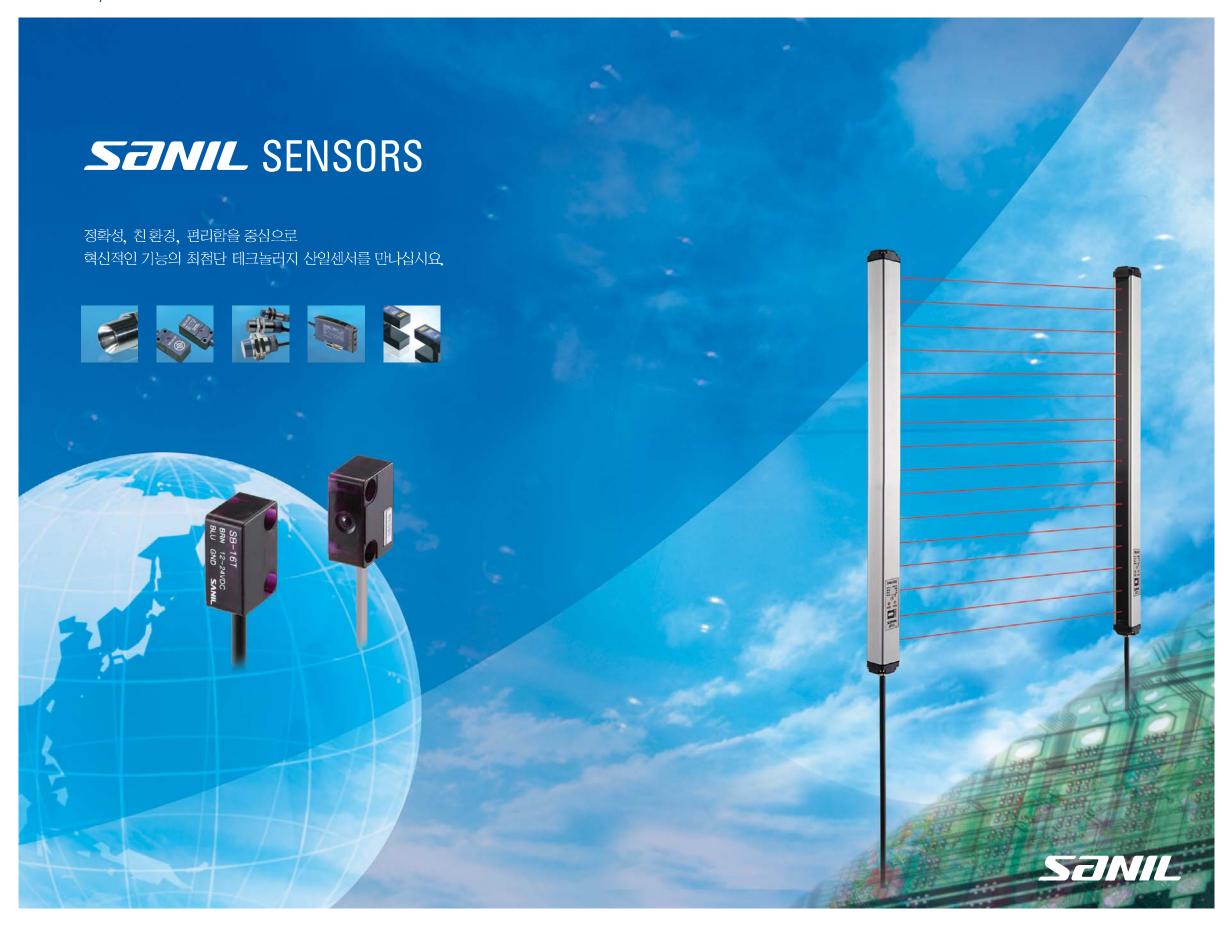




Best choice for your success



Contents

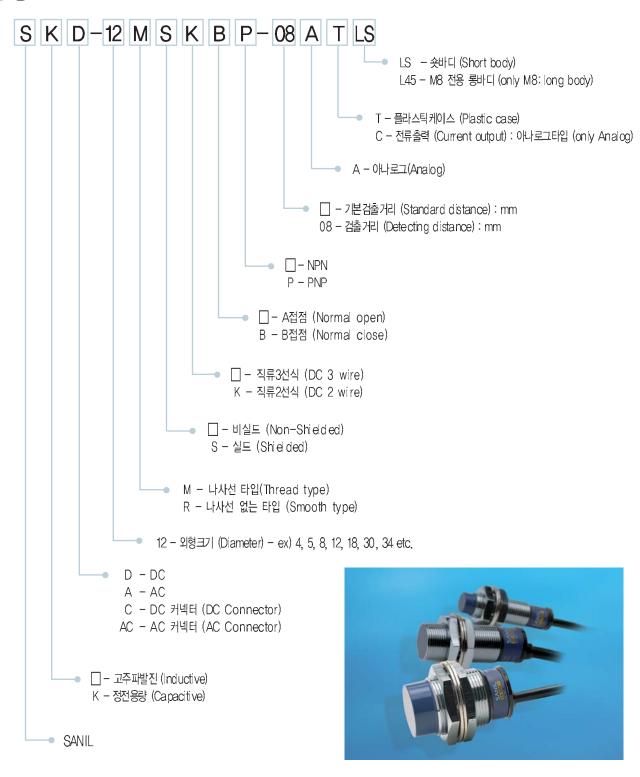
<u>초소</u>형 Ultra mini type

Photoe	Jootrio	00000
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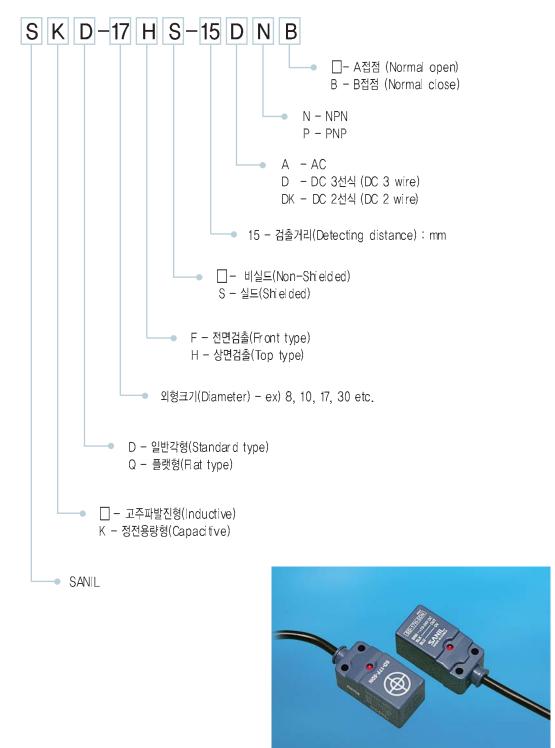
SB-16 series 10	
박 형Slim type SB-20 series12	
SB-20 series 12 소 형Mini type	
SB-30 series	
전원내장형 Free voltage type	
SB-50 series 26	
앰프분리형 Amplifier separated type	
SB-99 series 32	
Fiber optic sensor	
볼륨조절형 Volume type SBF series ············ 44	
051 301103	
U-type sensor	
광전식 Photoelectric type	
SB-73 series 52	
자석식 Magnetic type	
SL-73 series 54	
Area sensor	
평행주사방식 Parallel type	
평맹구사당직 Lataties type 멀티스케방식 Multiscan type	
SMB series 56	
Ultrasonic sensor	
SUD series 60	
Microwaya cancar	
Microwave sensor	
동작감지센서 Motion detecting sensor	
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Converter	
출력변환기 64	
Connector cable	
커넥터 케이블 66	
Temp. controller	
온도 콘트롤러 68	
Drovimity outitob	
Proximity switch	
고주파발진형 Inductive Proximity switch 70	
정전용량형 Capacitive Proximity switch 94	
아나로그형 Analog Inductive Proximity switch · · · 106	
TIPLE & FUNDING INCOME TO ANNING STATES TOU	

SELECTION GUIDE

원주형 근접 Cylindrical type



각형 근접 Square type



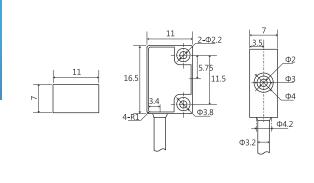
Selection Guide

ULTRAMINI TYPE

투과형 Through Beam



- Ultra Mini size (7mm X 11mm)
- Infrared LED
- Surge protection
- Cable 1m

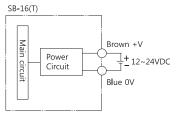


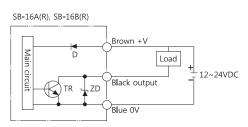
1	7 →
	\rightarrow_R
	Through beam

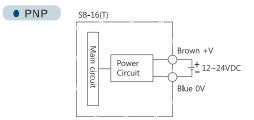
검출거리 (Detecting distance)			500mm	200 mm	
DC 3 wire 12~24V	NPN	Dark ON	SB-16A	SB-16A-2	
(Ripple ±10%)	INMN	Light ON	SB-16B	SB-16B-2	
	PNP	Dark ON	SB-16AP	SB-16AP-2	
	PINP	Light ON	SB-16BP	SB-16BP-2	
최소검출물체 (Detecting	target	of Min)	≥ Ø20상 불투명체 (opaque materials)		
소비 전류(Consump	dian cu	rrent)	투광기 (trans mitter) : ≤ 15mA 이	하, 수광기(receiver):≤ 15mA이하	
제 어 출력(Control o	utput)		NPN(PNP) Transistor open collector	, 부하전류 (load current): ≤ 50mA 이하	
광 원(Light sou	rce)		적외광 LED	(infrared LED)	
응답 시간(Response	e time)		≤ 1ms0 ō⊦		
보호 등급(Protection	n categ	ory)	IP 65 (EC specification)		
단락 보호(Short circuit protection)			Y	/es	
전원역접속보호 (Reverse polarity protection)		protection)	7	<i>y</i> es	
사용주위조도 (Ambient i	사용주위조도 (Ambient illumination)		태양광 (sunlight): 20,000 lx, 백열등 (incandescent): 3,000 lx		
사용주위온도 (Ambient	tempera	ature)	동작시(operating): -10°C~55°C, 보존시(storage): -30°C~70°C(단 결빙, 결로하지 않을겠		
내 전 압(Dielectric	streng	th)	1kVAC, 50/60Hz for 1min		
내 진 동(Vibration))		1.5mm amplitude at frequency of 10 \sim 55-1z in each of X,Y,Z directions for 2hours		
내 충 격(Shock resistance)			500 1 (50G) X, Y, Z direction for 3 times		
절 연 저 항(Insulation resistance)			≥ 20Mcのは (DC 500V Megger)		
표 시 등 (Indicator)			투광갸 전원표시(적색) Transmitter: Power(red LED)		
			수광기: 동작표시(적색) Receiver Operating (red LED)		
케 이 블(Cable 1m: PVC)			투광기 (trans mitter) : Ф2.5 x 2C x 0.088Q 흑색 (black)		
			수광기 (receiver): Ø2.5 x 3C x 0.08SQ 회색 (gray)		

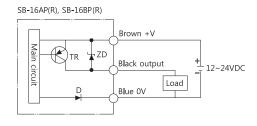
제어출력 회로도 Control output diagram

• NPN



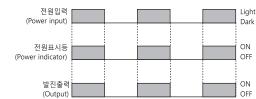


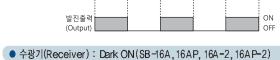


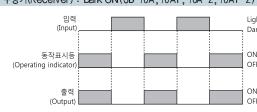


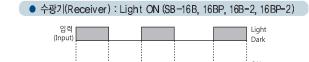
동작차트 Operating chart

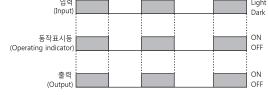
• 투광기(Transmitter)





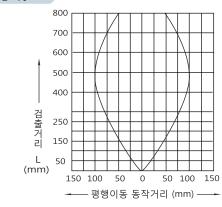




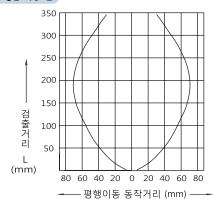


검출영역 특성곡선 Characteristics

• SB-16



• SB-16-2

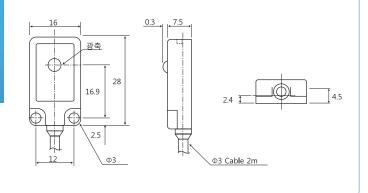


SLIM TYPE

투과형 Through Beam



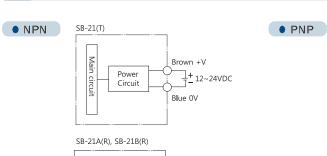
- Slim type (7.5mm)
- Infrared LED
- Surge protection
- Cable 2m (captyre)

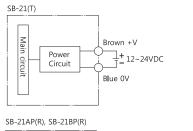


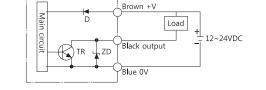


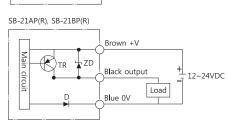
검출거리 (Detecting	검출거리 (Detecting distance)		1,5m	
DC 3 wire 12~24V	NICNI	Dark ON	SB-21A	
(Ripple $\pm 10\%$)	NPN	Light ON	SB-21B	
	PNP	Dark ON	SB-21BP	
	PNP	Light ON	SB-21AP	
최소검출물체 (Detecting	j target	of Min.)	≥ Ø10이상 불투명체 (opaque materials)	
소비 전류(Consump	dian cu	rrent)	투광기 (trans mitter) : \leq 20 mA 이하, 수광기 (receiver) : \leq 20 mA 이하	
제 어 출력(Control o	utput)		NPN(PNP) Transistoropen collector, 부하전류 (load current): ≤ 100mA 이하	
광 원(Light sou	rce)		적외광 LED (infrared LED)	
응답 시간(Response	e time)		≤ 2ms 0 ō	
보호 등급(Protection	n categ	ory)	IP 67 (IEC specification)	
단락 보호(Short cire	단락 보호(Short circuit protection)		yes	
전원역접속보호 (Reverse	전원역접속보호 (Reverse polarity protection)		yes	
사용주위조도 (Ambient	illumina	ition)	태양광 (sunlight): 100,000 lx, 백열등 (incandescent): 3,000 lx	
사용주위온도 (Ambient	tempera	ature)	동작시(operating): -25°C~60°C, 보존시(storage): -25°C~70°C(단, 결빙, 결로하지 않을겠	
내 전 압(Dielectric	streng	th)	1kVAC, 50/60Hz for 1min	
내 진 동(Vibration)		1.5mm amplitude at frequency of 10~55Hz in each of X,Y,Z directions for 2hours	
내 충 격(Shock re	내 충 격(Shœk resistanœ)		500% (50G) X, Y, Z direction for 3 times	
절연 저항(Insulation resistance)		ance)	≥20Mp이상(DC 500V Megger)	
표 시 등(Indicator)			투광기 전원표시(적색) Transmitter: Power (red LED)	
			수광기 동작표시 (적색) Receiver Operating (red LED)	
케 이 블(Cable 2m : PVC)			투광기(transmitter): Ø3 x 2C x 0.2SQ	
			수광기 (receiver): Ø3 x 3C x 0.2SQ	

