



MEC SYSTECH

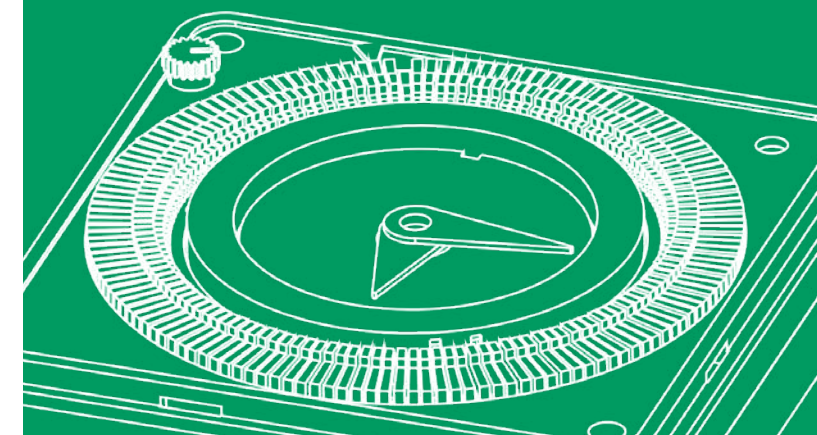
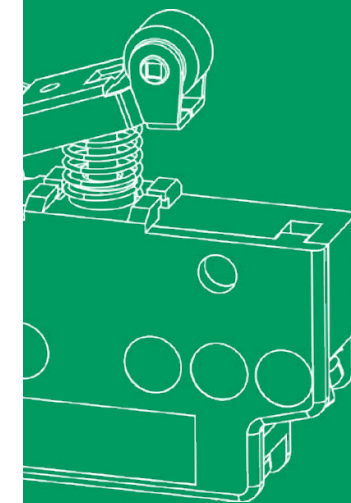
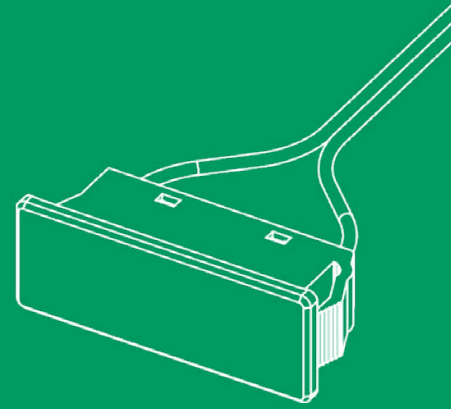


MEC SYSTECH



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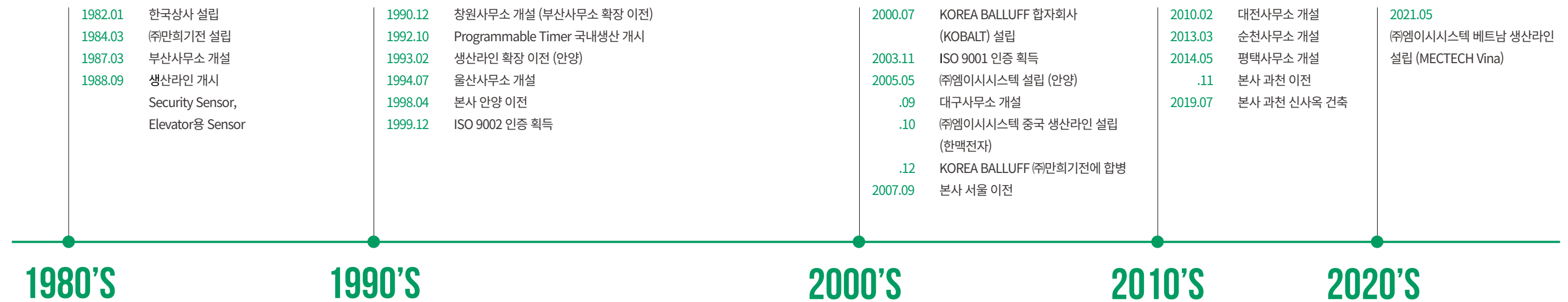




COMPANY PROFILE

MEC SYSTECH CO.,LTD.

주식회사 엠이시스텍은 고신뢰성, 장수명의 특징을 가지고 있는 리드 스위치를 사용하여 마그네트 구동형, 차폐동작형, 액츄에이터형(주문품) 등 전반의 제품을 생산하고 있습니다. 계측, OA 가전기전, 자동차관련, 방범 및 운반기기 등의 산업 전반에 걸쳐 광범위하게 적용되고 있으며, 자동화, 품질의 안정화, 가격 경쟁력 등 다양한 고객의 요구에 대응하고자 노력하고 있습니다.



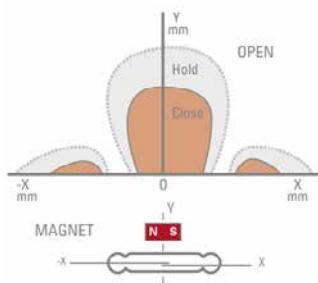
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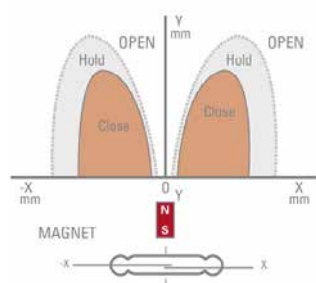
REED SWITCH의 특징

1. 최대 10,000 Volt 전압 switch
2. 최대 5A 전류 switch
3. 신호 손실없이 최저 10 nV 전압 switch/carry
4. 신호 손실없이 최저 1 femto A 전류 switch/carry
5. 신호 손실 최소화하면서 최대 7GigaHz switch/carry
6. 최대 1,015W의 접점 간 절연
7. 일반적인 접촉 저항(on resistance) 50mΩ(mW)
8. Off 상태에서는 전원이나 회로가 필요하지 않음
9. Latching 기능 구현 가능
10. 100ms ~ 300ms 작동 시간
11. -55°C ~ +200°C의 극한 온도 범위에서 작동 가능
12. 공기, 물, 진공, 오일, 연료 및 먼지가 많은 대기를 포함한 모든 유형의 환경에서 작동
13. 최대 30g에서 50Hz ~ 2000Hz의 진동 환경을 견딤
14. 마모 부품이 없는 경우 10mA에서 5V 미만의 부하로 10,000,000회 이상의 작동 수명을 보장
15. 대기전력 소모가 없어 휴대용 및 배터리 구동장치에 이상적
16. 스위칭 노이즈 없음

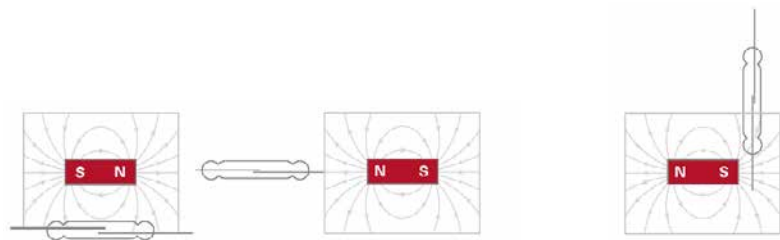
REED SWITCH의 동작유형



감지유형 1. 자석 양극 감지



감지유형 2. 자석 단극 감지

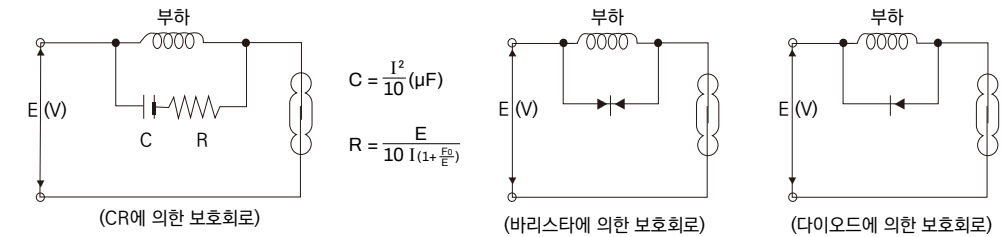


※ Reed Switch를 동작 시키려면 자석의 자기장 라인이 Reed Switch의 접점과 평행하게 정렬되어야 합니다.

유도 부하로부터 접점 보호

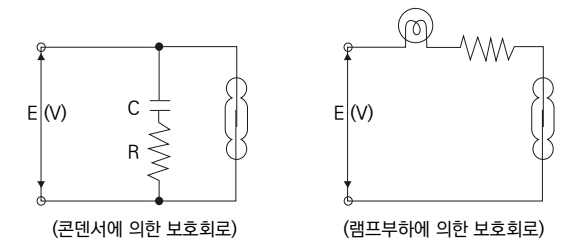
Motor, Coil, 전자 Solenoid 등의 Inductance (자계유도계수)를 부하로 사용할 경우에는 접점 개폐 시에 수백 Volt의 역기전력이 발생하고, 그 방전에 의해 접점수명이 현저히 저하됩니다.

이것을 방지하기 위해서는 CR회로, Varistor, Diode 등의 Arc 방지 회로가 필요합니다.



용량성 부하로부터 접점 보호

Condenser 부하, Lamp 부하, Cable 부하 등의 용량성 부하로 사용될 경우, Reed Switch의 접점용량 이상의 Surge 전류에 의한 접점의 용착을 방지하기 위해 Surge 억제기, 보호저항 등이 필요합니다.



