,4V with LED
	I=100mA	1V without LED; 4,2V with LED
Functional switches		Closing - Opening
Cable connection		By cable 4 x AWG 23 (0.25mm²) length 78.74 in, 196.85 in or 393.70 in (2m, 5m, 10m), depending on model

2 Dimensions (mm)

Type No. HS7A-DMC****

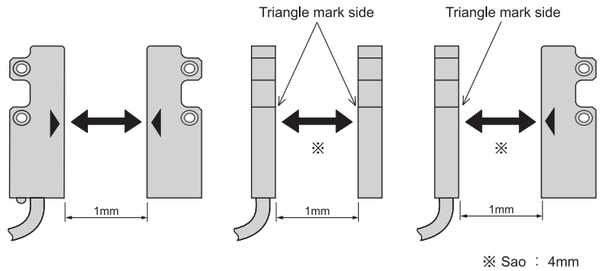


Type No. HS9Z-ZC1



3 Operation

・Functional directions - Minimum distance between the safety switch and the magnet

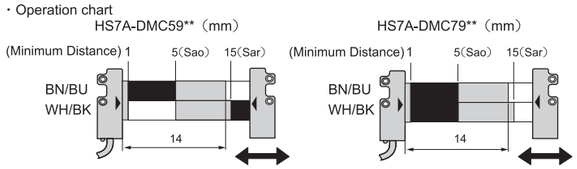


・Contact status

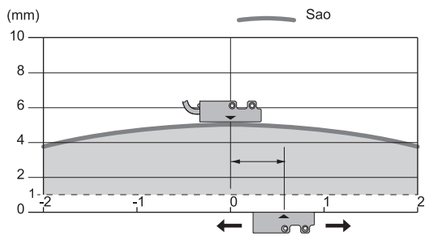
■	-Contact closed (1)
□	-Contact open (0)
▒	-Transient state

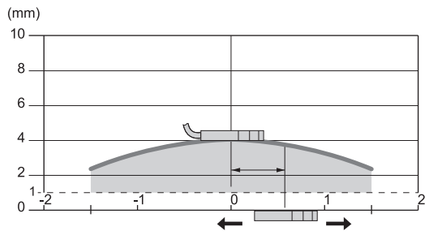
Sao : Assured Operation Distance
Sar : Assured Release Distance

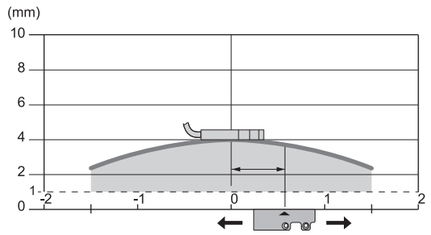
・Operation chart



・Sensing area



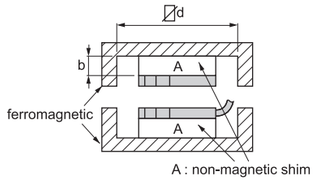




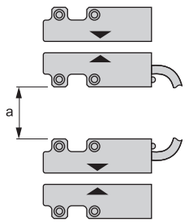
4 Mounting

・Required arrangement with ferromagnetic mouting support

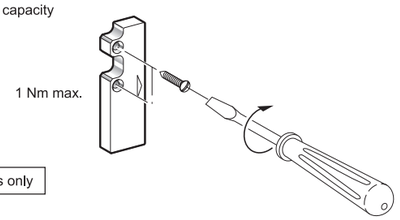
	a	b min.	⌀d
HS7A-DMC(mm)	40	13	81 X 55



Abjacent set-up



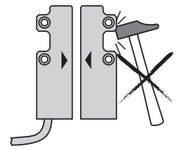
・Tightening torque, Tightening capacity



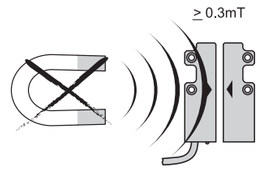
⚠ Use non-magnetic screws only

・Utilization precautions

・Adjustment of coded magnetic switches
The safety switch must not be used as a mechanical stop for your mobile protector, or be adjusted using a hammer.
The switch and actuator should be aligned by fitting of each shapes.



⚠ CAUTION



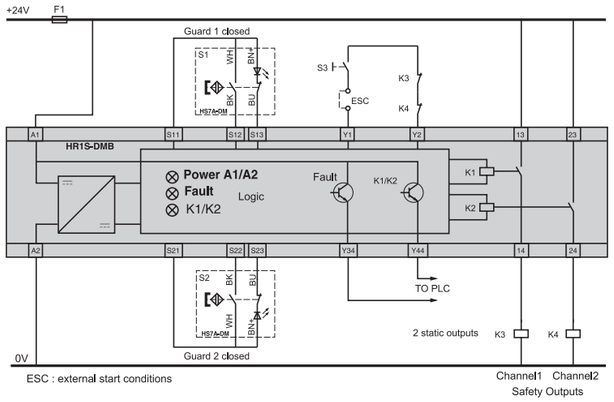
5 Wiring diagram

⚠ WARNING

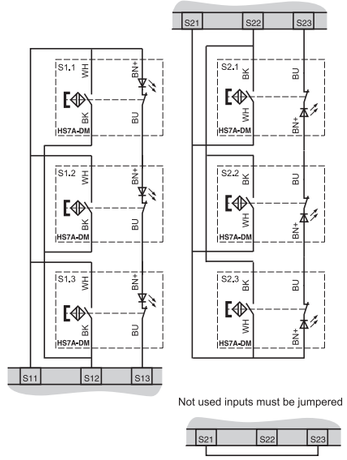
HAZARDOUS VOLTAGE
Disconnect all power before working on equipment.
Electric shock will result in death or serious injury.