제어출력 회로도 Control output diagram

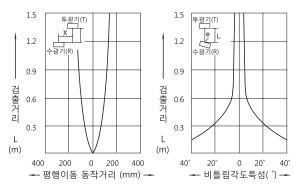


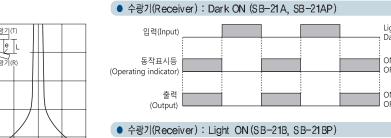


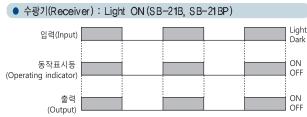




검출영역 특성곡선 Characteristics / 동작차트 Operating chart

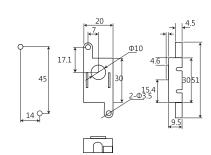




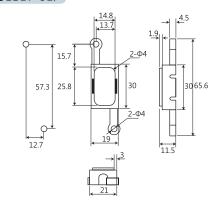


브라켓 외형도 Bracket dimensions

• A형 (SBB21-01)



● B형 (SBB21-02)

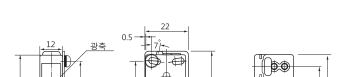


MINI TYPE

투과형 Through Beam



Mini sizeSurge protection

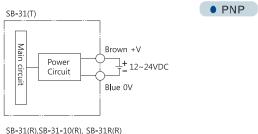


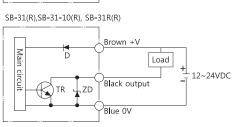


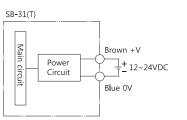
검출거리 (Dete	ecting	distance)	5m	10m	5m
		D/O, L/O Adjustable	SB-31	SB-31-10	SB-31R
DC 3 wire	NPN	Dark ON	SB-31A	SB-31A-10	SB-31RA
12~24V		Light ON	SB-31B	SB-31B-10	SB-31RB
(Ripple ±10%)		D/O, L/O Adjustable	SB-31P	-	-
	PNP	Dark ON	SB-31AP	_	-
		Light ON	SB-31BP	_	-
최소검출물체 (Det	ecting	target of Min.)	$\geq \Phi$	120상 불투명체 (opaque mater	rials)
소비 전류(Ca	nsump	tion current)	투광기 (trans mitter	r): ≤ 20mAOl하, 수광기(recei	ver): ≤ 20mA0 ōf
제 어 출력(Car	제 어 출력(Control output)		NPN(PNP) Transistor o	pen collector, 부하전류(load	current):≤100mA০[ক}
광 원(Ligh	광 원(Light source)		적외광 LED (infrared LED)	적외광 LED (infrared LED)	적색광 LED(red LED)
응답 시간(Res	응답 시간(Response time)		≤ 1ms0 ō ł		
보호 등급(Pro	tection	n category)	IP 64 (IEC specification)		
단락 보호(Sho	단락 보호(Short circuit protection)			yes	
전원역접속보호 (R	전원역접속보호 (Reverse polarity protection)			yes	
사용주위조도 (Am	bient i	llumination)	태양광 (sunlight): 20,000 lx, 백열등 (incandescent): 3,000lx		
사용주위온도 (Am	bient t	emperature)	동작시(operating): -10°C~55°C, 보존시(storage): -30°C~70°C(단, 결빙, 결로하지 않을것)		
내 전 압(Die	ledric	strength)	1kVAC, 50/60Hz for 1min		
내 진 동(Vib	ration)		1.5mm amplitude at frequency of 10 \sim 55-1z in each of X,Y,Z directions for 2hours		
내 충 격(Sho	내 충 격(Shock resistance)		500% (50G) X, Y, Z direction for 3times		
절연 저항(Insulation resistance)		≥ 20Mp이상 (DC 500V Megger)			
표 시 등(Ind	표 시 등 (Indicator)		투광기 전원표시(적색) Transmitter: Power (red LED)		
			수광갸 동작표시(적색), 안정표시(녹색) Receiver: Operating (red LED), Stability (green LED)		
케 이 블(Cat	ole 2m	i : PVC)	투광기 (trans mitter): Ø4 x 2C x 0.2SQ		
			수공	랑기(receiver): Ø4 x 3C x 0	2SQ

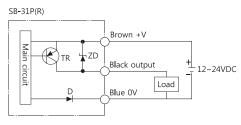
제어출력 회로도 Control output diagram

• NPN



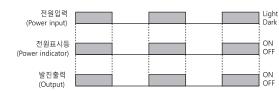




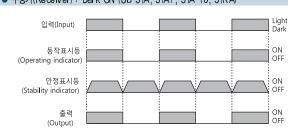


동작차트 Operating chart

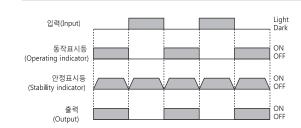
• 투광기(Transmitter)



• 수광기(Receiver): Dark ON (SB-31A, 31AP, 31A-10, 31RA)

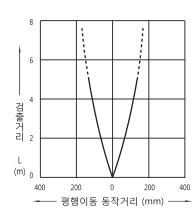


• 수광기(Receiver): Light ON(SB-31B, 31BP, 31B-10, 31RB)

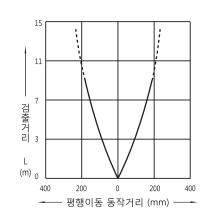


검출영역 특성곡선 Characteristics

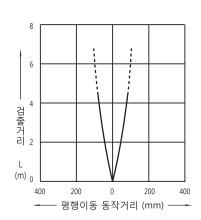
• SB-31, SB-31P



• SB-31-10



• SB-31R

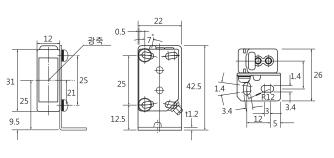


MINI TYPE

투과형 Through Beam



- Mini size
- Surge protection
- Mos Relay output

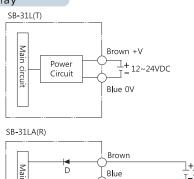


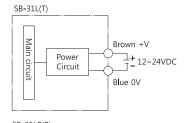


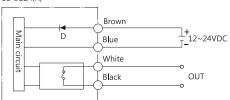
검출거리 (Det	검출거리 (Detecting distance)		5m	
DC 3 wire	Mos	D/O, L/O Adjustable	SB-31LA	
12~24V (Ripple ±10%)	Relay	Dark ON Light ON	SB-31LB	
최소검출물체 (De	tecting	target of Min.)	≥ Ø10 이상 불투명체 (opaque m <i>a</i> terials)	
소 비 전 류 (Co	nsump	tion current)	투광기(trans mitter): ≤ 20mA 이하, 수광기(receiver): ≤ 20mA 이하	
제 어 <i>출</i> 력(Co	ntrol o	utput)	Mos Relay output, 100mA 48V DC, 100mA 220V AC	
광 원(Lig	ht sour	ce)	적외광 LED (infrared LED)	
응답 시간(Re	spons t	time)	≤ 1ms0 ō -	
보호 등급(Pro	보호 등급(Protection category)		IP 64 (IEC specification)	
단락 보호(Sh	단락 보호(Short circuit protection)		yes	
전원역접속보호 (F	전원역접속보호 (Reverse polarity protection)		yes	
사용주위조도 (Am	사용주위조도 (Ambient illumination)		태양광 (sunlight): 10,0001x, 백열등(incandescent): 3,0001x	
사용주위온도 (Am	사용주위온도 (Ambient temperature)		동작시(operating): -20°C~60°C, 보존시(storage): -25°C~70°C(단, 결빙, 결로하지 않을것)	
내 전 압(Die	edric	strength)	1kVAC, 50/60Hz for 1min	
내 진 동(Vik	oration)		1.5mm amplitude at frequency of 10 \sim 55Hz in each of X,Y,Z directions for 2hours	
내 충 격(Sh	내 충 격(Shœk resistanœ)		500 1% (50G) X, Y, Z direction for 3 times	
절 연 저 항(Ins	절연 저항(Insulation resistance)		≥ 20MpOPdf (DC 500V Megger)	
표 시 등(Inc	dicator)		투광가 전원표시(적색) Transmitter Power (red LED)	
			수광갸 동작표시(적색), 인정표시(녹색) Receiver: Operating (red LED), Stability (green LED)	
케 이 블(Ca	ble 2m	: PVC)	투광기 (trans mitter): Ø4 x 2C x 0.2SQ	
			수광기 (receiver): Ф4 x 3C x 0.2SQ	

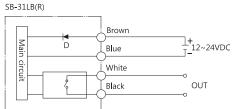
제어출력 회로도 Control output diagram

Mos Relay



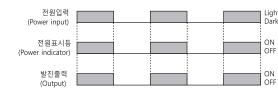




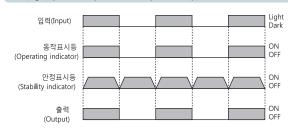


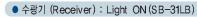
동작차트 Operating chart

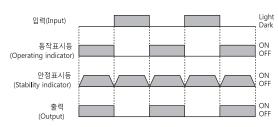
투광기 (Transmitter)



• 수광기 (Receiver): Dark ON (SB-31LA)







검출영역 특성곡선 Characteristics

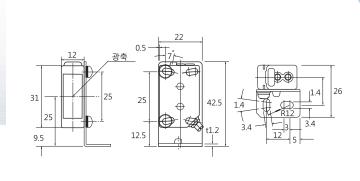
• SB-31L 3 300 200 100 0 100 200 300 → 평행이동 동작거리 (mm) →

MINI TYPE

직접반사형 Reflex



Mini size Surge protection

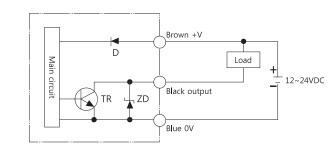


Refley

검출거리 (Detecting distance)	150mm	500mm	700mm	
DC 3 wire 12~24V NPN D/O, L/O Adjustable	SB-32-2	SB-32	SB-32-7L	
(Ripple ±10%) PNP D/O, L/O Adjustable	-	_	_	
표준검출물체 (Standard target)	200mm x 20	00mm 백색무광택자(nan-glassy	white paper)	
최소검출물체 (Detecting target of Min.)	F	령체, 불투명체(trans perant, opa	que)	
소비 전류(Cansumption current)		≤ 35mA0 ā		
제 어 출력(Control output)	NPN(PNP) Transistor o	pen collector, 부하전류(load	current): ≤ 100mA০[ā⊦	
광 원(Light source)		적외광 LED (infrared LED)		
응답 시간(Response time)		≤ 1ms0 ā⊦		
응차 거리(Hysteresis)		≤ 20%(sr)¤[ō]·		
보호 등급(Protection category)	IP 64 (EC specification)			
단락 보호(Short circuit protection)	yes			
전원역접속보호 (Reverse polarity protection)		yes		
사용주위조도 (Ambient illumination)	태양광 (sunlight	태양광 (sunlight): 10,000 lx, 백열등 (incandescent): 3,000 lx		
사용주위온도 (Ambient temperature)	동작시(operating): -10°C~55°C, 보존시(storage): -30°C~70°C(단, 결빙, 결로하지 않을것)			
내 전 압(Dielectric strength)		1kVAC, 50/60Hz for 1min		
내 진 동(Vibration)	1.5mm amplitude at freque	ency of 10~55Hz in each of	X,Y,Z directions for 2hours	
내 충 격(Shock resistance)	500% (50G) X, Y, Z direction for 3times		3times	
절연 저항(Insulation resistance)	≥ 20Mp이상 (DC 500∨ Megger)			
표 시 등 (Indicator)	전원표시(녹색) Power (green LED)			
	동작표시(적색), 안정표/	동작표시(적색), 인정표시(녹색) Operating (red LED), Stability (green LED)		
케 이 블(Cable 2m: PVC)		Φ4 x 3C x 0.2SQ		

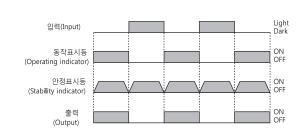
제어출력 회로도 Control output diagram

• NPN

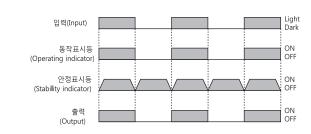


동작차트 Operating chart

Dark ON

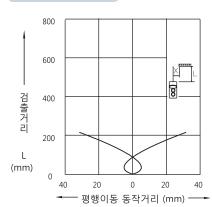


• Light ON

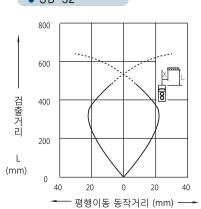


검출영역 특성곡선 Characteristics

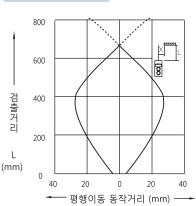
• SB-32-2



• SB-32



• SB-32-7L

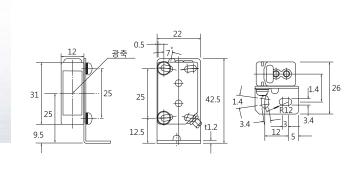


MINI TYPE

한정반사형 limited Reflex



· Mini size Surge protection

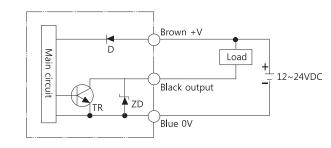


Reflex

검출거리 (Detecting distance)			20mm	30m	50m	
DC 3 wire 12~24V	NPN	D/O, L/O Adjustable	SB-32B	SB-32B-3	SB-32B-5	
(Ripple ±10%)	PNP	D/O, L/O Adjustable	-	-	-	
표준검출물체 (Star	ndard	target)	100mm x 100mm 백색무광택지(non-glossy white paper)			
최소검출물체 (Dete	ecting t	target of Min.)	デ	명체, 불투명체(transparent, op	aque)	
소비 전류(Con	sumpli	on current)		≤ 35mA이하		
제 어 출력(Con	trol out	tput)	NPN Transistor ope	en collector, 부하전류(load c	turrent): ≤ 100mA0þō⊦	
광 원(Ligh	t sourc	e)		적외광 LED (infrared LED)		
응답 시간(Res	ponse	time)		≤ 1ms0 ō├		
응 차 거리(Hys	teres is)	≤ 10%(s r)0[ā-			
보호 등급(Prot	ection	category)	IP 64 (EC specification)			
단락 보호(Sho	rt circu	it protection)		yes		
전원역접속보호 (Re	verse p	oolarity protection)		yes		
사용주위조도 (Aml	oientill	umination)	태양광(sunligh	t): 10,000 lx, 백열등 (incand	escent):3,0001x	
사용주위온도 (Ami	oient te	emperature)	동작시(operating): -10°C~55°C, 보존시(storage): -30°C~70°C(단 결빙, 결로하지 않을것			
내 전 압(Diel	edric s	strength)		1kVAC, 50/60Hz for 1min		
내 진 동(Vib	내 진 동(Vibration)		At frequency of	10~55Hz in each of X,Y,Z o	irections for 2hours	
내 충 격(Sho	내 충 격(Shock resistance)			500% (50G) X, Y, Z direction for 3times		
절 연 저 항(Inst	lation	resistance)	≥ 20McP당 (DC 500V Megger)			
표 시 등(Indi	표 시 등(Indicator)		전원표시(녹색) Power (green LED)			
			동작표시(적색), 안정표	터(녹색) Operating (red LED), Stability (green LED)	
케 이 블(Cab	le 2m	: PVC)		Φ4 x 3C x 0.2SQ		