자기 간섭

Reed Switch 또는 구동자계(자석, Coil)의 근처에 철판, Trans 등의 자성체가 배치되어 있는 경우는, 특성의 변화 및 오동작을 일으킬 수 있습니다. 이들은 자계의 힘으로 좌우되기 때문에 실사용 상태에서 확인해 주십시오. Reed Switch를 여러 개로 근접해서 실장할 경우에는 Reed Switch 상호간에 자기간섭이 발생하고 특성의 변화 및 오동작을 일으킬 수 있습니다. 이 경우 Reed Switch 상호간의 간격을 15mm 이상으로 설정하는 것이 필요합니다.

충격 및 진동

Reed Switch를 30cm 이상의 높이에서 딱딱한 바닥에 떨어뜨릴 경우 Reed Switch의 감동치, 개방치, 전류치 등의 특성에 영향을 줄 수 있습니다. 또한 단자나 외부 케이스를 비틀거나 심하게 당기는 등의 무리한 힘을 가했을 때에도 본래의 특성에 영향을 줄 수 있습니다. 또한 기계가공 시 발생하는 충격에도 주의가 필요합니다.

적용 제품 개발

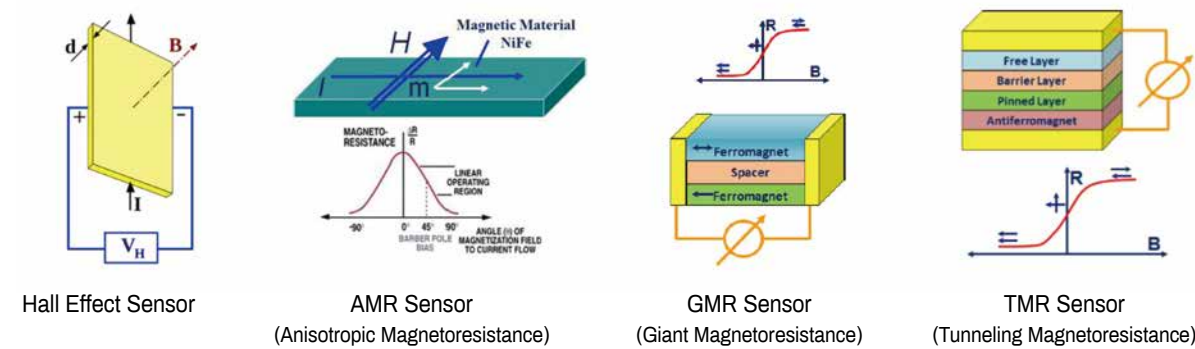
Reed Switch 적용 센서는 여러가지 우수한 특징점을 가지고 있으나 그것을 효과적으로 발휘하기 위해서는 사용하고자 하는 용도를 충분히 검토하여 적용하는 것이 대단히 중요합니다.

설계 및 제품에 관하여 의문사항이 있으시거나, 본 Catalog에 수록되지 않은 귀사만의 용도에 맞는 제품 개발이 필요하시다면 언제라도 연락을 주시면 성심껏 상담해 드리겠습니다.

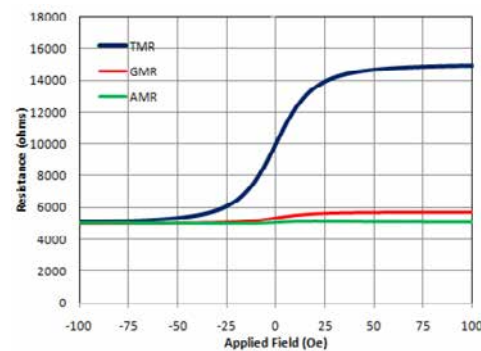
TMR SENSOR의 특징

1. 3V 이하 공급 전압 조건에서 1.5 μ A의 낮은 전력 소비
2. 1kHz 이상의 주파수 응답 속도
3. 반 영구적인 수명
4. -40°C ~ +150°C의 온도 범위에서 작동 가능
5. 더 큰 Air Gap이나 더 작은 자기장에도 반응하는 민감한 Switching Point
6. 소형 SOT-23 혹은 TO-92 Package

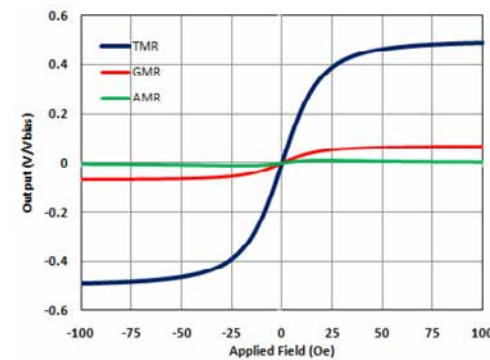
자기 센서의 세대별 특징



Technology	Power Cons. (mA)	Die Size (mm ²)	Field Sensitivity (mV/V/Oe)	Dynamic Range (Oe)	Resolution (nT/Hz ^{1/2})	Temperature Performance (°C)
Hall Effect Sensor	5~20	1X1	~0.05	1~1,000	>1,000	<150
AMR Sensor	1~10	1X1	~1	0.001~10	0.1~10	<150
GMR Sensor	1~10	1X2	~3	0.1~30	1~10	<150
TMR Sensor	0.001~0.01	0.5X0.5	6~50	0.001~200	0.1~10	<200



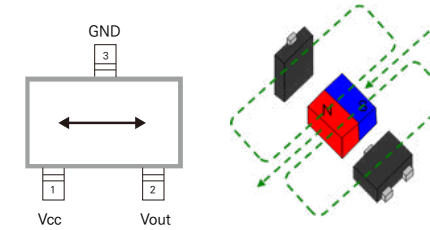
MR Transfer Curve 비교



MR Full Bridge Output 비교

TMR SWITCH SENSOR

TMR Switch Sensor는 자기장 감지 시 신호 출력의 형태에 따라 Omnipolar, Bipolar, Unipolar 제품으로 구분됩니다.

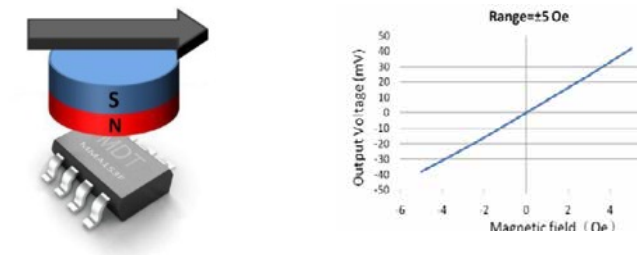


- Omnipolar – 자기장의 극성(N극, S극)을 구별하지 않고 감지 시 High
→ Low Level 출력
- Bipolar – 자기장의 특정 극성에 따라 출력 변화
ex) N극 감지 시 High Level 출력, S극 감지 시 Low Level 출력 (반대 경우도 가능)
- Unipolar – 자기장의 특정 극성(N극 or S극)만 감지 시 High
→ Low Level 출력

※ TMR Sensor를 동작 시키려면 자석의 자기장 라인이 TMR Sensor의 동작 자계 방향과 일치해야 합니다.
TMR Sensor는 X축 감지 형태가 많기 때문에 Hall Effect Sensor 대비 보다 다양한 형태로 감지가 가능합니다.

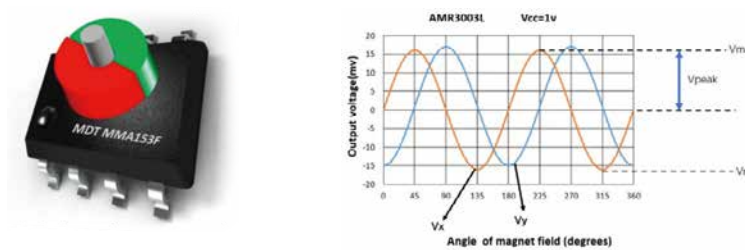
TMR LINEAR SENSOR

TMR Linear Sensor는 자기장의 극성 및 세기를 고해상도의 아날로그 전압으로 출력하는 제품입니다.



TMR ANGLE SENSOR

TMR Angle Sensor는 자기장의 각도를 고해상도의 Sin파 전압으로 출력하는 제품입니다.



적용 제품 개발

TMR 소자 적용 센서는 기존 자기 센서 소자 대비 여러가지 우수한 특징점을 가지고 있으나, 올바른 기능구현 및 최대의 성능을 발휘하기 위해서는 사용하고자 하는 용도와 환경을 충분히 검토하여 적절한 구현 회로 및 보호 회로 상에 적용하는 것이 기술의 노하우입니다.
설계 및 제품에 관하여 의문사항이 있으시거나, 본 Catalog에 수록되지 않은 귀사만의 용도에 맞는 제품 개발이 필요하시다면 언제든지 연락을 주시면 성심껏 상담해 드리겠습니다.

MAGNETIC PROXIMITY SENSOR

(주) MECSYTECH의 MAGNETIC PROXIMITY SENSOR는

- 고 신뢰성, 장 수명의 특징을 가지고 있는 Reed Switch 및 TMR 소자를 사용합니다.
- 마그네트 구동형, 차폐 동작형, 액츄에이터형 등의 전반적 제품을 생산하고 있습니다.
- 현재 계측 산업, 가전 산업, 방범 분야, 운반 기기 산업, 자동차 산업 등의 각종 산업 전반에 걸쳐 광범위하게 적용되고 있으며 생산 공정 자동화, 품질 안정화, 가격 경쟁력 확보 등 다양한 고객의 요구에 대응코자 노력하고 있습니다.