＊Illustration of contacts with magnet present

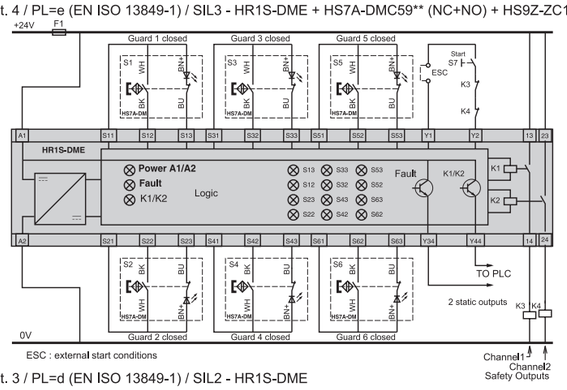
Cat. 4 / PL=e (EN ISO 13849-1) / SIL3 - HR1S-DMB + HS7A-DMC59** (NC+NO) + HS9Z-ZC1



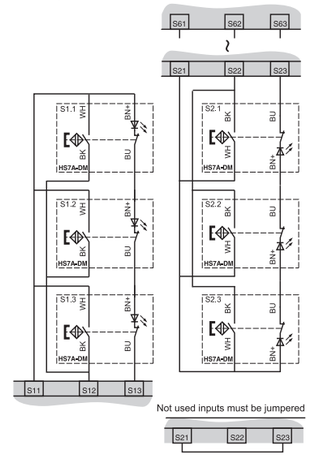
Cat. 3 / PL=d (EN ISO 13849-1) / SIL2 - HR1S-DMB



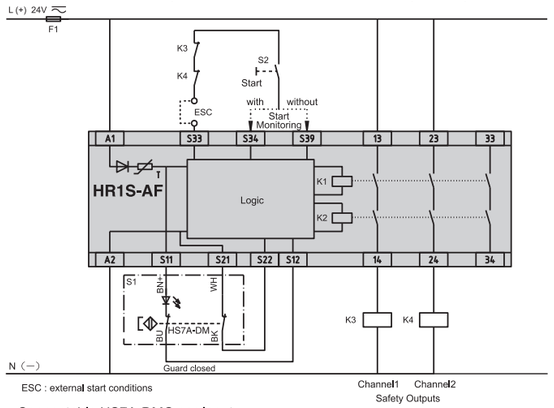
Cat. 4 / PL=e (EN ISO 13849-1) / SIL3 - HR1S-DME + HS7A-DMC59** (NC+NO) + HS9Z-ZC1



Cat. 3 / PL=d (EN ISO 13849-1) / SIL2 - HR1S-DME



Cat. 4 / PL=e (EN ISO 13849-1) / SIL3 - HR1S-AF + HS7A-DMC79** (NO+NO) + HS9Z-ZC1



Connectable HS7A-DMC per Input.

	HS7A-DMC59**		HS7A-DMC79**	
	without LED	with LED	without LED	with LED
HR1S-DMB/DME	6	3		
HR1S-AF			6	1

Type

Type No.	LED	Cable	Contact	Type No.	LED	Cable	Contact
HS7A-DMC5902	without	2m	NO + NC	HS7A-DMC7902	without	2m	NO + NO
HS7A-DMC5912	with			HS7A-DMC7912	with		
HS7A-DMC5905	without	5m		HS7A-DMC7905	without	5m	
HS7A-DMC5915	with			HS7A-DMC7915	with		
HS7A-DMC59010	without	10m		HS7A-DMC79010	without	10m	
HS7A-DMC59110	with			HS7A-DMC79110	with		

IDEC CORPORATION

http://www.idec.com

2016.1

DECLARATION OF CONFORMITY
We, IDEC CORPORATION 6-64, Nishimiyahara 2-chome Yodogawa-ku, Osaka 532-0004, Japan
declare under our sole responsibility that the product:
Description: Non-contact Safety Switch
Series Name: HS7A Series
Model No.: HS7A-DMC59** (** = 02, 12, 05, 15, 010, or 110), HS7A-DMC79** (** = 02, 12, 05, 15, 010, or 110)
to which this declaration relates is in conformity with the EC Directive on the following standard(s) or other normative document(s). In case of alteration of the product, not agreed upon by us, this declaration will lose its validity.
Applicable EC Directive: Low Voltage Directive (2006/95/EC)
EC Directive of Electromagnetic Compatibility (2004/108/EC)
Machinery Directive (2006/42/EC)
Applicable Standard(s) : EN ISO 13849-1, EN ISO 14119, EN 60204-1, EN 62061, EN 60947-1, EN 60947-5-1
Authorized Representative in EU : IDEC ELEKTROTECHNIK GmbH Heselstuecken 8, 22453 Hamburg, Germany