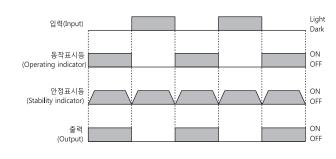
제어출력 회로도 Control output diagram

• NPN

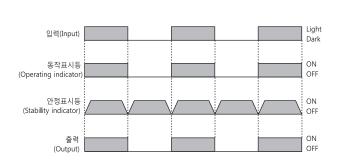


동작차트 Operating chart

Dark ON

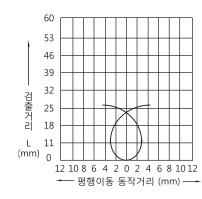


• Light ON

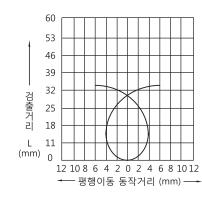


검출영역 특성곡선 Characteristics

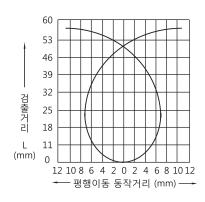
• SB-32B



• SB-32B-3



• SB-32B-5

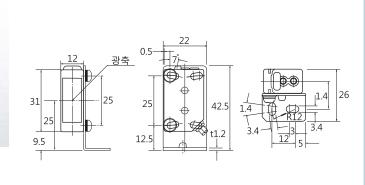


MINI TYPE

확산반사형 Diffuse Reflex



Mini sizeSurge protection

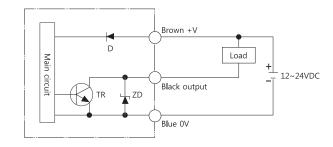


$ \begin{bmatrix} 7 \to \\ R \leftarrow \end{bmatrix} $
Reflex

검출거리 (Detecting distance)			100mm	150 m	300m	
DC 3 wire 12~24V	NPN	D/O, L/O Adjustable	SB-32S	SB-32WS	SB-32W	
(Ripple ±10%)	PNP	D/O, L/O Adjustable	-	-	-	
표준검출물체 (Star	ndard	target)	100mm x 100mm 백색무광틱	坏(non-glossy white paper)	100mm x 100mm	
최소검출물체 (Dete	ecting :	target of Min.)	FP	경체, 불투명체(trans parent, opa	que)	
소비 전류(Con	sumpi	on current)		≤ 35mA 이하		
제 어 출력(Can	trol ou	tput)	NPN Transistor ope	n collector, 부하전류(load cu	rrent): ≤ 100mA이하	
광 원(Ligh	t sourc	e)		적외광 LED (infrared LED)		
응답 시간(Res	ponse	time)	≤ 1ms 0 ন			
응 차 거리(Hys	teres is)	≤ 20%(sr) 0 āŀ			
보호 등급(Prot	보호 등급(Protection category)			IP 64 (EC specification)		
단락 보호(Sho	rt cira	it protection)		yes		
전원역접속보호 (Re	verse p	oolarity protection)		yes		
사용주위조도 (Amb	oientill	umination)	태양광(sunlight): 10,000 lx, 백열등 (incandescent): 3,000 lx			
사용주위온도 (Amb	oient te	emperature)	동작시(operating): -10°C~60°C, 보존시(storage): -20°C~70°C(단, 결빙, 결로하지 않을것			
내 전 압(Diele	edric s	strength)	1kVAC, 50/60Hz for 1min			
내 진 동(Vibr	ation)		1.5mm amplitude at frequency of 10~55-1z in each of X,Y,Z directions for 2hours			
내 충 격(Shock resistance)			500% (50G) X, Y, Z direction for 3times			
절연 저항(Insulation resistance)			≥ 20MoOK (DC 500V Megger)			
표 시 등(Indi	표 시 등 (Indicator)			전원표시(녹색) Power (green LED)		
			동작표시(적색), 인정표시(녹색) Operating (red LED), Stability (green LED)			
케 이 블(Cab	le 2m	: PVC)		Φ4 x 3C x 0.2SQ		

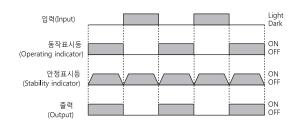
제어출력 회로도 Control output diagram

• NPN

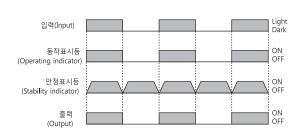


동작차트 Operating chart

Dark ON

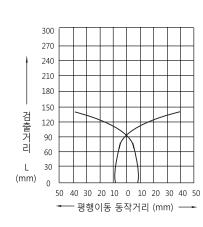


Light ON

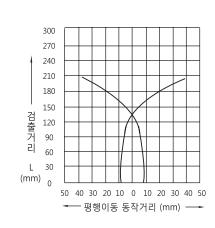


검출영역 특성곡선 Characteristics

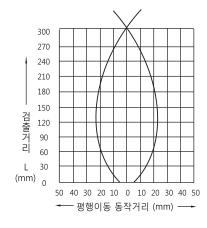
• SB-32S



• SB-32WS



• SB-32W

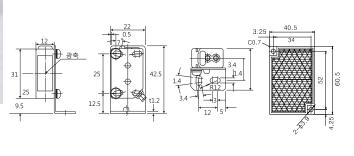


MINI TYPE

밀러반사형 Retro-Reflex



- Mini size
- Surge protection
- Target: SBM-4060
- * SBM-4060: 40mm x 60mm, mirror

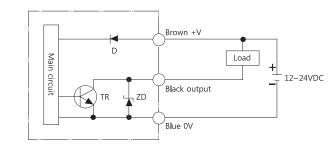


$T \rightarrow R \leftarrow$
Retro-Reflex

검출거리 (Detecting distance)			2m	1m	1m
DC 3 wire		D/O, L/O Adjustable	SB-32M	SB-32MV	SB-32MR
12~24V	NPN	Dark ON	SB-32MA	SB-32MVA	SB-32MRA
(Ripple ±10%)		Light ON	SB-32MB	SB-32MVB	SB-32MRB
최소검출물체 (De	최소검출물체 (Detecting target of Min.)		$\geq \Phi_{s}^{c}$	35 이상 불투명체 (opaque m <i>a</i> te	erials)
소 비 전 류(Co	nsump	tion current)		≥ 35mA 0 ā}	
제 어 출 력(Co	ntrol o	utput)	NPN Transistor ope	en collector, 부하전류(load cur	rent): ≤ 100mA0 ō
광 원(Lig	ht sou	rce)		적외광 LED (infrared LED)	
응 답 시 간(Re	sponse	e time)	≤ 1ms0 ōl		
보 호 등 급(Pro	tection	category)	IP 64 (EC specification)		
단 락 보 호(Sh	단락보호(Short circuit protection)		yes		
전원역접속보호 (F	전원역접속보호 (Reverse polarity protection)			yes	
사용주위조도 (Am	ıbient i	llumination)	태양광 (sunligh	t): 10,000 lx, 백열등 (incande	scent): 3,000 lx
사용주위온도 (Am	ibient t	emperature)	동작시(operating): -10°C~55°C, 보존시(storage): -30°C~70°C(단, 결병, 결로하지 않을것)		
내 전 압(Die	lectric	strength)	1kVAC, 50/60Hz for 1min		
내 진 동(Vil	oration)		1.5mm amplitude at frequency of 10 \sim 55Hz in each of X,Y,Z directions for 2hours		
내 충 격(Sh	내 충 격(Shock resistance)		500% (50G) X, Y, Z direction for 3times		
절 연 저 항(Ins	절 연 저 항(Insulation resistance)		≥ 20Mm201상 (DC 500V Megger)		
표 시 등(Inc	표 시 등(Indicator)		전원표시(녹색) Power (green LED)		
			동작표시(적색), 안정표시(녹색) Operating (red LED), Stability (green LED)		
케 이 블(Ca	ble 2m	: PVC)		Φ4 x 3C x 0.2SQ	

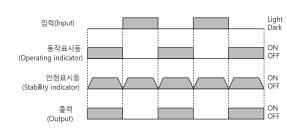
제어출력 회로도 Control output diagram

• NPN

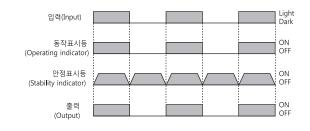


동작차트 Operating chart

• Dark ON (SB-32MA, 32MVA, 32MRA)

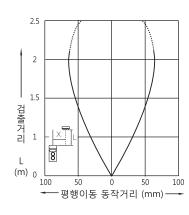


• Light ON (SB-32MB, 32MVB, 32MRB)