OA 기기 분야

적용제품 : 복사기, 프린터, 복합기
적용분야 : 카트리지 종이 감지/토너 잔량 감지/ 도어 개폐 감지 등

가전 기기 분야

적용제품 : 냉장고, 세탁기, 에어컨, 오븐
의류건조기, 전기밥솥, 정수기
제습기, 전자레인지, 공기청정
기, 자동 판매기 등
적용분야 : 도어 개폐 감지/필터 감지
수위 감지/만방 감지
RPM 감지 등

보안 기기 분야

적용제품 : 무인 방범 기기
적용분야 : 도어 개폐 감지
창문 개폐 감지
셔터 개폐 감지
Key 보관함 감지 등

자동차 산업 분야

적용제품 : 자동차
적용분야 : 스피드 감지
안전벨트 착용 감지
트렁크 개폐 감지
도어 개폐 감지
오일류 레벨 감지
파워 윈도우 구현 등

기타 분야

적용제품 : 산업용 기기, 엘리베이터 등
적용분야 : 실린더 위치 감지
공작기계 절삭공구 위치 감지
엘리베이터 층 감지
지하철 안전 도어 개폐 감지 등

접점 형식

NO 접점 (Normal Open type)

평소에는 연결되어 있지 않은 상태(open)로 유지되다가 자석이 동작범위 안에 접근하면 스위치가 동작하여 연결 상태(close)가 됨

NC 접점 (Normal Close type)

평소에는 연결된 상태(close)로 유지되다가 자석이 동작범위 안에 접근하면 스위치가 동작하여 연결되어 있지 않은 상태(open)가 됨

Transfer 접점 (전환형)

자석의 동작범위 안의 접근에 따라 ON, OFF 전환형 출력 형식

Latching 접점 (자기유지형)

한번 ON 또는 OFF가 되면 자석이 동작범위 밖에 있어도 다음 자계의 영향을 가할 때까지 그 접점형태를 그대로 유지하는 형식
(이 때 자석은 수평이동을 기본으로 함)

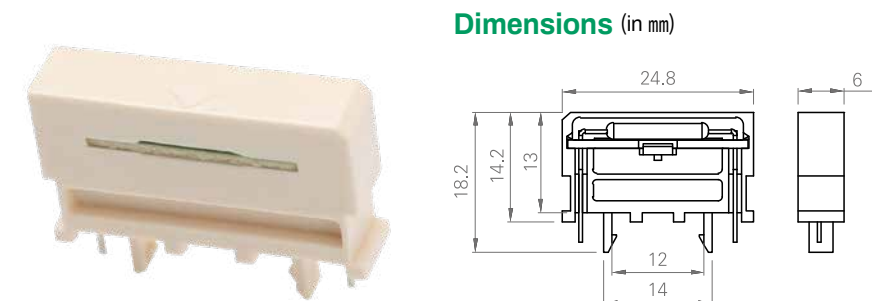
차폐 동작

동작범위 내에 있는 자석에 의해 스위치가 ON 상태에서, 검출구에 철판 등의 차폐판이 통과됨에 따라 접점이 OFF 되는 방식

Actuator 동작

자석이 취부된 가동부와 센서부를 일체화한 제품으로 검출 물체의 통과에 의해 가동부에 물리적인 힘이 인가되어 접촉 동작이 되면 접점이 OFF 되는 방식

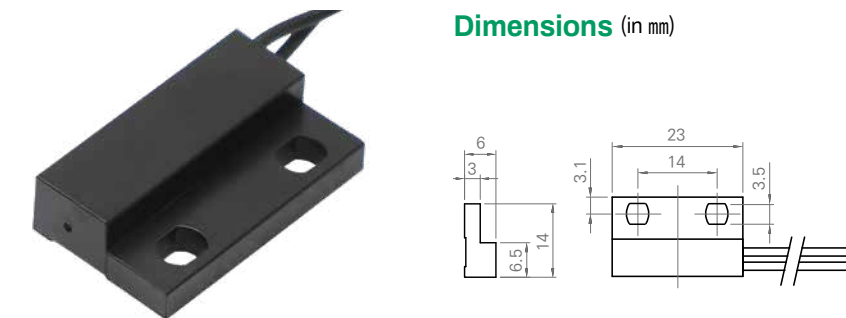
MS0208 Series



- Dimensions** (in mm)
- Features**
- Magnetically operated proximity sensor
 - Dual reed switch connection structure
 - PCB board direct insertion structure

Characteristics		Unit	Value
Contact form			2 X A Contact (Serial connection)
Contact Rating	VA / Watt - max		10
Voltage	Switching	Vdc – max.	200
	Breakdown	Vdc – max.	250
Current	Switching	Adc – max.	0.5
	Carry	Adc – max.	1.2
Temperature	Operating	°C	-20 ~ 80
Operating Time		ms – max.	0.6
Release Time		ms – max.	0.2

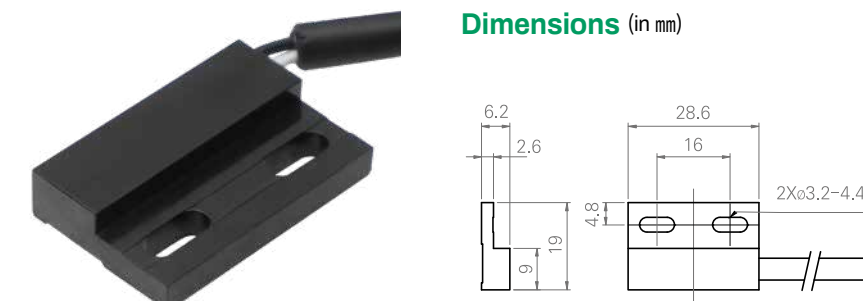
MS0301 Series



- Dimensions** (in mm)
- Features**
- Magnetically operated proximity sensor
 - Mounting structure using fixing hole
 - Customer defined sensitivity option
 - Choice of cable length and connector

Reed Switch				TMR			
Characteristics		Unit	Value	Characteristics		Unit	Value
Contact form			A Contact	Supply Voltage		Vdc-max.	5.5
						Vdc-min.	1.8
Contact Rating	VA / Watt - max		10	Output High Voltage		Vdc-min.	Vcc - 3.0
Voltage	Switching	Vdc – max.	200	Output Low Voltage		Vdc-max.	0.2
	Breakdown	Vdc – max.	250				
Current	Switching	Adc – max.	0.5	Output Current		mA	9
	Carry	Adc – max.	1.2				
Temperature	Operating	°C	-20 ~ 80	Temperature	Operating	°C	-20 ~ 80
Operating Time		ms – max.	0.6	Switching Speed		Hz	1,000
Release Time		ms – max.	0.2	ESD Level	HBM	kV	4

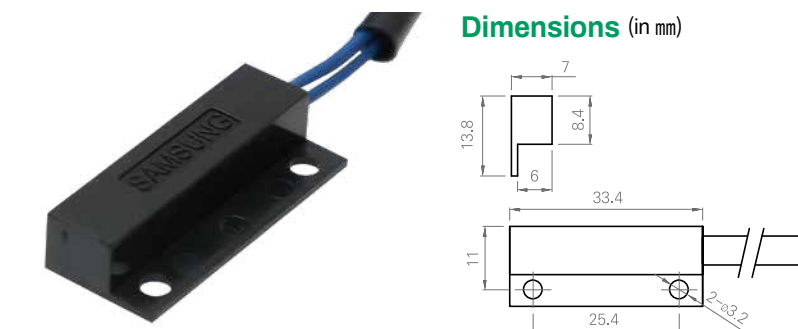
MS0302 Series



- Dimensions** (in mm)
- Features**
- Magnetically operated proximity sensor
 - Mounting structure using fixing hole
 - Customer defined sensitivity option
 - Choice of cable length and connector

Reed Switch				TMR			
Characteristics		Unit	Value	Characteristics		Unit	Value
Contact form			A Contact	Supply Voltage		Vdc-max.	5.5
						Vdc-min.	1.8
Contact Rating	VA / Watt - max		10	Output High Voltage		Vdc-min.	Vcc - 3.0
Voltage	Switching	Vdc – max.	200	Output Low Voltage		Vdc-max.	0.2
	Breakdown	Vdc – max.	250				
Current	Switching	Adc – max.	0.5	Output Current		mA	9
	Carry	Adc – max.	1.2				
Temperature	Operating	°C	-20 ~ 80	Temperature	Operating	°C	-20 ~ 80
Operating Time		ms – max.	0.6	Switching Speed		Hz	1,000
Release Time		ms – max.	0.2	ESD Level	HBM	kV	4

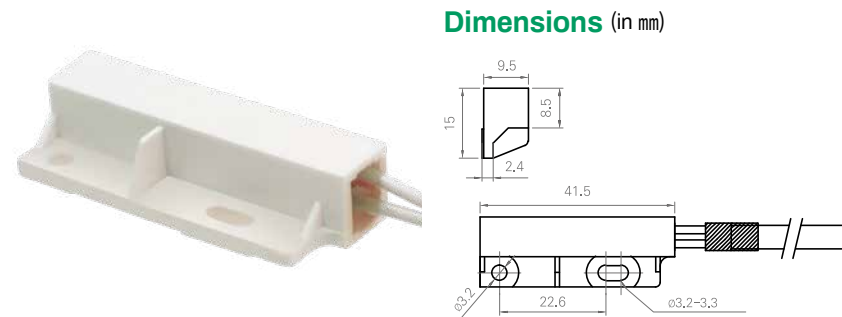
MS0308 Series



- Dimensions** (in mm)
- Features**
- Magnetically operated proximity sensor
 - Mounting structure using fixing hole
 - Customer defined sensitivity option
 - Choice of cable length and connector