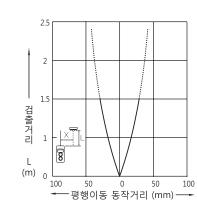


검출영역 특성곡선 Characteristics

• SB-32MA, SB-32MB

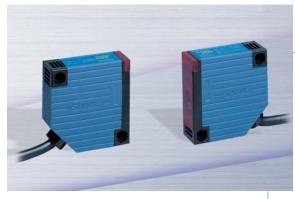


• SB-32MVA, SB-32MVB

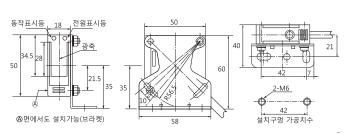


FREE VOLTAGE TYPE

투과형 Through Beam



- Free voltage
- Relay output

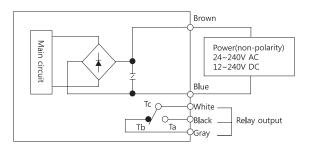


Through bean	1

점출거리 (Detecting distance) AC 24~240V PC 24~240V (Ripple ±10%) Belay (Dight 0N S8-51 S8-51-3 S8-51V S8-51V-3					
DC 24~240V (Ripple ±10%) Pelay (Ripple ±10%) Pelay (Ripple ±10%) A bacade and a control out on the properties of the p	검출거리 (Detecting distance)	10m	25m	10m	25m
Ripple ±10%) Light ON S8-51B - S8-51VB - A A ZH	Daik ON	SB-51	SB-51-3	SB-51V	SB-51V-3
소 비 전 력(Consumption power) Relay output, ≥ DC 5V 10mA 이상, AC 250V 3A(cos Φ=1) 광 원 (Light source) 의 전기 간(Response time) 보호등급(Protection category) 사용주위조도 (Ambient illumination) 사용주위조도 (Ambient temperature) 당장시(operating): -25°C~55°C, 보존시(storage): -25°C~70°C (단, 결빙, 결로하지 않을겠다 전입(Didectric strength) 내 전 압(Didectric strength) 1.5mm amplitude at frequency of 10~55+½ in each of X,Y,Z directions for 2hours 보호 역 저 항(Insulation resistance) 포 시 등(Indicator) 파 이 불(Cable 2m: PVC) 투광기(trans mitter): Φ5.6 x 2C x 0.28Q 수광기(receiver): Ф5.6 x 5C x 0.28Q	I - I - I - I - I - I - I - I -	SB-51B	-	SB-51VB	_
제 어 출 력(Control output) 광 원 (Light source) 장대용 (ED) 왕 원 (Light source) 장대용 (ED) 왕 원 (Light source) 장대용 (ED) 왕 전 시 간(Response time) 보호등급(Protection category) 사용주위조도 (Ambient illumination) 사용주위조도 (Ambient temperature) 사용주위조도 (Ambient temperature) 장작사(operating): -25°℃~55°ℂ, 보존시(storage): -25°℃~70°ℂ (단, 결병, 결로하지 않을것) 내 전 압(Dielectric strength) 내 진 동(Vibration) 1.5mm amplitude at frequency of 10~55-½ in each of X,Y,Z directions for 2hours 내 충 격(Shock resistance) 조건(Supplied (ED) 지하(Insulation resistance) 조건(Supplied (ED) 구광가 전원표시(장색), 동작표시(작색) Transmitter: Power (red LED) 구광가 전원표시(장색), 동작표시(작색) Receiver: Power (yellow LED), Operating (red LED) 무광가(transmitter): 少5.6 x 2C x 0.2SQ 구광가(receiver): 少5.6 x 5C x 0.2SQ	최소검출물체 (Detecting target of Min.)		≥ ∅15 이상 불투명제	ll (opaque materials)	
광 원 (Light source) 응답시간(Response time) 보호등급(Protection category) 사용주위조도 (Ambient illumination) 사용주위조도 (Ambient temperature) 내 전 압(Dielectric strength) 내 전 압(Dielectric strength) 내 전 양(Noration) 1.5mm amplitude at frequency of 10~55½ in each of X,Y,Z directions for 2hours 내 충 격(Shock resistance) 절면저항(Insulation resistance) 표시등(Indicator) 투광가 전원표시(정책) Transmitter: Power (red LED) 수광가 전원표시(정책) Receiver: Power (yellow LED), Operating (red LED) 투광가(receiver): Φ5.6 x 2C x 0.2SQ 수광가(receiver): Ф5.6 x 5C x 0.2SQ	소비 전력(Cansumption power)	투광기	trans mitter)∶≤ 3W0[하, 수광기(receiver): ≤	≤ 3W0[ā}
응답시간(Response time) 보호등급(Protection category) IP 65 (EC specification) 사용주위조도 (Ambient illumination) 타양광 (sunlight): 10,000 lx, 백열등 (incandescent): 3,000 lx 사용주위조도 (Ambient temperature) 동작사(operating): -25℃~55℃, 보존사(storage): -25℃~70℃ (단, 결병, 결료하지 않을겠 내 전 압(Diededric strength) 1.5kVAC, 50/60卍 for 1min 내 진 동(Vibration) 1.5mm amplitude at frequency of 10~55℃ in each of X,Y,Z directions for 2hours 내 충 격(Shock resistance) 500% (50G) X, Y, Z direction for 3 times 절면 저 항(Insulation resistance) 교 시 등 (Indicator) 투광가 전원표시(착색) Trans mitter: Power (red LED) 수광가 전원표시(황색, 동작표시 작색) Receiver: Power (yellow LED), Operating (red LED) 투광가(receiver): Φ56 x 2C x 0.2SQ 수광가(receiver): Ф56 x 5C x 0.2SQ	제 어 출 력(Control output)	Relay	output, ≥ DC 5V 10m	nA 이상, AC 250V 3A(cos <i>Ф</i> =1)
보호등급(Protection category) N용주위조도 (Ambient illumination) 태양광 (sunlight): 10,000 lx, 백열등 (incandescent): 3,000 lx 사용주위조도 (Ambient temperature) 동작사(operating): -25°C~55°C, 보존사(storage): -25°C~70°C (단, 결빙, 결로하지 않을것) 내 전 압(Dietectric strength) 1.5kVAC, 50/60Hz for 1min 내 진 동(Vibration) 1.5mm amplitude at frequency of 10~55Hz in each of X,Y,Z directions for 2hours 내 충 격(Shock resistance) 절 연 저 항(Insulation resistance) 표 시 등(Indicator) 투광가 전원표시(정색) Transmitter: Power (red LED) 수광가 전원표시(황색), 동작표시 장색) Receiver: Power (yellow LED), Operating (red LED) 투광가(transmitter): Φ5.6 x 2C x 0.2SQ 수광가(receiver): Φ5.6 x 5C x 0.2SQ	광 원 (Light source)		적외광 LED	(infrared LED)	
사용주위조도 (Ambient illumination) 타양광 (sunlight): 10,000 lx, 백열등 (incandescent): 3,000 lx 사용주위조도 (Ambient temperature) 동작사(operating): -25°C~55°C, 보존사(storage): -25°C~70°C (단, 결병, 결로하지 않을것) 내 전 압(Dielectric strength) 1.5kVAC, 50,60 lb for 1min 내 진 동(Vibration) 1.5mm amplitude at frequency of 10~55°b in each of X,Y,Z directions for 2hours 내 충 격(Shock resistance) 절 연 저 항(Insulation resistance) 로 시 등 (Indicator) 투광가 전원표시(전책) Transmitter: Power (red LED) 수광가 전원표시(정책) Receiver: Power (yellow LED), Operating (red LED) 무광가(receiver): Ø5.6 x 2C x 0.2SQ 수광가(receiver): Ø5.6 x 5C x 0.2SQ	응 답 시 간(Response time)		≤ 30	ms0lāl	
사용주위온도 (Ambient temperature) 동작사(operating): -25°C~55°C, 보존사(storage): -25°C~70°C (단, 결병, 결료하지 않을겠 내 전 압(Diededric strength) 1.5kVAC, 50/60Hz for 1min 내 진 동(Vibration) 1.5mm amplitude at frequency of 10~55Hz in each of X,Y,Z directions for 2hours 내 충 격(Shock resistance) 500% (50G) X, Y, Z direction for 3times 절 연 저 항(Insulation resistance) ≥ 20Mx20k3 (DC 500V Megger) 표 시 등(Indicator) 투광가 전원표시(전책) Transmitter: Power (red LED) 수광가 전원표시(황색, 동작표시 전책) Receiver: Power (yellow LED), Operating (red LED) 투광기(transmitter): Φ56 x 2C x 0.2SQ 수광기(receiver): Φ56 x 5C x 0.2SQ	보호 등급(Protection category)	IP 65 (EC specification)			
내 전 압(Dielectric strength) 1.5kVAC, 50/60Hz for 1min 1.5kVAC, 50/60Hz for 1min 1.5mm amplitude at frequency of 10~55Hz in each of X,Y,Z directions for 2hours 500% (50G) X, Y, Z direction for 3times 절 연 저 항(Insulation resistance) ENT 전원표시(전책) Transmitter: Power (red LED) 수광가 전원표시(전책) Receiver Power (yellow LED), Operating (red LED) 기 이 불(Cable 2m : PVC) F광가(transmitter): Ø5.6 x 2C x 0.2SQ 수광기(receiver): Ø5.6 x 5C x 0.2SQ	사용주위조도 (Ambient illumination)	태양광(sunlight): 10,000 lx, 백열등(incandescent): 3,000 lx			
내 진 동(Vibration) 1.5mm amplitude at frequency of 10~55-tz in each of X,Y,Z directions for 2hours H 충 격(Shock resistance) 절면 저 항(Insulation resistance) E 시 등(Indicator) F광가 전원표시(전책) Transmitter: Power (red LED) 수광가 전원표시(정책) Receiver: Power (yellow LED), Operating (red LED) 케 이 불(Cable 2m: PVC) F광가(transmitter): Ø5.6 x 2C x 0.2SQ 수광가(receiver): Ø5.6 x 5C x 0.2SQ	사용주위온도 (Ambient temperature)	동작시(operating): -25℃~55°C, 보존시(storage): -25°C~70°C (단, 결빙, 결로하지 않을것)			
내 충 격(Shock resistance) 절 연 저 항(Insulation resistance) 표 시 등(Indicator) 후광가 전원표시(정책) Transmitter: Power (red LED) 수광가 전원표시(황색, 동작표시 정책) Receiver: Power (yellow LED), Operating (red LED) 키 이 불(Cable 2m: PVC) 투광기(receiver): Φ56 x 2C x 0.2SQ 수광기(receiver): Ф56 x 5C x 0.2SQ	내 전 압(Dielectric strength)	1,5kVAC, 50/60Hz for 1min			
절 연 저 항(Insulation resistance) E 시 등 (Indicator) F광가 전원표시(전책) Transmitter: Power (red LED) 수광가 전원표시(황색, 동작표시(전책) Receiver. Power (yellow LED), Operating (red LED) 케 이 블(Cable 2m: PVC) F광가(transmitter): Ø5.6 x 2C x 0.2SQ 수광기(receiver): Ø5.6 x 5C x 0.2SQ	내 진 동(Vibration)	1.5mm amplitude at frequency of 10~55-bz in each of X,Y,Z directions for 2hours			
표 시 등 (Indicator) F광가 전원표시(전책) Transmitter: Power (red LED) 수광가 전원표시(황색, 동작표시 전책 Receiver: Power (yellow LED), Operating (red LED) 케 이 블(Cable 2m: PVC) 투광가(transmitter): Φ 5.6 x 2C x 0.2SQ 수광가(receiver): Φ 5.6 x 5C x 0.2SQ	내 충 격(Shock resistance)	500% (50G) X, Y, Z direction for 3times			
수광가 전원표시(황색), 동작표시(작색) Receiver: Power (yellow LED), Operating (red LED) 케 이 블(Cable 2m: PVC) 투광기(trans mitter): ϕ 5.6 x 2C x 0.2SQ 수광기(receiver): ϕ 5.6 x 5C x 0.2SQ	절 연 저 항(Insulation resistance)	≥ 20MmoVel (DC 500V Megger)			
케 이 블(Cable 2m : PVC) 투랑기(trans mitter) : Φ 5.6 x 2C x 0.2SQ 수광기(receiver) : Φ 5.6 x 5C x 0.2SQ	표 시 등(Indicator)	투광기 전원표시(적색) Transmitter: Power (red LED)			
수광기(receiver): Ø5.6 x 5C x 0.2SQ		수광갸 전원표시(황색),동작표시(정색) Receiver Power (yellow LED), Operating (red LED)			
10 11 11 11 11 11 11	케 이 블(Cable 2m : PVC)	투광기(trans mitter) : Ф5.6 x 2C x 0,2SQ			
감도 조 정 (Adjusting volume)		수광기(receiver): Φ5.6 x 5C x 0.2SQ			
	감도 조정(Adjusting volume)	_	_	단회전볼륨(volume)	단회전볼륨(volume)

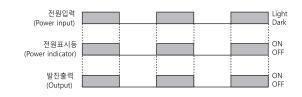
제어출력 회로도 Control output diagram

Relay

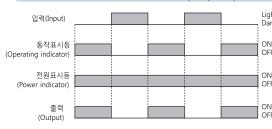


동작차트 Operating chart

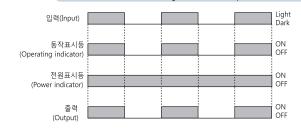
• 투광기(Transmitter)



● 수광가(Receiver): Dark ON (SB-51, 51V, 51-3, 51V-3)

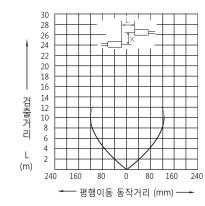


• 수광기(Receiver): Light ON(SB-51B, 51VB)

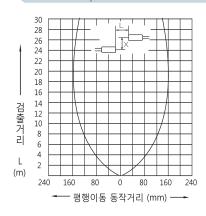


검출영역 특성곡선 Characteristics

• SB-51, SB-51B, SB-51V, SB-51VB



• SB-51-3, SB-51V-3

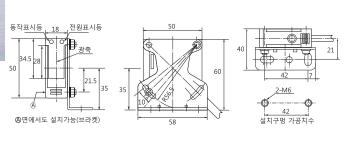


FREE VOLTAGE TYPE

직접반사형 Reflex



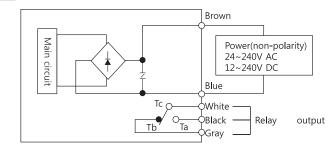
- Free voltage
- Relay output



검출거리 (Det	ecting dist	ance)	700mm		
AC 24~240V		Dark ON	SB -52		
DC 24~240V (Ripple ±10%)	Relay	Light ON	\$B-52B		
표준검출물체 (Sta	ndard targe	et)	200mm x 200mm 백색무광택자(non-glossy white paper)		
검출기능물체 (De	tectable tarq	get)	투명체, 불투명체(transparent, opaque)		
소 비 전 력(Ca	nsumption p	ower)	≤ 2₩0 ō -		
제 어 출 력(Ca	ntrol output)		Relay output, \geq DC 5V 10mA 01&, AC 250V 3A($\cos \varphi$ =1)		
광 원(Lig	ht source)		적외광LED (infrared LED)		
응 답 시 간(Response time)			≤ 30ms 0 lot		
응 차 거 리(Hysteresis)			≤ 20%(sr)0 āŀ		
보호 등급(Protection category)			IP 65 (EC specification)		
사용주위조도 (Am	ibient illumina	ation)	태양괭sunlight): 11,000 lx, 백열등(incandescent): 3,000 lx		
시용주위온도 (Am	ibient tempe	rature)	동작시(operating): -25℃~55℃, 보존시(storage): -25℃~70℃ (단, 결빙, 결로하지 않을것)		
내 전 압(Die	lectric strenç	gth)	1.5kVAC, 50/60Hz for 1min		
내 진 동(Vib	oration)		1.5mm amplitude at frequency of 10 \sim 55-1z in each of X,Y,Z directions for 2hours		
내 충 격(Shock resistance)			500%(50G) X,Y,Z direction for 3times		
절 연 저 항(Ins	ulation resist	ance)	≥ 20Mc이상(DC 500V Megger)		
표 시 등(Ind	icator)		전원표시형색), 동작표시(적색) Power (yellow LED), Operating (red LED)		
케 이 블(Ca	ble 2m : PV0	C)	Φ5.6 x 5C x 0.2SQ		

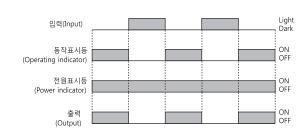
제어출력 회로도 Control output diagram

• Relay

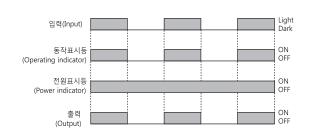


동작차트 Operating chart

• Dark ON (SB-52)

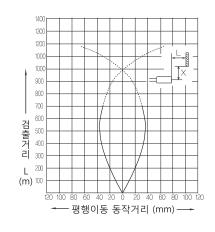


• Light ON (SB-52B)



검출영역 특성곡선 Characteristics

• SB-52, SB-52B



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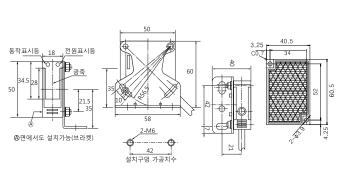
Photoelectric Sensor

FREE VOLTAGE TYPE

밀러반사형 Retro-Reflex



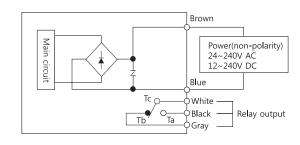
- · Free voltage
- Relay output
- · SB-52MR-8, SB-52MBR-8: 밀레(SBM-4060) 2개를 붙여서 사용하십시오. Use a pair of mirror(SBM-4060)



검출거리 (Detecting distance)			5m	3m	8m
AC 24~240V DC 24~240V	Deller	Dark ON	SB-52M	SB-52MV	SB-52MR-8
(Ripple ±10%)	Relay	Light ON	SB-52MB	SB-52MVB	SB-52MBR-8
최소검출물체(Det	ecting targe	t of Min,)	$\geq \Phi$	50이상 불투명체 (opaque mater	rials)
소 비 전 력(Ca	nsumption p	ower)		≤ 2W0 ≤ 2W0 <u></u> <u></u> = 1	
제 어 출 력(Ca	ntrol output)		Relay output,	≥ DC 5V 10mA 이상, AC 250	V 3A (cos Φ=1)
광 원(Lig	ht source)		적외광 LED (infrared LED)	적외광 LED (infrared LED)	적색광 LED (red LED)
응 답 시 간(Re:	sponse time)		≤ 30ms 0 āŀ		
보호등급(Pro	otection cate	gory)	IP 65 (EC specification)		
사용주위조도 (Am	bient illumina	ation)	태양광(sunlight): 10,000 lx, 백열등 (incandescent): 3,000 lx		
사용주위온도 (Am	bient tempe	rature)	동작시(operating): -10°C~6	0°C, 보존시(storage): -20°C~7	70℃(단 결빙, 결로하지 않을것)
내 전 압(Die	edric strenç	gth)	1.5kVAC, 50/60Hz for 1min		
내 진 동(Vib	oration)		1.5mm amplitude at frequ	ency of 10~55Hz in each of	X,Y,Z directions for 2hours
내 충 격(She	ock resistano	œ)	500%(50G) X,Y,Z direction for 3times		
절 연 저 항(Insulation resistance)			≥ 20Mp이상 (DC 500V Megger)		
표 시 등(Ind	licator)		전원표시(황색), 동작표시(작색) Power (yellow LED), Operating (red LED)		
케 이 블(Ca	ble 2m : PVC	()	Φ5.6 x 5C x 0.2SQ		
감도 조 정(adj	usting volum	e)	-	단회전불륨(volume)	-

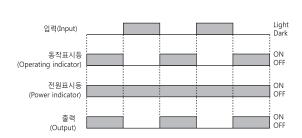
제어출력 회로도 Control output diagram

Relay

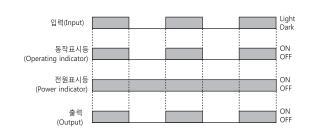


동작차트 Operating chart

• Dark ON (SB-52M, 52MV, 52MR-8)

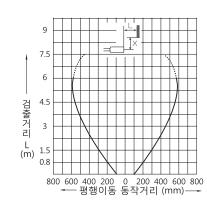


• Light ON (SB-52MB, 52MVB, 52MBR-8)

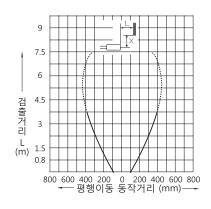


검출영역 특성곡선 Characteristics

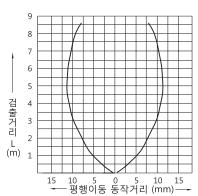
● SB-52M



• SB-52MV



• SB-52MR-8 (SBM-4060 x 2EA)

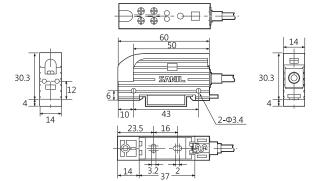


AMPLIFIER SEPARATED TYPE

엠프분리형 Amplifier separated Type



Surge protection Cable 2m

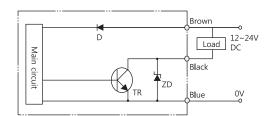


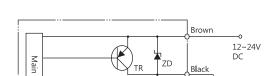


앰프 타입 (Amplifier type)			기본 타입 (Standard)	이주파 타입 (another Frequency)	내노이즈 타입 (Noise resistance)	
DC 3 wire 12~24V	NPN	D/O, L/O Adjustable	SB-99	SB-991	SB-99N	
(Ripple ±10%)	PNP	D/O, L/O Adjustable	SB-99P	-	-	
출 력 (Out	put)		NPN(PNP) Transistor o	pen collector, 부하전류(load c	current)∶≤ 100mA0[ō⊦	
소 비 전 류(Co	nsumpl	tion current)		≤ 35mA0 ā}		
잔 류 전 압(Ca	ntrol ou	utput)	≤ 1,0V이하 : 부하전류(load cur	rent) 100mA일때, <0.4V이하 : 누	부하전류(load current) 16mA일때	
응 답 시 간(Re:	sponse	time)	≤ 0.5ms 0 āŀ	≤ 0.5ms0 ā∤	≤ 3m s0 ō	
출 력 동 작(Ou	tput op	peration)	입광시 ON/차광시 O	N 전환 스위치(Dark ON/Light ON	adjustable switch)	
감도 조정(Ad	usting)	3회전 연극	속 가변 볼륨(adjustable volume o	f 3 turns)	
단락 보호(Sho	rt cira	uit protection)	yes			
전원역접속보호 (Re	전원역접속보호 (Reverse polarity protection)			уes		
타이머기능(Time	타이머기능(Timer)			40ms off delay고정 : 투과형 (40ms off delay fixed : through beam type)		
사용주위조도 (Am	bient ill	umination)	동작시(operating): -10°C~	55℃, 보존시(storage): -20℃~70	℃ (단, 결빙, 결로하지 않을것)	
사용주위온도 (Am	bient te	emperature)		35% ∼ 85% RH		
내 노 이즈 (Nois	se)		전원라인 : 240	Vp(펄스폭 : 0.5 μs), 복사 : 300Vp(펄스폭: 0.5 js)	
			Power line: 240Vp(pulse width: 0.5 µs), Radiation: 300Vp(pulse width: 0.5 µs)			
내 전 압(Diel	edric s	strength)	1k VAC, 50/60Hz for 1min			
내 진 동(Vib	ration)		1.5mm amplitude at frequency of 10~55 Hz in each of X,Y,Z directions for 2hours			
내 충 격(Shœk resistanœ)			100%(10G) X, Y, Z direction for 3times			
절 연 저 항 (Inst	lation	resistance)	≥ 25Mc이상 (DC 500V Megger)			
표 시 등(Indicator)			동작표시(적색) 입광시 점등 Power (red LED)			
			안정표시(녹색) 안정 입광시 점등 Stability (green LED)			
케 이 블(Cab	de 2m	: PVC)		Φ4 x 3C x 0.2 SQ		

제어출력 회로도 Control output diagram

• NPN



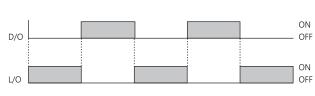


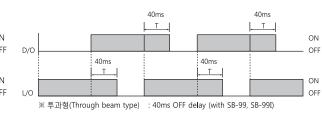
동작모드 Operating mode

• 기본동작 Standard operating

● 타이머동작 Timer operating

• PNP

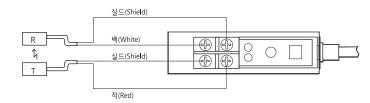




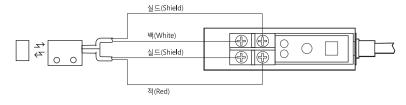
밀러반사형(Retro-Reflex type) : 40ms OFF delay (with SB-99, SB-99I) 반사형(Reflex type) : 40ms ON delay (with SB-99, SB-99I)

센서 헤드와의 접속도 Connection with sensor head

투과형(Through beam)



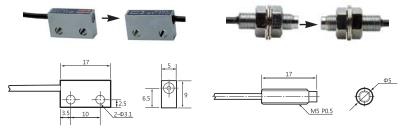
• 반사형(Reflex)



HEAD with SB-99

BT-17, 17-7, 5M, 5M-7

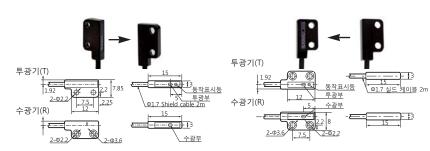
· Cable 2m : Shield, 1C(PVC)



모 델(Model)	BT-17	BT-17-7	BT-5M	BT-5M-7	
검출 거리 (Detecting distance)	100(120)mm	700(800)mm	100(120)mm	700(800)mm	
최소검출물체 (Detecting target of Min,)	Φ 0.3	Φ 0.5	Ø 0.3	Ø 0.5	
광 원 (Light source)		적외 LED (ir	nfrared LED)		
보호 등급(Protection category)		IP66 (IEC s	pedification)		
사용주위온도 (Ambient temperature)	-10°C~55°C (±10%)				
사용주위조도 (Ambient illumination)	태양광(sunlight): 10,000 lx, 백열등 (incandescent): 3,000 lx				
재 질 (Housing material)	황동 (크롬도금) Chromium plated brass				
*검출거리 () 안의 숫자는 SB-99 사용 검출거리 입니다 Detecting distance () is with SB-99	25 20 21 21 21 21 21 21 21 21 21 21 21 21 21	25 15 15 15 20 20 20 20 20 20 20 20 20 20	25 20 15 16 27 27 27 27 27 27 27 27 27 27 27 27 27	25 20 115 21 20 25 5 9 10 10 10 10 10 10 10 10 10 10 10 10 10 10 1	

BT-12, 12G, 12F

초박형(Ultra slim type): 3mm Cable 2m : Shield, 1C(PVC)



모 델(Model)	BT-12	BT-12G	BT-12F	
검출 거리(Detecting distance)	300(360)mm			
최소검출물체 (Detecting target of Min,)		Φ 0.3		
광 원 (Light source)	적외LED(infrared LED)	녹색LED(green LED)	적외LED(infrared LED)	
보호 등급(Protection category)	IP54 (IEC specification)			
사용주위온도 (Ambient temperature)	-10°C~55°C (±10%)			
사용주위조도 (Ambient illumination)	태양광(sunlight): 10,000 lx, 백열등 (incandescent): 3,000 lx			
재 질 (Housing material)		PC		

※검출거리() 안의 숫자는 SB-991 사용 검출거리 입니다 Detecting distance () is with SB-99I

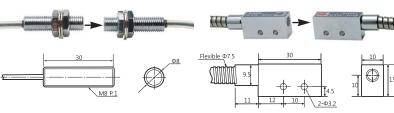




BT-8M, BTH-30

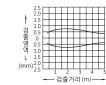
BTH-30: 고온왕(High temperature)

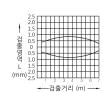
(-10°C~100°C)



Cable 3m : Shield, 1C(PVC)

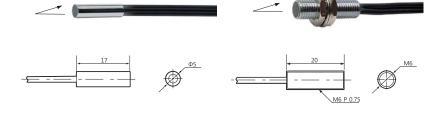
모 델(Model)	BT-8M	BTH-30	
검출 거리(Detecting distance)	5m		
최소검출물체 (Detecting target of Min,)		⊅ 5	
광 원 (Light source)	적외 LED (infrared LED)		
보호 등급 (Protection category)	IP66 (IEC specification)		
사용주위온도 (Ambient temperature)	-10°C~55°C (±10%)	-10°C~100°C (±10%)	
사용주위조도 (Ambient illumination)	태양광(sunlight): 3,000 lx		
재 질 (Housing material)	황동 (크롬도금) Chromium plated brass		





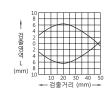
BR-5S, 6M

· Cable 2m : Shield, 2C(PVC)



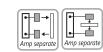
모 델(Model)	BR-5S	BR-6M		
검출 거리(Detecting distance)	30 (40)mm		
표준검출물체(Standard target)	백색무광택지 (non-gross	y white paper): 100x100		
광 원 (Light source)	적외LED (ir	적외LED (infrared LED)		
보호 등급(Protection category)	IP54 (IEC s pecification)			
사용주위온도 (Ambient temperature)	−10°C~5	5°C (±10%)		
사용주위조도 (Ambient illumination)	태양광(sunlight): 11,000 lx, 박	백열등(incandescent) : 3,000 lx		
재 질 (Housing material)	STS (stainless steel)	황동(크롬도금) Chromium plated brass		

※검출거리() 안의 숫자는 SB-991 사용 검출거리 입니다 Detecting distance() is with SB-991

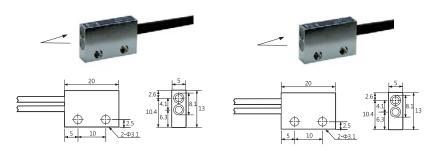




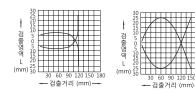
HEAD with SB-99

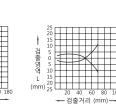


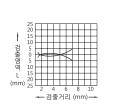
BR-20RN, 20RW, 20RH, 20RS



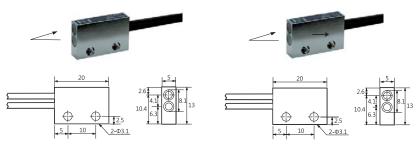
모 델(Model)	BR-20RN	BR-20RW	BR-20RH	BR-20RS	
검출 거리(Detecting distance)	100(120)mm	100(120)mm	40(50)m m	4(5)mm	
최소검출물체 (Detecting target of Min,)	백색무광택지 (non-grossy white paper): 100x100				
광 원 (Light source)		적외 LED (infrared LED)			
보호 등급(Protection category) IP 66 (EC			specification)		
사용주위온도 (Ambient temperature) -10°℃55°C (±10%)					
사용주위조도 (Ambient illumination) 태양광(sunlight): 10,000 lx, 백열등(incandescent): 3,000 lx				00 lx	
재 질 (Housing material)	황동(크롬도금) Chromium plated brass				





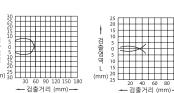


BR-20GN, 20GH, 20N



모 델(Model)	BR-20GN	BR-20GH	BR-20N
검 출 거리(Detecting distance)	50(60)mm	30(40)m m	80(100)mm
표준검출물체(Standard target)	백색무광택자	(non-grossy white pape	er):100x100
광 원 (Light source)	녹색LED(green LED)	녹색LED(green LED)	적외LED(infrared LED
보호 등급(Protection category)		IP 66	
사용주위온도 (Ambient temperature)		-10°C~55°C (±10%)	
사용주위조도 (Ambient illumination)	태양광 (sunlight): 10,000 lx, 백열등 (incandescent): 3,000 lx		
재 질 (Housing material)	황동 (크롬도금) Chromium plated brass		

※검출거리)인의 숫자는 SB-991 사용 검출거리 입니다 Detecting distance() is with SB-991



30 25 20 20 20 20 20 20 20 20 20 20 20 20 20		
(mm) 30		150 180
	← 건축거리 (m	ım)—

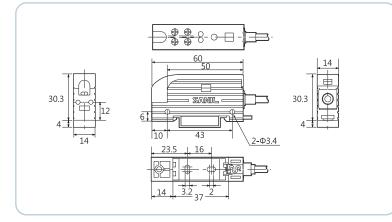
MEMO	

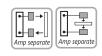
AMPLIFIER SEPARATED TYPE

앰프분리형 Amplifier separated Type



Surge protectionCable 2m

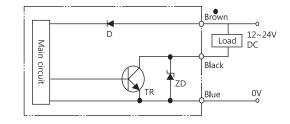




앰프타입 (Amp type)			통과센서용 (Ring type)	분리형 근접센서용 (Inductive Proximity switch)	
DC 3 wire 12~24V (Ripple ±10%)		D/O, L/O Adjustable	SP-01	SP-02	
출 력 (Output)			NPN Transistor open collector, 부	하전류 (load current): ≤ 100mA이하	
소 비 전 류(Car		tion current)	≤ 20mA0lāŀ		
잔 류 전 압(Car	ntrol ou	utput)	≤ 1.0V이하 : 부하전류 (load current) 100mA일때	l, <0.4V 이하 : 부하전류 (load current) 16mA일때	
응 답 시 간(Res	sponse	time)	≤ 1ms0[ō]		
출 력 동 작 (Out	tput of	peration)	N.O/ N.C 동작변환 스위	। श्री (adjustable switch)	
감도 조정(Adjusting)			3회전 연속 가변 볼륨 (adjustable volume of 3 turns)		
단락 보호(Short circuit protection)		uit protection)	yes		
전원역접속보호 (Reverse polarity protection)		oolarity protection)	yes		
사용주위온도 (Amb	oient te	emperature)	동작시 (operating) : ┥0℃~55℃, 보존시 (storæge) : −20℃~70℃ (단, 결빙, 결로하지 않을것)		
사용주위습도 (Amb	ient hu	umi dity)	35% ∼ 85% RH		
내 노 이즈 (Nois	se)		전원라인 : 240Vp(펄스폭 : 0.5㎞	s), 복사 : 300Vp(펄스폭 : 0.5µs)	
내 전 압(Diele	edric:	strength)	Power line: 240 Vp (pulse width: 0.5 µs)	, Radiation: 300Vp (pulse width: 0.5µs)	
			1k VAC, 50/6	OHz for 1min	
내 진 동(Vibr	ation)		1.5mm amplitude at frequency of 10 \sim 55	Hz in each of X,Y,Z directions for 2hours	
내 충 격(Sho	ck res	istanœ)	100% (10G) X, Y, Z	direction for 3times	
절연 저항(Inst	lation	resistance)	≥ 20Mp이상 (DC	500V Megger)	
표 시 등 (Indicator)			동작표시 (적색) 입광시 점등 Power (red LED)		
			안정표시 (녹색) St	ebility (green LED)	
케 이 블(Cab	le 2m	: PVC)	Φ4 × 3C	x 0.2 SQ	