Reed Switch				TMR			
Characteristics		Unit	Value	Characteristics		Unit	Value
Contact form			A Contact	Supply Voltage		Vdc-max.	5.5
						Vdc-min.	1.8
Contact Rating	VA / Watt - max		10	Output High Voltage		Vdc-min.	Vcc - 3.0
Voltage	Switching	Vdc – max.	200	Output Low Voltage		Vdc-max.	0.2
	Breakdown	Vdc – max.	250				
Current	Switching	Adc – max.	0.5	Output Current		mA	9
	Carry	Adc – max.	1.2				
Temperature	Operating	°C	-20 ~ 80	Temperature	Operating	°C	-20 ~ 80
Operating Time		ms – max.	0.6	Switching Speed		Hz	1,000
Release Time		ms – max.	0.2	ESD Level	HBM	kV	4

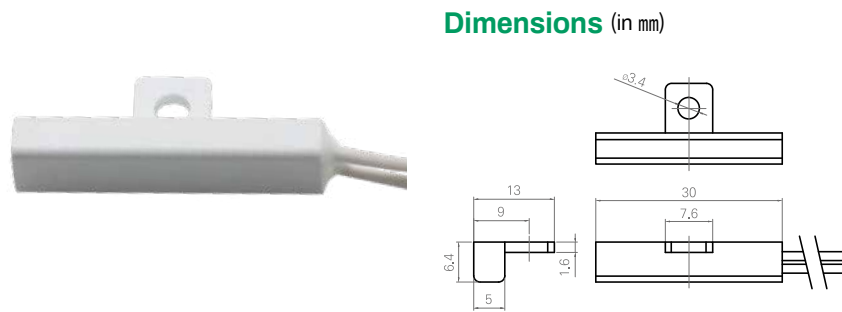
MS0309 Series



- Features**
- Magnetically operated proximity sensor
 - Dual reed switch connection structure
 - Mounting structure using fixing hole
 - Customer defined sensitivity option
 - Choice of cable length and connector

Characteristics		Unit	Value
Contact form			2 X A Contact (Serial connection)
Contact Rating	VA / Watt - max		10
Voltage	Switching	Vdc – max.	200
	Breakdown	Vdc – max.	250
Current	Switching	Adc – max.	0.5
	Carry	Adc – max.	1.2
Temperature	Operating	°C	-20 ~ 80
Operating Time		ms – max.	0.6
Release Time		ms – max.	0.2

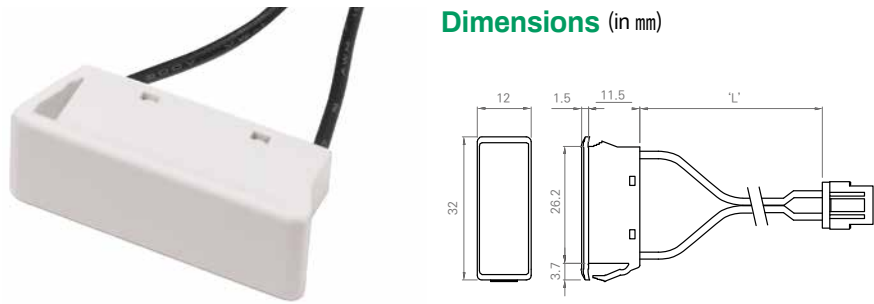
MS0405 Series



- Features**
- Magnetically operated proximity sensor
 - Mounting structure using hook shape
 - Customer defined sensitivity option
 - Choice of cable length and connector

Characteristics		Unit	Value
Contact form			A Contact
Contact Rating	VA / Watt - max		10
Voltage	Switching	Vdc – max.	200
	Breakdown	Vac – max.	150
Current	Switching	Vdc – max.	250
	Carry	Adc – max.	0.5
Temperature	Operating	Adc – max.	1
Operating Time		°C	-20 ~ 80
Release Time		ms – max.	0.4
		ms – max.	0.05

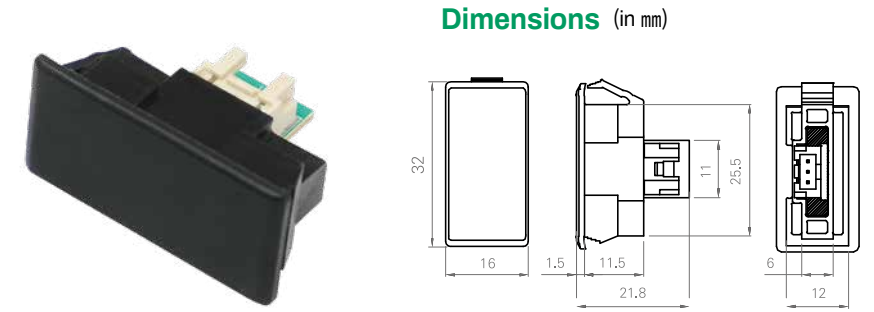
MS0406 Series



- Features**
- Magnetically operated proximity sensor
 - Mounting structure using hook shape
 - Customer defined sensitivity option
 - Choice of cable length and connector

Characteristics		Unit	Value
Contact form			A Contact
Contact Rating	VA / Watt - max		10
Voltage	Switching	Vdc – max.	200
	Breakdown	Vdc – max.	250
Current	Switching	Adc – max.	0.5
	Carry	Adc – max.	1.2
Temperature	Operating	°C	-20 ~ 80
Operating Time		ms – max.	0.6
Release Time		ms – max.	0.2

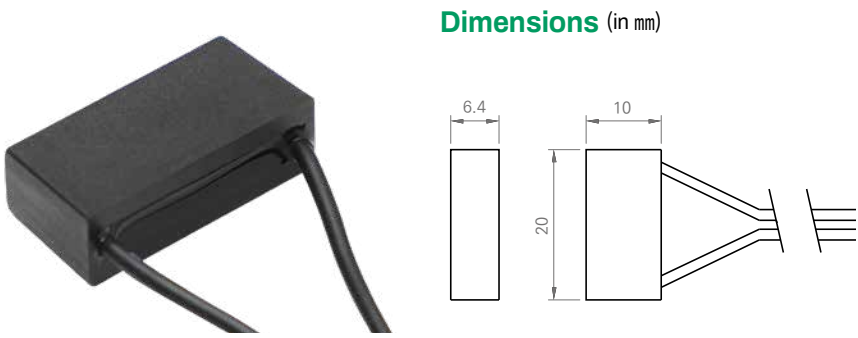
MS0407 Series



- Features**
- Magnetically operated proximity sensor
 - High temperature rated
 - Over voltage protection
 - Connector integrated structure

Characteristics		Unit	Value
Supply Voltage		Vdc-max.	5.5
		Vdc-min.	1.8
Output High Voltage		Vdc-min.	Vcc - 3.0
Output Low Voltage		Vdc-max.	0.2
Output Current		mA	9
Temperature	Operating	°C	-20 ~ 105
Switching Speed		Hz	1,000
ESD Level	HBM	kV	4

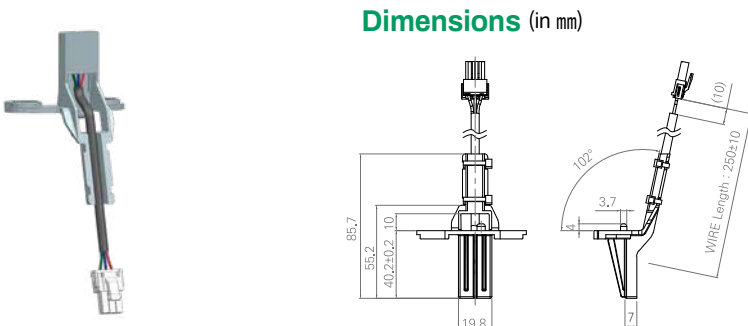
MS0411 Series



- Features**
- Magnetically operated proximity sensor
 - Customer defined sensitivity option
 - Choice of cable length and connector

Characteristics		Unit	Value
Contact form			A Contact
Contact Rating	VA / Watt - max		10
Voltage	Switching	Vdc – max.	200
	Breakdown	Vdc – max.	250
Current	Switching	Adc – max.	0.5
	Carry	Adc – max.	1.2
Temperature	Operating	°C	-20 ~ 80
Operating Time		ms – max.	0.6
Release Time		ms – max.	0.2

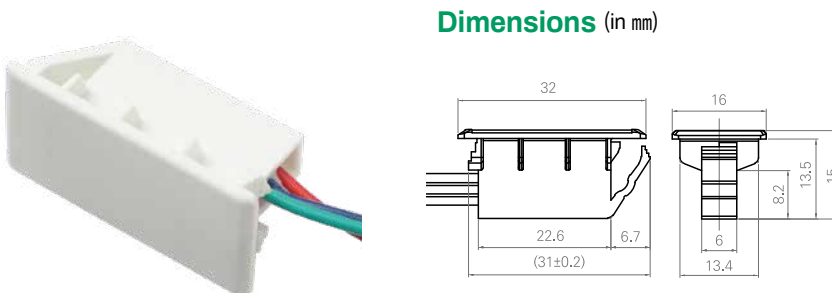
MS0414 Series



- Features**
- Magnetically operated proximity sensor
 - High-speed rotation detection
 - Over voltage protection