제어출력 회로도 Control output diagram

• NPN

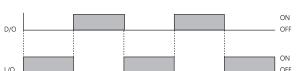


동작모드 Operating mode

• SP-01

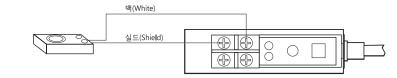




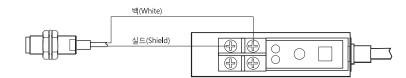


센서 헤드와의 접속도 Connection with sensor head

• SP-01(Ring sensor)



• SP-02(In duct ive)



Ring Type

RING TYPE

SP-10H



모 델(Model)	SP-10H
통과 범위(Detecting hole)	Φ 10m m
최소검출물체 (Detecting target of Min,)	Φ 0.3강선(wire), Φ 2강구(ball)
절연 저항(Insulation resistance)	≥ 20Mc이상 (DC 500∨ Megger)
보호 등급(Protection category)	IP66 (IEC s pecification)
사용주위온도 (Ambient temperature)	-10°C∿55°C(±10%)
사용주위습도 (Ambient humidity)	35% ~85% RH
내 전 압(Dielectric strength)	1kVAC, 50/60Hz for 1min
외 형 도(Dimension)	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$

SP-15H, SP-20H,

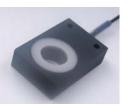




모 델(Model)	SP-15H SP-20H		
통과 범위(Detecting hole)	Φ 15mm	Φ 20mm	
최소검출물체 (Detecting target of Min,)	Ф 0.5강선(wire), Ф 3강구(ball)	Φ 1강선(wire), Φ 4강구(ball)	
절연 저항(Insulation resistance)	≥ 20Mc이상 (DC	500V Megger)	
보호 등급(Protection category)	IP66 (IEC s	pedification)	
사용주위온도 (Ambient temperature)	-10℃~5	5℃±10%)	
사용주위습도 (Ambient humidity)	35% ~85% RH		
내 전 압(Dielectric strength)	1kVA C, 50/6	60Hz for 1min	
외 형 도(Dimension)	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	20 20 20 020 020 04.5 04.5	

SP-30H, SP-50H





모 델(Model)	SP-30H	SP-50H	
통과 범위(Detecting hole)	Φ 30mm	Φ 50mm	
최소검출물체 (Detecting target of Min,)	Φ 1강선(wire), Φ 5강구(ball)	Φ 3강선(wire), Φ 10강구(ball)	
절 연 저 항 (Insulation resistance)	≥ 20Mc이상 (DC	C 500 V Megger)	
보호 등급(Protection category)	IP66 (IEC s	pecification)	
시용주위온도 (Ambient temperature)	-10℃~5	5°C(±10%)	
사용주위습도 (Ambient humidity)	35% ~	85% RH	
내 전 압(Dielectric strength)	1kVAC, 50/60Hz for 1min		
외 형 도 (Dimension)	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	90 50 50 50 50 0 0 0 0 0 0 0 0 0 0 0 0 0	

HIGH TEMPERATURE

SP - 12MS, 18MS, 30MS







모 델 (Model)	SP-12MS	SP-18MS	SP-30MS
검출 거리(Detecting distance)	4mm	8mm	12mm
설정거리(Setting distance)	2.8mm	5.6mm	8.4mm
표준검출물체 (Standard target)	12mm x 12mm x 1t	25mm x 25mm x 1t	30mm x 30mm x 1t
응 차 (Hysteresis)		≤ 15%(sr)0 āf	
보호 등급(Protection category)		IP68 (IEC specification)	
사용주위온도 (Ambient temperature)		0°C~80°C	
사용주위습도 (Ambient humidity)		90% RH	
내 전 압(Dielectric strength)		1kVA C, for 1min.	
절 연 저 항(Insulation resistance)		≥ 20Mc이상(DC 500V Megger)	
재 질 (Housing material)		황동:크롬도금(chrome plated brass)	
검출면 재질 (Active face material)	테프론(tellon)		
케 이 블(Cable 2m : Teflon)	Φ23 x 2C x 0.08SQ		
외 형 도(Dimension)	M12x1 44 42 60 Ф4 Ф2.3	49 47 70 47 47 47 49 44 49 42.3	м30x1.5 49 47 70 Ф4 Ф2.3

SPH - 18MS, 30MS





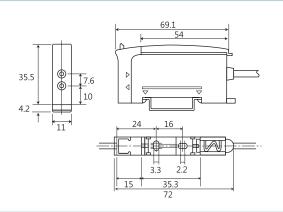
모 델(Model)	SPH-18MS	SPH-30MS	
검출 거리(Detecting distance)	8mm	12mm	
설정 거리(Setting distance)	5.6mm	8.4mm	
표준검출물체 (Standard target)	25mm x 25mm x 1t	30mm x 30mm x 1t	
응 차 (Hysteresis)	≤ 159	%(sr)0 	
보호 등급(Protection category)	IP68 (IEC s	specification)	
사용주위온도 (Ambient temperature)	0°C	~200°C	
사용주위습도 (Ambient humidity)	90'	% RH	
내 전 압(Dielectric strength)	1kVA C,	for 1min.	
절 연 저항(Insulation resistance)	≥ 20Mc이상(D	C 500V Megger)	
재 질 (Housing material)	황동:크롬도금(chrome plated brass)		
검출면 재질 (Active face material)	티프뢴(téilon)		
케 이 블(Cable 3.5m : Teflon)	ФО.25 х 1P Shield х Prote	ction Tube 3m x 실드선 3.5m	
외 형 도 (Dimension)	49 47 70 07.4	49 47 70 47 70	

FIBER AMP

화이바 앰프 Fiber Amp



Light ON/Dark ON selection (white cable)

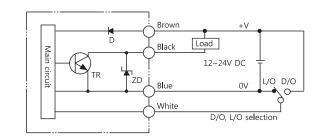




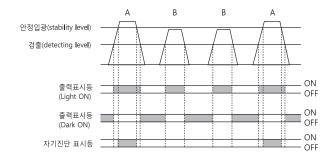
앰프 타입 일 반 형 근거리 미세조정형			
(Amplifier type) (Standard type) (Short distance minuteness	type)		
DC 3 wire 12~24V NPN D'0, L'0 Adjustable SBF-1 SBF-2			
(Ripple ±10%) PNP D'O, L'O Adjustable – –			
검출 거리 (Detecting distance) 200mm(with FT4M) 60mm(with FR6M1)			
소비 전류 (Consumption current) ≤ 40mA 이하			
출 력 (Output) NPN open collector, 부하전류(load current): ≤ 100mA 이하			
광 원 (Light source) 적색광 LED(red LED)			
응답시간(Response time) ≤ 0.5ms이하			
출력 동작 (Output operation) 입망시 ON/차망시ON 케이블 전환방색Dark ON/Light ON selection, white cab	le)		
감도 조정 (Adjusting) 3회전 연속 7변 볼륨(adjustable volume of 3tums)	3회전 연속 기변 볼륨(adjustable volume of 3turns)		
과 전류 보호 (Surge protection) no			
전원역접속보호 (Reverse polarity protection) yes			
보호 등급(Protection category) IP 50 (IEC specification)			
사용주위조도 (Ambient illumination) 태양광sunlight): 10,000 lx, 백열등(incandescent): 3,000 lx			
사용주위온도 (Ambient temperature) -25°C~55°C			
사용주위습도 (Ambient humidity) 45% ~ 85% RH			
내 노이즈 (Noise) 전원라인: 240Vp(펄스폭: 0.5µs) Power line: 240Vp(pulse width: 0.5µs)			
내 전 압 (Dielectric strength) 1kVAC, 50/60Hz for 1min			
내 진 동 (Vibration) 1.5mm amplitude at frequency of 10~55-1z in each of X,Y,Z directions for 2h	ours		
내 충 격 (Shock resistance) 100뗏10G) X, Y, Z direction for 3times			
절 연 저 항 (Insulation resistance) ≥ 25Mx이상 (DC 500V Megger)			
표 시 등 (Indicator) 동작표시(전책) 입망시 점등 Operation (red LED)			
인정표시(녹색) 인정 입광시 점등 Stability (green LED)			
케 이 블 (Cable 2m : PVC)			

제어출력회로도 Control output diagram

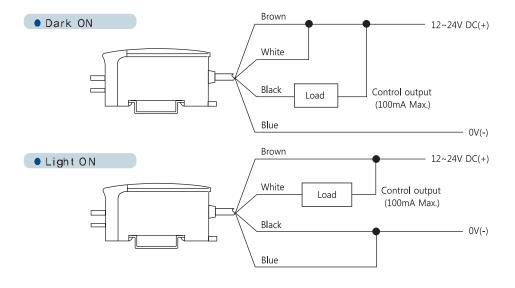
• NPN



동작차트 Operating chart



접속도 Connection



Fiber Cable

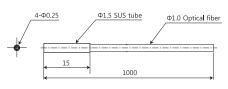
FIBER CABLE

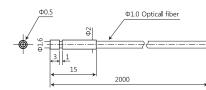
FT1.5S, FT2S





모 델(Model)	FT1,5S	FT2S
타 입(Type)	투과형(thra	ugh beam)
크 기 (Collar bushing size)	Φ 1.5	Φ2
곡률 반경(Bending radius)	25n	nm
케 이 블(Cable)	Φ1,0 Opt	ical fiber
코 어(Core)	4- <i>0</i> 0.25	Φ0.5
코 어 재질(Core material)	Plas	stic
사용주위온도 (Ambient temperature)	-40°C∕	~80°C





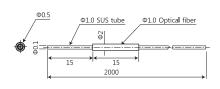
FT2S-S15, FT3S

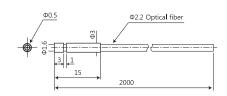






모 델(Model)	FT2S-S15	FT3S
타 입(Type)	투과형 (thra	ugh beam)
크 기 (Collar bushing size)	Φ2	Ф 3
곡률 반경(Bending radius)	25n	nm
케 이 블(Cable)	arPhi1.0 Optical fiber	Φ 22 Optical fiber
코 어 (Core)	4- <i>0</i> 0,25	Φ0.5
코어 재질(Core material)	Plas	stic
사용주위온도 (Ambient temperature)	-40°C′	~80°C





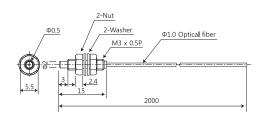
FT3M, FT3M-S35

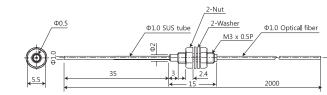






모 델(Model)	FT3M	FT3M-\$35
타 입(Type)	투과형 (thr	ough beam)
크 기 (Collar bushing size)	N	13
곡률 반경(Bending radius)	25mm	
케 이 블(Cable)	Φ1.0 Optical fiber	
코 어 (Core)	Φ0.5	
코 어 재질(Core material)	Plastic	
사용주위온도 (Ambient temperature)	-40°C~80°C	





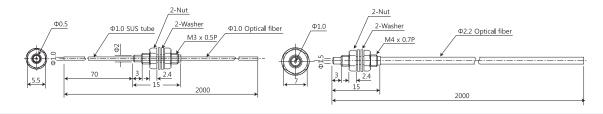
FT3S-S70, FT4M







모 델(Model)	FT3S-S70	FT4M
타 입(Type)	투과형 (through	beam)
크 기 (Collar bushing size)	M3	M4
곡률 반경(Bending radius)	25mm	
케 이 블(Cable)	arPhi1.0 Optical fiber	Φ 22 Optical fiber
코 어(Core)	4-00.25	Φ0.5
코 어 재질(Core material)	Plastic	
사용주위온도 (Ambient temperature)	-40°C~80	°C



FIBER CABLE

FIBER CABLE

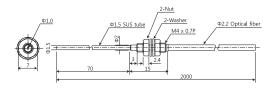
FT4M-S70, FT4M-T

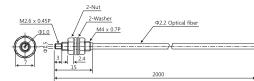
Fiber optic





모 델(Model)	FT4M-S70	FT4M-T
타 입(Type)	투과형 (thr	ough beam)
크 기(Collar bushing size)		4M
곡률 반경(Bending radius)	25mm	
케 이 블(Cable)	Φ2.2 Optical fiber	
코 어(Core)	Φ1.0	
코어 재질(Core material)	Plastic	
사용주위온도 (Ambient temperature)	−40°C~80°C	



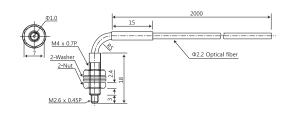


FT4M-TR





모 델(Model)	FT4M-TR
타 입(Type)	투과형 (through beam)
크 기 (Collar bushing size)	4M
곡률 반경(Bending radius)	25mm
케 이 블(Cable)	Φ22 Optical fiber
코 어(Core)	Φ1. 0
코어 재질(Core material)	Plastic
사용주위온도 (Ambient temperature)	-40°C~80°C



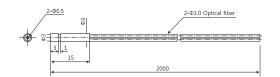
FR3S, FR3S-S15

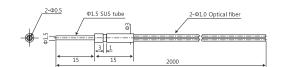






모 델(Model)	FR3S	FR3S-S15
타 입(Type)	반사형(reflex)	
크 기 (Collar bushing size)	Φ3	
곡률 반경(Bending radius)	25mm	
케 이 블(Cable)	2-Ø1.0 Optical fiber	
코 어(Core)	2-\$\phi 0.5	
코어 재질(Core material)	Plastic	
사용주위온도 (Ambient temperature)	-40°C~80°C	





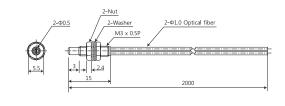
FR3M, FR3M-C

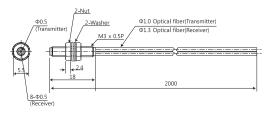






모 델(Model)	FR3M	FR3M-C
타 입(Type)	반사형	(reflex)
크 기 (Collar bushing size)	A	13
곡률 반경(Bending radius)	25	mm
케 이 블(Cable)	$2-\Phi$ 1.0 Optical fiber	arPhi1.0 Optical fiber(fransmitter), $arPhi$ 1.3 Optical fiber(receiver)
코 어(Core)	2-00.5	Φ 0.5(transmitter), 8- Φ 0.5(receiver)
코어 재질(Core material)	Pla	astic
사용주위온도 (Ambient temperature)	-40°C	:~80°C
		* 동축케이블(co-axial)





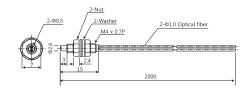
FIBER CABLE

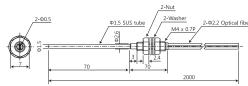
FR4M, FR4M-S70





모 델(Model)	FR4M	FR4M-S70
타 입(Type)	반사형	(reflex)
크 기 (Collar bushing size)	M4	
곡률 반경(Bending radius)	25mm	
케 이 블(Cable)	2-Φ1.0 Optical fiber	
코 어 (Core)	2-40.5	
코어 재질(Core material)	Plastic	
사용주위온도 (Ambient temperature)	−40°℃~80°C	



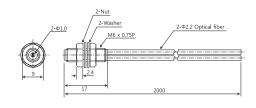


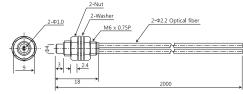
FR6M, FR6M-S





모 델(Model)	FR6M	FR6M-S
타 입(Type)	반사형	(reflex)
크 기 (Collar bushing size)	М6	
곡률 반경(Bending radius)	25mm	
케 이 블(Cable)	2-Φ2.2 Optical fiber	
코 어(Core)	2-Φ1.0	
코어 재질(Core material)	Plastic	
사용주위온도 (Ambient temperature)	-40°℃~80°C	



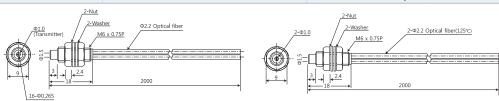


FR6M-C, FR6M-HA





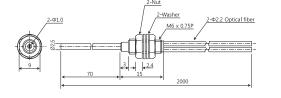
모 델(Model)	FR6M-C	FR6M-HA
타 입(Type)	반사형	(reflex)
크 기 (Collar bushing size)	Λ	16
곡률 반경(Bending radius)	25	mm
케 이 블(Cable)	2- <i>Φ</i> 1,0 O	ptical fiber
코 어(Core)	Φ1.0, Φ16-0.265	2-Ø1.0
코 어 재 질 (Core material)	Pla	stic
사용주위온도 (Ambient temperature)	-40°C~80°C	−40°C~125°C
	* 동축케이블(∞-Axial)	* 고온용(High temperature)



FR6M-S70



모 델(Model)	FR6M-S70
타 입(Type)	반사형(reflex)
크 기 (Collar bushing size)	M6
곡률 반경(Bending radius)	25mm
케 이 블(Cable)	2-Φ22 Optical fiber
코 어(Core)	2- Φ1.0
코어 재질(Core material)	Plastic
사용주위온도 (Ambient temperature)	−40°℃80°C



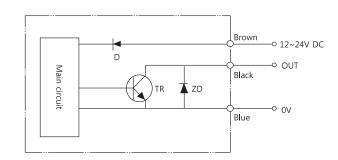
말굽형 U Type



검출거리(Detecting distance)	30mm	
DC 3 wire 12~24V NPN Dark ON	SB-73A	
(Ripple ±10%) Light ON	SB-73B	
최소검출물체 (Detecting target of Min,)	$\geq \varphi$ 5m m 이상 불투명체 (opaque)	
검출 방식(Detecting type)	광전식(photoelectric)	
소비 전류(Consumption current)	≤ 30mAO[ōt	
제 어 출력 (Control output)	NPN Transistor open collector, 부하전류(load current): ≤ 100mA이하	
광 원(Light source)	적외광 LED(infrared LED)	
응답 시간(Response time)	≤ 1ms0 ō}	
보호 등급(Protection category)	IP 65 (EC specification)	
서지 보호(Surge protection)	yes	
전원역접속보호 (Reverse polarity protection)	yes	
사용주위조도 (Ambient illumination)	태양광(sunlight): 10,000kx 백열딍(incandescent): 3,000kx	
사용주위온도 (Ambient temperature)	동작사(operating): -10°C~60°C, 보존사(storage): -20°C~70°C (단, 결빙, 결로하지 않을것)	
내 전 압(Dielectric strength)	1kVAC, 50/60Hz for 1min	
내 진 동(Vibration)	1.5mm amplitude at frequency of 10~55Hz in each of X,Y,Z directions for 2hours	
내 충 격(Shock resistance)	500%(50G) X,Y,Z direction for 3times	
절연 저항(Insulation resistance)	≥ 20McO[상(DC 500V Megger)	
표 시 등 (Indicator)	동작표시(적색) Operating (red LED)	
케 이 블(Cable 2m : PVC)	Φ56 x 3C x 0.29Q	

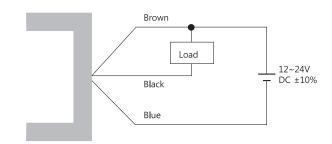
제어출력 회로도 Control output diagram

• NPN



접속도 Connection

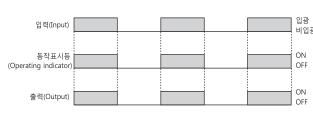
• SB-73



동작차트 Operating chart

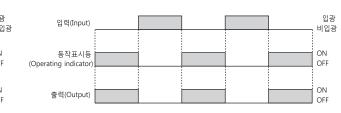
• DARK ON

- SB-73A



• LIGHT ON

- SB-73B

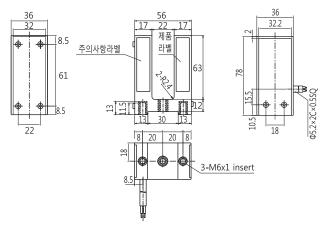


U TYPE

말굽형 U Type



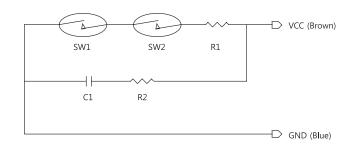
Magnetic



검출거리(Detecting distance)	30mm	
DC 3 wire 12~24V	SL-73A(1a contact)	
(Ripple ±10%) Magnetic contact	SL-73B(1b contad)	
최소검출물체 (Detecting target of Min,)	60 × 100 × 1t 철판(sted)	
최대접점허용 (Max, switching power)	50W(resistive load)	
최대개폐전압 (Max, switching voltage)	AC 150V, DC 200V	
최대개폐전류 (Max, switching current)	AC 0.7A, DC 1A	
응답 시간(Response time)	≤ 3m s이하, 동작시간(operating time : ≤ 4m s이하, 복귀시간(release time) : ≤ 2m s이하	
보호 등급(Protection category)	IP 67 (IEC specification)	
서지 보호(Surge protection)	yes	
전원역접속보호 (Reverse polarity protection)	yes	
수 명 (Life cycle)	기계적수명(mechanica) : 1억회(M.n. 100million), 전기적수명(electrical) : 15백만회(M.n. 15million(at 30V, 20mA)	
사용주위온도 (Ambient temperature)	동작시(operating): -10°C~60°C, 보존시(storage): -25°C~70°C(단, 결빙, 결로하지 않을것)	
내 전 압(Didectric strength)	접점간(contact/contact) : 500VAC for 1min, 단자와케이스(terminal/case) : 1500VAC for 1min	
내 진 동(Vibration)	1.5mm amplitude at frequency of 30Hz in each of XY,Z directions for 2hours	
내 충 격(Shock resistance)	100%(10G) X,Y,Z direction for 3times	
절연 저항(Insulation resistance)	≥ 100㎞이상(DC 500V Megger)	
표 시 등 (Indicator)	동작표시(적색) Operating (red LED)	
케 이 블(Cable 2m: PVC)	Φ5.0 x 2C x 0.5SQ	

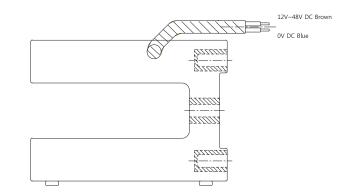
제어출력 회로도 Control output diagram

● 자석식(Magnetic)



접속도 Connection

• SL-73

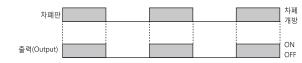


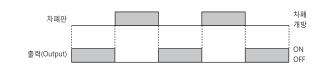
동작차트 Operating chart

● 자석식(Magnetic)

- SL-73A

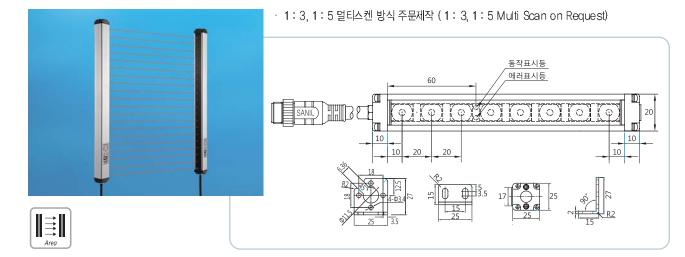
- SL-73B





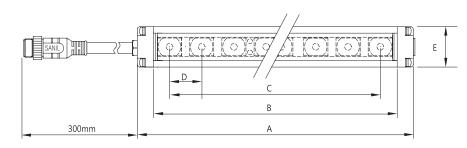
AREA

투과형 Through Beam



검출거리 (Detecting distance)		istance)	0~7000mm		
	NICAL	Dark ON	SMB-0002A	SMB-□□04A	
DC 3 wire 12~24V	NPN	Light ON	SMB-0002B	SMB-□□04B	
(Ripple ±10%)	CVIC	Dark ON	SMB-0002AP	SMB-004AP	
	PNP	Light ON	SMB-0002BP	SMB-004BP	
광 축 간 격 (Resolu	tion)		20mm pitch	40mm pitch	
최소 검출물체 (Detecti	ing tar	get of Min,)	≥ Ø30 0 l& Opaque	≥ Ø50이상 Opaque	
제 어 출 력 (Contro	II outp	ut)	NPN(PNP):	Max, 200mA	
이상검지출력 (Error o	utput)		NPN(PNP) Transis	storopen collector	
			1 광축이상 60초 이상 차광시 고장검지 출력 ON	(one or more beam interrupted for 60sec)	
보호 기능(Protect	functi	on)	직사광 및 불량광축 무시기능(ignore th	ne direct rays and error beam-axis)	
소 비 전 류(Consur	mption	current)	투광기(trans mitter) : ≤ 100 mA 이	하, 수광기(receiver): ≤ 50mA이하	
응답 시간(Response time)		ne)	≤ 10ms0lōł		
투광부 광원 (Light source: transmitter)		transmitter)	적외광 LED(infrared LED)		
보호 등급(Protection category)		tegory)	IP 65 (IEC s	spedification)	
단 락 보호(Short o	circuit	protection)	у	res	
전원역접속보호 (Revers	se pola	rity protection)	У	res	
주위 조도(Ambier	nt illum	ination)	태양광(sunlight) : ≤ 100,000 Ix이하		
주위 온도(Ambier	nt temp	erature)	동작시(operating): -10°C~55°C, 보존시(storage): -30°C~70°C (단 결빙, 결로하지 않을것)		
내 전 압(Dielect	ric str	ength)	1kVAC, 50/60Hz for 1min		
내 진 동(Vibratio	on)		1.5mm amplitude at frequency of 10~55Hz in each of X,Y,Z directions for 2hours		
내 충 격(Shock	resista	ance)	100%(10G) X,Y,Z direction for 3times		
절 연 저항(Insulat	ion res	sistance)	≥ 20Mk이상(DC 500∨ Megger)		
표 시 등(Indicat	or)		투광기 전원표시(적색), 이상표시(황색) Tr	anmitter: Power (red LED), Error(황쎅	
			수광기 동작표시(적책), 안정이상표시(황색) Receiver: Operating (red LED), Stability/Error (yellow LED)		
재 질 (Materia	ıl)		케이스(ase): 일미늄(alluminum anodized),렌즈(lens): PMMA 커버(cover): 이크릴:arylic)		
커 넥 터(M12, 300mm	conne	ctor : PVC)	투광기(transmitter): 45.6 x 4C x 0.2SQ x 4pin		
			수광기(receiver): #5.6 x 4C x 0.2\$Q x 4pin		

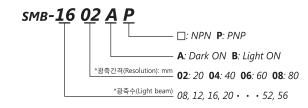
외형치수도 Dimension



- · 검출거리: 7m 기준 장거리검출 타입(10m, 15m, 20m) 주문 생산기능 Standard detecting distance : 7m (Long distance type(10m, 15m, 20m) on request · 케이블 타입 주문생산 가능 Cable type on request · 커넥터 타입 기본형 Connector type on standard (연장 커넥터 별매)

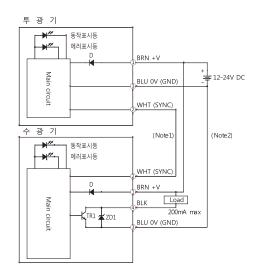
모 델(Model)	А	В	С	D	Е
SMB-0802 (0404)	180	160	140 (120)	20 (40)	25
SMB-1202 (0604)	260	240	220 (200)	20 (40)	25
SMB-1602 (0804)	340	320	300 (280)	20 (40)	25
SMB-2002 (1004)	420	400	380 (360)	20 (40)	25
SMB-2402 (1204)	500	480	460 (440)	20 (40)	25
SMB-2802 (1404)	580	560	540 (520)	20 (40)	25
SMB-3202 (1604)	660	640	620 (600)	20 (40)	25
SMB-3602 (1804)	740	720	700 (680)	20 (40)	25
SMB-4002 (2004)	820	800	780 (760)	20 (40)	25
SMB-4402 (2204)	900	880	860 (840)	20 (40)	25
SMB-4802 (2404)	980	960	940 (920)	20 (40)	25
SMB-5202 (2604)	1060	1040	1020 (1000)	20 (40)	25
SMB-5602 (2804)	1140	1120	1100 (1080)	20 (40)	25
SMB-0306	180	160	120	60	25
SMB-1408	1140	1120	1040	80	25

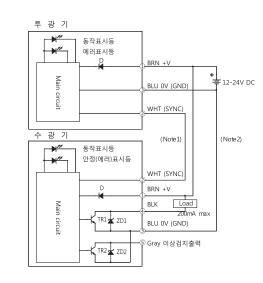
모델구성표 Order guide



AREA

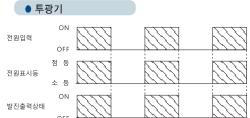
제어출력 회로도 Control output diagram

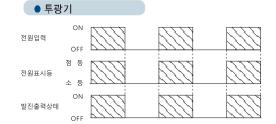


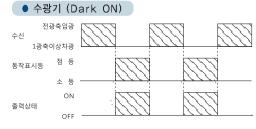


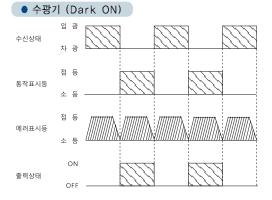
· Note 1) 동기 신호선의 연결이 +전원이나 GND에 연결되지 않도록 하십시오. 2) 공급 전원의 GND와 발광측, 수광측의 GND를 공통으로 연결하여 사용하십시오.