Characteristics		Unit	Value
Supply Voltage		Vdc-max.	5.5
		Vdc-min.	1.8
Output High Voltage		Vdc-min.	Vcc - 3.0
Output Low Voltage		Vdc-max.	0.2
Output Current		mA	9
Temperature	Operating	°C	-20 ~ 105
Switching Speed		Hz	1,000
ESD Level	HBM	kV	4

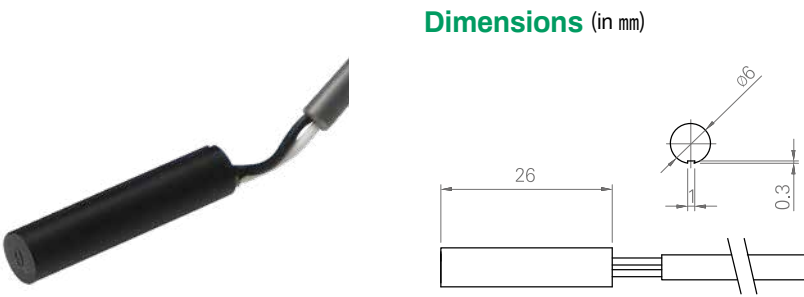
MS0436 Series



- Features**
- Magnetically operated proximity sensor
 - Mounting structure using hook shape
 - Over voltage protection
 - Choice of cable length and connector

Characteristics		Unit	Value
Supply Voltage		Vdc-max.	5.5
		Vdc-min.	1.8
Output High Voltage		Vdc-min.	Vcc - 3.0
Output Low Voltage		Vdc-max.	0.2
Output Current		mA	9
Temperature	Operating	°C	-20 ~ 105
Switching Speed		Hz	1,000
ESD Level	HBM	kV	4

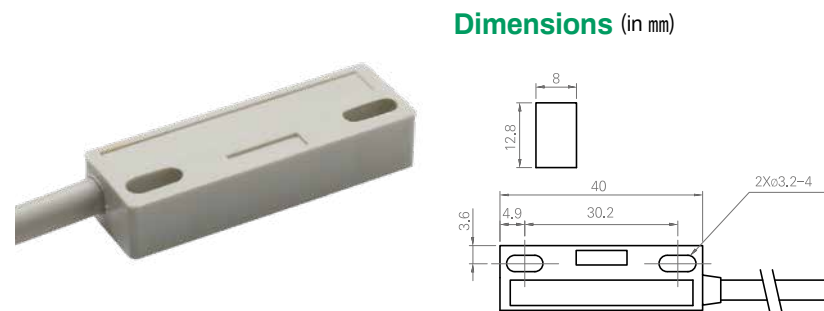
MS0501 Series



- Features**
- Magnetically operated proximity sensor
 - Customer defined sensitivity option
 - Choice of cable length and connector

Characteristics		Unit	Value
Contact form			A Contact
Contact Rating	VA / Watt - max		10
Voltage	Switching	Vdc – max.	200
	Breakdown	Vdc – max.	250
Current	Switching	Adc – max.	0.5
	Carry	Adc – max.	1
Temperature	Operating	°C	-20 ~ 80
Operating Time		ms – max.	0.5
Release Time		ms – max.	0.1

MS0702 Series

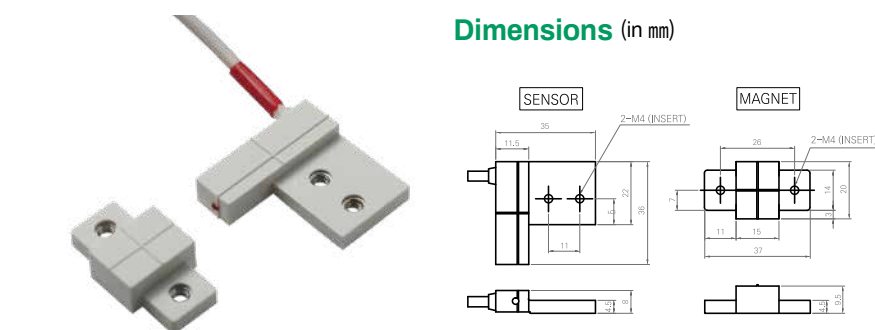


Features

- Magnetically operated proximity sensor
- Mounting structure using fixing hole
- Customer defined sensitivity option
- Choice of cable length and connector

Characteristics		Unit	Value
Contact form			A Contact
Contact Rating	VA / Watt - max		10
Voltage	Switching	Vdc – max.	200
	Breakdown	Vdc – max.	250
Current	Switching	Adc – max.	0.5
	Carry	Adc – max.	1.2
Temperature	Operating	°C	-20 ~ 80
Operating Time		ms – max.	0.6
Release Time		ms – max.	0.2

MS0704 Series

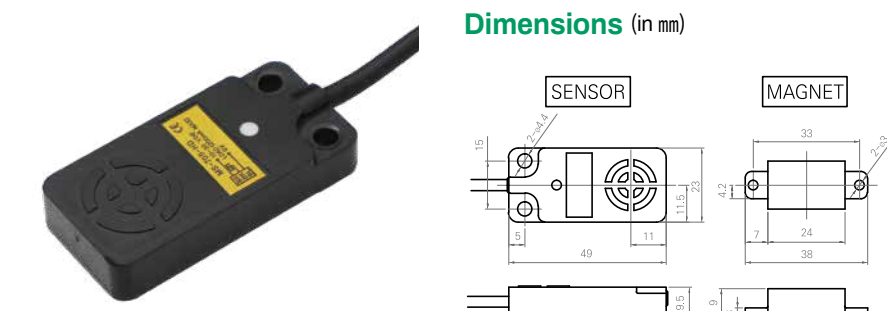


Features

- Magnetically operated proximity sensor
- Three-wire / Voltage output
- Over voltage / Over current protection

Characteristics		Unit	Value
Supply Voltage		Vdc-max.	30
		Vdc-min.	10
Output High Voltage		Vdc-min.	Vcc - 2.0
Output Low Voltage		Vdc-max.	0.2
Output Current		mA-max.	200
Temperature	Operating	°C	-20 ~ 80
Switching Speed		Hz	800
Protection			Over voltage / Over current
Switching Output type			NPN-NO

MS0705 Series

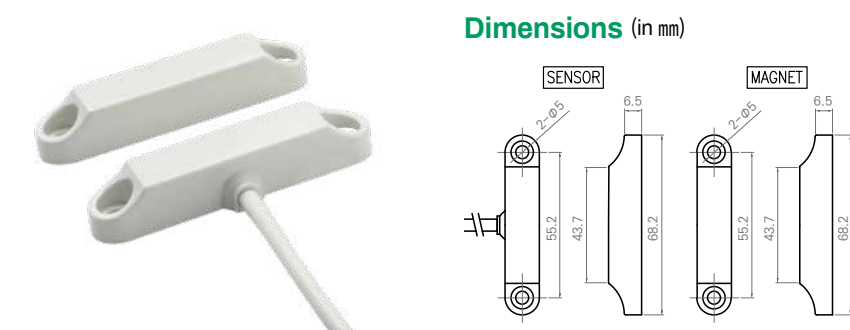


Features

- Magnetically operated proximity sensor
- Detect only the S pole of the magnet
- Three-wire / Voltage output
- Over voltage / Over current protection

Characteristics		Unit	Value
Supply Voltage		Vdc-max.	30
		Vdc-min.	10
Output High Voltage		Vdc-min.	Vcc - 2.0
Output Low Voltage		Vdc-max.	0.2
Output Current		mA-max.	200
Temperature	Operating	°C	-20 ~ 105
Switching Speed		Hz	800
Protection			Over voltage / Over current
Switching Output type			NPN-NO

MS1201 Series



Features

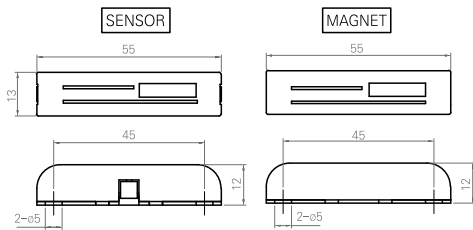
- Magnetically operated proximity sensor
- Mounting structure using fixing hole
- Customer defined sensitivity option
- Choice of cable length and connector
- A sensor and a magnet are configured as a pair

Characteristics		Unit	Value	
			Normal Type	High Voltage Type
Contact form			A Contact	A Contact
Contact Rating	VA / Watt - max		10	50
Voltage	Switching	Vdc – max.	200	200
	Breakdown	Vdc – max.	250	300
Current	Switching	Adc – max.	0.5	1.5
	Carry	Adc – max.	1.0	3.0
Temperature	Operating	°C	-20 ~ 80	-20 ~ 80
Operating Time		ms – max.	0.5	0.75
Release Time		ms – max.	0.1	0.3

MS1205 Series



Dimensions (in mm)



Features

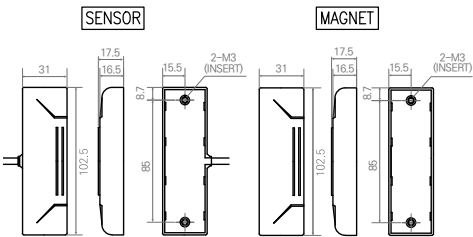
- Magnetically operated proximity sensor
- Easy installation (screw / sticker)
- Customer defined sensitivity option
- A sensor and a magnet are configured as a pair

Characteristics		Unit	Value	
			Normal Type	High Voltage Type
Contact form			A Contact	A Contact
Contact Rating	VA / Watt - max		10	50
Voltage	Switching	Vdc – max.	200	200
	Breakdown	Vdc – max.	250	300
Current	Switching	Adc – max.	0.5	1.5
	Carry	Adc – max.	1.0	3.0
Temperature	Operating	°C	-20 ~ 80	-20 ~ 80
Operating Time		ms – max.	0.5	0.75
Release Time		ms – max.	0.1	0.3

MS1301 Series



Dimensions (in mm)



Features

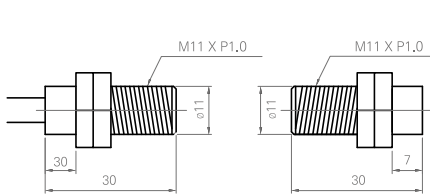
- Magnetically operated proximity sensor
- Mounting structure using fixing hole
- Customer defined sensitivity option
- Choice of cable length and connector
- A sensor and a magnet are configured as a pair

Characteristics		Unit	Value	
			Normal Type	High Voltage Type
Contact form			A Contact	A Contact
Contact Rating	VA / Watt - max		10	50
Voltage	Switching	Vdc – max.	200	200
	Breakdown	Vdc – max.	250	300
Current	Switching	Adc – max.	0.5	1.5
	Carry	Adc – max.	1.0	3.0
Temperature	Operating	°C	-20 ~ 80	-20 ~ 80
Operating Time		ms – max.	0.5	0.75
Release Time		ms – max.	0.1	0.3

MS1700 Series



Dimensions (in mm)



Features

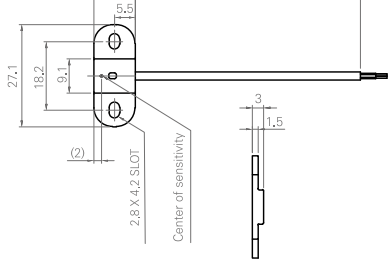
- Magnetically operated proximity sensor
- Metal threaded barrel with retaining nuts
- Customer defined sensitivity option
- Choice of cable length and connector
- A sensor and a magnet are configured as a pair

Characteristics		Unit	Value	
			Normal Type	High Voltage Type
Contact form			A Contact	A Contact
Contact Rating	VA / Watt - max		10	50
Voltage	Switching	Vdc – max.	200	200
	Breakdown	Vdc – max.	250	300
Current	Switching	Adc – max.	0.5	1.5
	Carry	Adc – max.	1.0	3.0
Temperature	Operating	°C	-20 ~ 80	-20 ~ 80
Operating Time		ms – max.	0.5	0.75
Release Time		ms – max.	0.1	0.3

MS2002 Series



Dimensions (in mm)



Features

- Magnetically operated proximity sensor
- Switching type / Latching type
- Ultra slim size (height 3mm)
- A wide range of supply voltage (3~40 vdc)
- High switching speed up to 100kHz
- LED function indicator
- IP67 enclosure rating
- Choice of cable length and connector type

Characteristics		Unit	Value
Supply Voltage		Vdc	3 ~ 40
Rated Operating Voltage		Vdc	24
Rated Operating Current		mA-max.	0.6
Output Current		mA-max.	150
Response Frequency		kHz	≥ 100
Temperature	Operating	°C	-40 ~ 125
ESD Level	HBM	kV	4
Protection			Over voltage / Reverse wiring
Switching Output type			PNP-NO

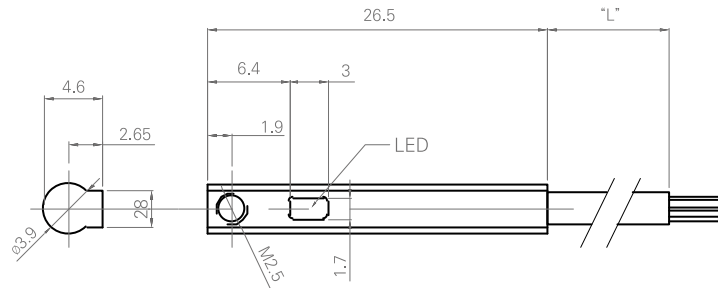
MS2005 Series



Features

- Fits into all commonly used cylinders, linear slides and grippers with C-slots
- Complete range with 3-wire (PNP / NPN), 2-wire
- LED function indicator
- IP 67 enclosure rating
- Choice of cable length and connector type

Dimensions (in mm)

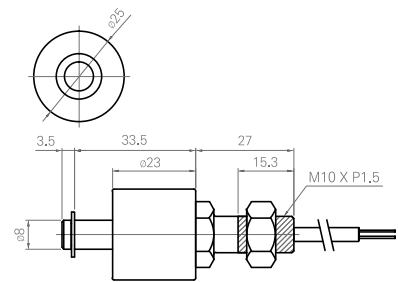


Characteristics		Unit	Value	
			3 Wire type	2 Wire type
Supply Voltage		Vdc	5 ~ 28	10 ~ 28
Supply Current		mA	10	50
Voltage Drop		Vdc – max.	0.5	5
Output Current		mA – max.	150	50
Leakage Current		mA – max.		0.8
Response time		ms	1	1
Temperature	Operating	°C	-40 ~ 125	-40 ~ 125
ESD Level	HBM	KV	4	4

MLS2000 Series



Dimensions (in mm)



Features

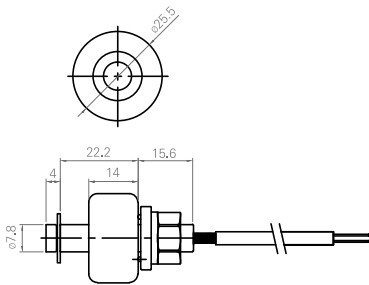
- Magnetically operated level sensor
- Sensor with integral float magnet attached
- Sensor operates when float rises from end stop position
- Choice of cable length and connector type

Characteristics		Unit	Value
Contact form			A Contact
Contact Rating	VA / Watt - max		10
Voltage	Switching	Vdc – max.	200
	Breakdown	Vdc – max.	250
Current	Switching	Adc – max.	0.5
	Carry	Adc – max.	1
Temperature	Operating	°C	-20 ~ 80
Operating Time		ms – max.	0.5
Release Time		ms – max.	0.1

MLS3000 Series



Dimensions (in mm)



Features

- Magnetically operated level sensor
- Sensor with integral float magnet attached
- Sensor operates when float rises from end stop position
- Choice of cable length and connector type

Characteristics		Unit	Value
Contact form			A Contact
Contact Rating	VA / Watt - max		10
Voltage	Switching	Vdc – max.	200
	Breakdown	Vdc – max.	250
Current	Switching	Adc – max.	0.5
	Carry	Adc – max.	1.0
Temperature	Operating	°C	-20 ~ 80
Operating Time		ms – max.	0.5
Release Time		ms – max.	0.1

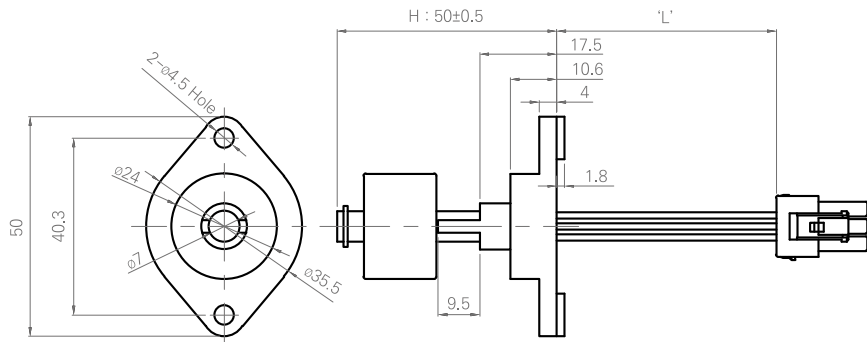
MLS3003 Series



Features

- Magnetically operated level sensor
- Complete range with 3-wire, 2-wire
- Over voltage protection
- High speed detection and High frequency response
- Semi permanent life
- Excellent shock resistance and vibration resistance

Dimensions (in mm)



Reed Switch				TMR			
Characteristics		Unit	Value	Characteristics		Unit	Value
Contact form			A Contact	Supply Voltage		Vdc-max.	5.5
						Vdc-min.	1.8
Contact Rating	VA / Watt - max		10	Output High Voltage		Vdc-min.	Vcc - 3.0
Voltage	Switching	Vdc – max.	200	Output Low Voltage		Vdc-max.	0.2
	Breakdown	Vdc – max.	250				
Current	Switching	Adc – max.	0.5	Output Current		mA	9
	Carry	Adc – max.	1.2				
Temperature	Operating	°C	-20 ~ 80	Temperature	Operating	°C	-20 ~ 80
Operating Time		ms – max.	0.6	Switching Speed		Hz	1,000
Release Time		ms – max.	0.2	ESD Level	HBM	kV	4

MPS2100 Series



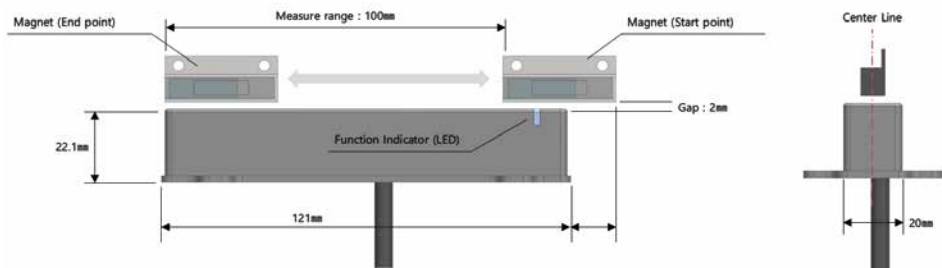
Features

- Continuously output the moving distance of the magnet
- 0 ~ 100mm detection range
- 0.1mm detection resolution
- Detectable at maximum 2mm GAP
- Detection position Absolute output

Benefits

- Non-contact type guarantees semi-permanent operating life
- The detection range can be adjusted according to the application
- Used for motion control of cylinders and actuators

Dimensions (in mm)



Characteristics		Unit	Value
Supply Voltage		Vdc	10 ~ 30
Rated Operating Voltage		Vdc	24
Rated Operating Current		mA-max.	50
Output		Vdc	0 ~ 10 (analog) / 11 (error)
Linearity Range		mm	0 ~ 100
Measuring Range		mm	0 ~ 100
Resolution		µm	100
Repeat Accuracy		µm	± 100
Non-linearity Max.		µm	± 500
Temperature	Operating	°C	-20 ~ 80
Magnet Grade			Neodymium

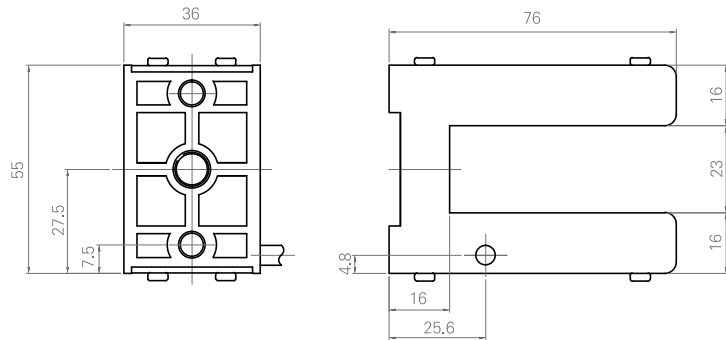
MPS1600 Series



Features

- Magnetically operated position sensor
- Sensor and magnet contained in single housing
- Sensor operates when ferrous vane passed through slot
- Choice of cable length and connector

Dimensions (in mm)

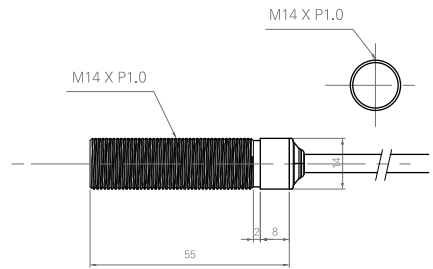


Characteristics		Unit	Value
Contact form			A Contact
Contact Rating	VA / Watt - max		50
Voltage	Switching	Vdc – max.	200
	Breakdown	Vdc – max.	300
Current	Switching	Adc – max.	1.5
	Carry	Adc – max.	3
Temperature	Operating	°C	-20 ~ 80
Operating Time		ms – max.	0.7
Release Time		ms – max.	0.2

MP2700 Series



Dimensions (in mm)



Features

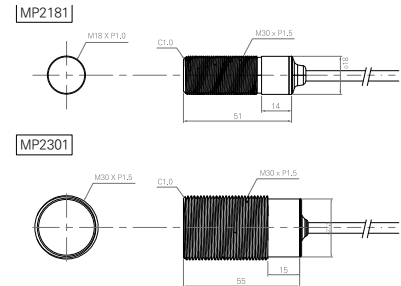
- Linear type Proximity Sensor
- 0 ~ 5mm detection range
- 100µm detection resolution
- Voltage / Current output selectable
- Fully enclosed structure
- Metal threaded barrel with retaining nuts
- Available in high temperature, high pressure environments

Characteristics		Unit	Value
Supply Voltage		Vdc	10 ~ 30
Rated Operating Voltage		Vdc	24
Rated Operating Current		mA-max.	50
Output Signal			0 ~ 10V (analog)
			4 ~ 20mA (analog)
Measuring Range		mm	0 ~ 5
Resolution		µm	100
Repeat Accuracy		µm	± 100
Temperature	Operating	°C	-20 ~ 150

MP2181 / MP2301 Series



Dimensions (in mm)



Features

- Switching type Proximity Sensor
- Ultra low power consumption (≤1.8µA)
- High-speed detection
- Fully enclosed structure
- Metal threaded barrel with retaining nuts
- Available in high temperature, high pressure environments

Characteristics		Unit	Value		
			Min.	Typ.	Max.
Operating Voltage		Vdc	2	3	5
Operating Current		µA	1.4		1.8
Output Voltage		Vdc	Vcc - 0.5		Vcc
Sensing Distance		mm	5		10
Response Frequency		Hz		1,000	
ESD Level		kV		4	
Temperature	Operating	°C	-20		80

MPS2100 Series



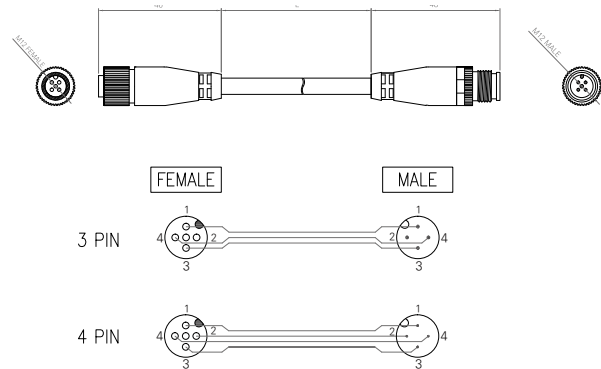
Features

- M12 / M8 A-CODE standard connector cable
- Application of structure to prevent loosening by vibration
- IP67 compliant waterproofing ability
- Oil-resistant PVC, PUR cable applied

General Information

Connector series	M12
Gender	Female - Male
Locking type	Fix screw
Mounting type	Straight- Straight type

Dimensions & Wiring (in mm)



Characteristics

Protection	IP67 in locked condition
Ambient temperature	-20°C ~ 80°C
Mode of connections	Screw clamps
Nominal power	4A
Nominal voltage	250VAC / 300VDC
Insulation resistance	109 Ω
Contact resistance	≤ 5mΩ

Cable Information

Cable			PVC		PU	
No. of core			3 Core	4 Core	3 Core	4 Core
Drawing						
Conductor	Material		Tinned copper		Tinned copper	
	Stranding	Pcs / mm	48 / 0.10	48 / 0.10	48 / 0.10	48 / 0.10
	Section	AWG / mm ²	22 / 0.38		22 / 0.38	
	Conductor resistance	Ω /km	55		55	
Insulation	Material		PVC		PET	
	Diameter	mm	1.7	1.45	1.7	1.45
	Avg. thickness	mm	0.45	0.34	0.45	0.34
Jacket	Material		PVC		TPU	
	Avg. thickness	mm	1.3	1.3	1.3	1.3
	Avg. diameter	mm	6.0±0.1		6.0±0.1	
Temperature		°C	80 / 300V		80 / 300V	

TIME SWITCH



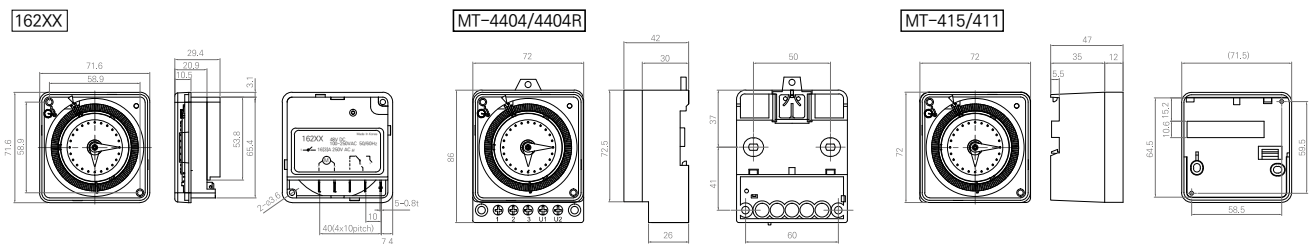
Features

- Analog timer for power saving function
- For 24 hours, up to 10 minutes on/off setting
- Main power source
 - The stepping motor controlled by Quartz crystal
- 'Always ON' and 'AUTO ON-OFF' functions
- Installable on wall panels or din rails

Benefits

- Intuitive and easy operation method
- 16A load capacity
- Support for various installation types

Dimensions & Wiring (in mm)



Characteristics

Characteristics	Value	Characteristics	Value
Type of programming	analog	Supply voltage	100~220V AC / 48V DC
Cycle	Daily (24hr)	Breaking capacity	16A 240VAC
Number of contacts	1	Frequency	50/60Hz
Type of contacts	1 changeover	Max. power with incandescent lamps	1000 W
Shortest switching time	10 min	Connection cross-sect. cable	1~4mm ²
Fixing mode	surface-mounting	Height of installed product	72mm
	bracket-mounting		
Summer/Winter time change	manual	Width of installed product	72mm
Number of program steps	72	Depth of installed product	47mm

Cable Information

Model Name	Product Type	Terminal Type	Power outage compensation time	Direction	Load capacity	Operating Voltage		
MT-4404	TIMER	Exposed	-	Forward	16A (Motor load 3A) 0.2	100~220VAC 50/60Hz 48VDC		
16219	MODULE		-					
MT-4404R	TIMER		200 hrs					
16213	MODULE		200 hrs					
MT-415	TIMER	Hidden	-	Reverse				
16220	MODULE		-					
MT-411R	TIMER		200 hrs					
16215	MODULE		200 hrs					

DC SWITCH



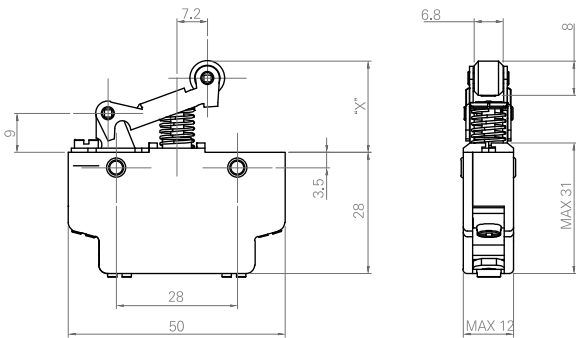
Features

- Snap Action Switch for Controlling Machine, Door and Factory
- Specialized Design for DC Power Environment
- Safety Limit Switch in controlling panel or electric switch
- Resistant to Harsh Shock and Vibration
- Sensor Function for controlling NC, PLC or Computer

Benefits

- Resistant to Harsh Shock and Vibration
- Long Life Switch with over 10 million times Operation
- Safety Function by applying force to Actuator to unstick when contacts fused

Dimensions & Wiring (in mm)



Characteristics

ACTUATOR	ACTUATOR TRAVEL ("X")
Free position	20.25 ± 0.35mm
Operating position	18.40 ± 0.5mm
Release position	16.60 ± 0.5mm
Limit position	13.30mm

ELECTRICAL TECHNICAL DATA	
Contact configuration	1NC, 1NO
Contact resistance	≤50mΩ (Initial value)
Rated impulse withstand voltage Uimp	4kV
Conventional thermal current Ith (at Ta=85°C)	10A
Rated insulation voltage Ui	400V
Utilization category DC	110V/1A
Utilization category AC	230V/3A (R Load)

PERFORMANCE	
Mechanical life, cycles	107
Electrical life, cycles	106
Maximum operating frequency	465 cycles / min
Protection degree (IEC60947)	Contacts IP40, Terminal IP00
Ambient temperature Ta	-40 ~ +85°C
Vibration resistance	10~55Hz, 1.5mm, all directions
Shock resistance	30g, 11ms, all directions

MATERIAL & USAGE	
Contact material	Ag
Housing material	PC, transparent
Mounting	Side, Front
Terminals	M3 screw type

MECHANICAL TECHINAL DATA	
Actuating speed	1m/s Max. 1mm
Actuating force	3.3N
Contact gap	2 x 1.2mm
Weight	32.5g
Dimension (L x D x H)	50 x 12 x 28 mm

MICRO WAVE



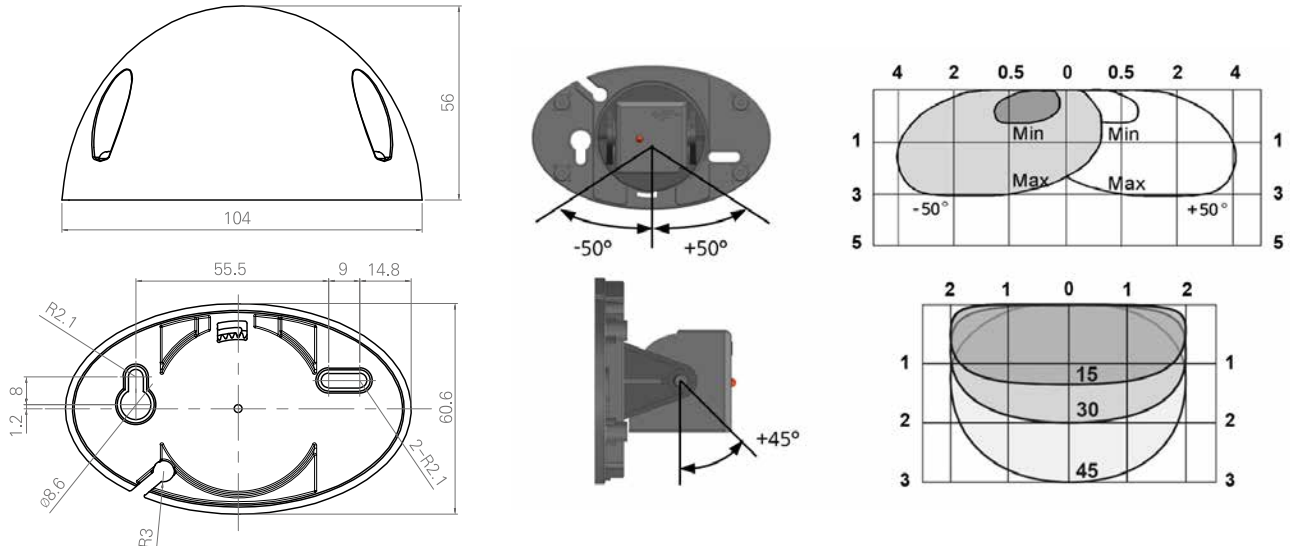
Features

- Detecting motion of objects (microwave)
- 24.125Ghz frequency
- Adjustable up and down angle (0~45°)
- Adjustable left and right mounting angle (-30 ~ 30°)
- The sensing area can be adjusted by adjusting the sensitivity

Benefits

- No misdetection due to heat or color, ensuring stability
- Outdoor environment can be used by using high frequency
- Human approach detection

Dimensions (in mm)



Characteristics

Characteristics	Value	Characteristics	Value
Sensing Method	Microwave	Output Type	NPN (Relay, PLC)
Transmitter Frequency	24,125±50 Mhz	Output Current	200mA
Transmitter Radiated Power	< 16 dBm EIRP	Temperature Range	-20°C ~ 60°C
Tilt Angles	-50°~50° (lateral)	Norm Conformity	EMC 2004 / 108 / EC
	0°~90° (vertical)		
Detection Speed	0.05 m/s ~ 10 m/s	Degree of protection	IP43
Detection Area	2.5m X 2.5m	Dimensions	104mm X 56mm X 65mm
Supply Voltage	DC 10V ~ 35V	Weight	70g (NET)
Power consumption	< 1.0W	Length of cable	5M

A/D CONVERTER



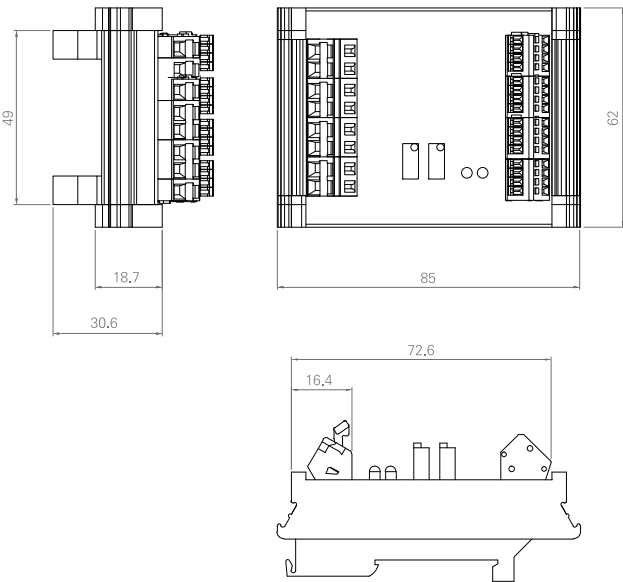
Features

- Converts the sensor's current and voltage analog output to digital output
- 2^10bit output
- 1kHz Sampling rate
- Indication LED

Benefits

- Overcurrent and overvoltage protection
- DIN RAIL installation structure
- Gain Adjust function according to input when contacts fused

Dimensions (in mm)



Input (Voltage)	
Characteristics	Value
Input Signal	0 ~ 10V
Input Max.	12V
Input Resistance	2.5kΩ
Sampling Rate	1KHz (1ms)

Main Characteristics	
Characteristics	Value
Supply Voltage	DC 15~30V
Current Consumption	27mA
Protective Measure	Over Voltage
	Over Current
Operating Temperature	0°C~ 55°C

Input (Current)	
Characteristics	Value
Input Signal	0 ~ 20mA
Input Max.	100mA
Input Resistance	200Ω
Sampling Rate	1KHz (1ms)

Output	
Characteristics	Value
Output Signal	10 bits
Output Level-1 Signal	"H" Vcc – 0.6V
0-Signal "L"	Open Output
Current Input	LED (RED)
Voltage Input	LED (GREEN)

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MECTECH Vina
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