동작차트 Operating chart

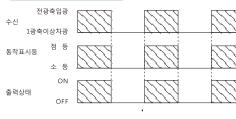








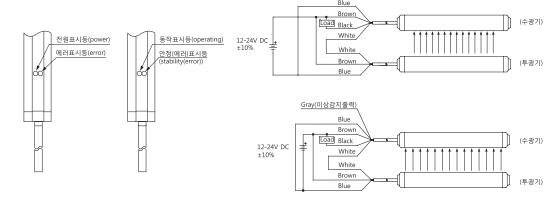
• 수광기 (Light ON)



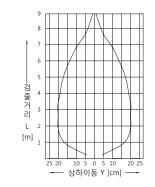
동작차트 Operating chart

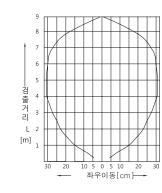
● 투광기

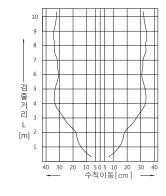
● 수광기

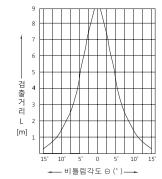


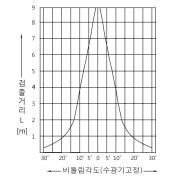
검출영역 특성곡선 Characteristics

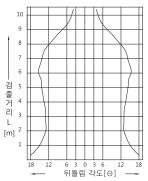






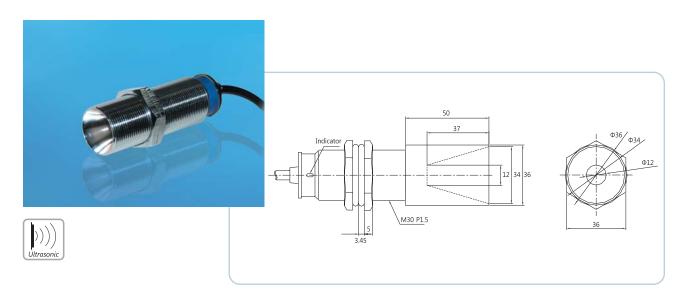






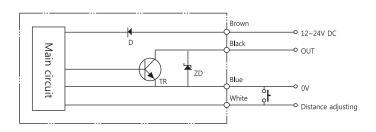
ULTRASONIC

초음파 센서 Ultrasonic



검출거리 (Detecting distance) (백색선 GND 연결시)			200 ~3000mm 200 ~2000mm 200 ~4500mm 200 ~3000mm		
DC 3 wire 12~24V	NIDAI	Normal open	SUD-30M5	SUD-30M3	
(Ripple ±10%)	NPN	Light close	-	-	
표준검출물체 (Stan	dard t	target)	300mm x 300m	m 평판(flat board)	
초음파발진주파수())	rasonic	oscillation frequency)	40	kHz	
소 비 전 류(Cor	sumpt	ion current)	≤ 30	mA Olōł	
제어 출력(Control output)		tput)	NPN Transistor open collector, 두	하전류(load current): ≤ 100mA이하	
응답 시간(Res	응답 시간(Response time)		동작시(operating) ≤ 300ms이하, 복귀시(return) ≤ 200ms이하		
응차 거리(Hysteresis))	≤ 20%(sr)0[ōł		
보호 등급(Protection category)		category)	IP 65 (EC specification)		
전원역접속보호 (Reverse polarity protection)		olarity protection)	yes		
사용주위온도 (Amb	ient ter	mperature)	동작시(operating): -10°℃~55°C, 보존시(storage): -30°℃~70°C (단, 결빙, 결로하지 않을겠		
내 전 압(Diele	ectric s	strength)	1kVAC, 50/60Hz for 1min		
내 진 동(Vibr	ation)		1.5mm amplitude at frequency of 10~55-bz in each of X,Y,Z directions for 2hours		
내 충 격(Sho	ck res	istance)	500%(50G) X,Y,Z direction for 3times		
절 연 저항(Insu	lation	resistance)	≥ 20 Mc이상(DC 500V Megger)		
표 시 등(India	ator)		동작표시(전색 Operating (red LED)		
케 이 블(Cabl	e 2m	: PVC)	φ5.6 X 4C X 0.2SQ		

제어출력 회로도 Control output diagram



SUD-30M3 : 백색선 GND 연결시 3m, 개방시 2m

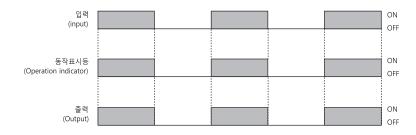
: white cable link up with blue cable(0V): 3m, open: 2m

SUD-30M5:백색선 GND 연결시 4.5m, 개방시 3m

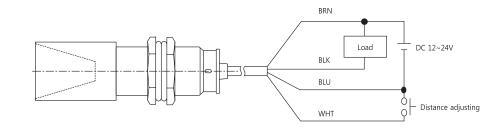
: white cable link up with blue cable(0V): 4.5m, open: 3m

동작차트 Operating chart

• 입음시 ON(Normal OPEN)

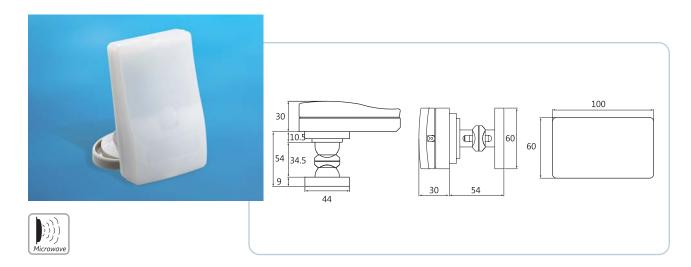


접속도 Connection



MICROWAVE

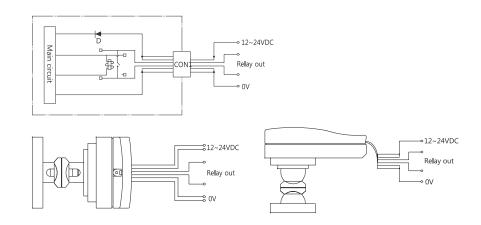
마이크로웨이브 Microwave motion



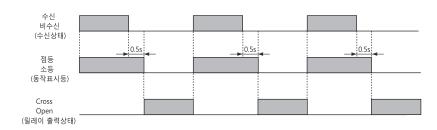
검출거리 (Detecting distance) 센서전면 통로에서 인체 움직임기준		ance)	0~15m (VR Min.) 0~35m (VR Max.)	
DC 3 wire 12~24V	D-1	ON	SM-100	
(Ripple ±10%)	Relay	OFF	SM-100B	
검출 거리(Detec	cting rar	nge)	감도 최소시(VR Min.)0~15m, 감도 최대시(VR Max.)0~35m	
검출 물체 (Detec	ting tar	get)	Ф10mm×300mm 센서로부터 500mm지점 움직임 감지 (500mm motion sensing from sensor)	
출력 저항(Outp	ut resist	ance)	접점양단 간 저항 \leq 1 $\mathcal Q$ 이하 (contact both ends \leq 1 $\mathcal Q$)	
소 비 전 류(Con	sumption	n current)	≤ 60mA 0 ō	
제 어 출력(Conti	rol outp	ut)	DC 0~100V 200mA, 2VA / OFF Delay 0.5sec R⊞D Relay outout	
감도 조정(Adju	stable v	olume)	단 회전볼륨 270° (adjusting volume 270°)	
응답 시간(Resp	oonse tii	me)	≤ 1ms0 o l	
동작 형태 (Operation form)		m)	Relay ON : 움직임 감지(mation detect), Relay OFF : 움직임 미감지(mation non-detecting)	
보호 등급(Prote	ection a	ategory)	IP 50 (IEC specification)	
재 질 (mate	erial)		케이스 고정 브라켓(case, bracket) : ABS	
주위 습도(Ambi	ent hum	nidity)	동작사(operating): 45~85%RH, 보존사(storage): 35~95%RH(단 결빙, 결로하지 않을것)	
주위 온도(Ambi	ent tem	perature)	동작시(operating): -10°C~50°C, 보존시(storage): -20°C~70°C (단, 결빙, 결로하지 않을것)	
내 전 압(Diele	ctric str	ength)	1.5 kV AC, 50/60 Hz for 1 min	
내 진 동(Vibra	내 진 동(Vibration)		1.5mm amplitude at frequency of 10~55-1z in each of X,Y,Z directions for 2hours	
내 충 격(Shoo	내 충 격(Shock resistance)		2m 자유닉하 3회 (2m free-fall 3 times)	
절 연 저항(Insul	ation re	sistance)	≥ 20Mp이상(DC 500V Megger)	
표 시 등(India	ator)		동작표시등(적색) Operating LED(red LED)	
커 넥 터 (MIC Connector : ABS)		tor : ABS)	케넥터 접속방식 (MIC connector)	

제어출력 회로도 Control output diagram

Relay

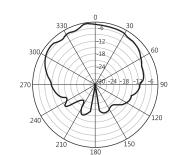


동작차트 Operating chart

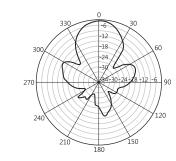


검출영역 특성곡선 Characteristics

• 수평방향 감지범위 (Azimuth)



• 수직방향 감지범위 (Elevation)



Sensor

CONVERTER







모 델(Model)	NP3	PN3	
출력변환 (Converting output)	NPN → PNP	PNP → NPN	
출력전류 (Output current)	DC 35V, 200mA	DC 35V, 200mA	
보호등급 (Protection category)	IP66 (IEC specification)	IP66 (IEC specification)	
외형도 (Dimension)	- 14 18	- 14 + 5 18	
접 속도 (Connection)	Converter (NP3)	Converter	







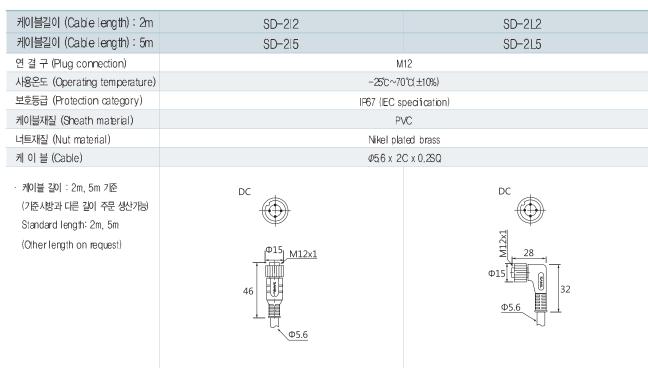
모 델(Model)	NC4	PC4	
출력변환 (Converting output)	NPN N,O \rightarrow NPN N,C	PNP NO - PNP NC	
출력전류 (Output current)	DC 35V, 200mA	DC 35V, 200mA	
보호등급 (Protection category)	IP66 (IEC specification)	IP66 (IEC specification)	
외형도 (Dimension)	14 5 18 18	- 14 5 18 18	
접 속도 (Connection)	Converter (NC4)	Converter (PC4)	

IVILIVIO

Connector cable

CONNECTOR CABLE





케이블길이 (Cable length): 2m	SD-312	SD-3L2	SD-3121	SD-3L2I
케이블길이 (Cable length): 5m	SD-315	SD-3L5	SD-3151	SD-3L5I
연 결 구 (Plug connection)		М	12	
사용은도 (Operating temperature)		-25°C~7()°C(±10%)	
보호등급 (Protection category)		IP67 (IEC s	pedification)	
케이블재질 (Sheath material)		P\	√C	
너트재질 (Nut material)		Nikel pla	ted brass	
케 이 블 (Cable)		Φ5.6 x 3	C x 0.28Q	
· 케이블 길이 : 2m, 5m 기준 (기준시방과다른 길이 주문 생산기능) Standard length: 2m, 5m (Other length on request)	Φ15 46 Φ5.6	DC 28 015 32 05.6	Φ15 46 48 48 Φ15	DC 28 46 46 48 48 48 48



케이블길이 (Cable length): 2m	SD-4I2	SD-4L2	SD-4I 2I	SD-4L2I
케이블길이 (Cable length): 5m	SD-4I5	SD-4L5	-	_
연결구 (Plug connection)		M	12	
사용은도 (Operating temperature)		-25°C~70)°C(±10%)	
보호등급 (Protection category)		IP67 (IEC s	pedification)	
케이블재질 (Sheath material)		P'	VC .	
너트재질 (Nut material)		Nikel pla	ted brass	
케 이 블 (Cable)	Φ5.6 x 4C x 0.2SQ			
· 케이블 길이 : 2m, 5m 기준 (기준시방과 다른 길이 주문 생산기능) Standard length: 2m, 5m (Other length on request)	DC \$\frac{\phi 15}{46} \text{M12x1} \$\frac{\phi 5.6}{45.6}\$	DC 28 015 32 05.6	DC	DC 28 46 46 47 48 48 48

케이블길이 (Cable length): 2m	SA-212	SA-2L2	SA-4 2	SA-4L2
케이블길이 (Cable length): 5m	SA-215	SA-2L5	SA-415	SA-4L5
연결구 (Plug connection)		M	12	
사용온도 (Operating temperature)		-25°C~70)°C(±10%)	
보호등급 (Protection category)		IP67 (IEC s	pedification)	
케이블재질 (Sheath material)		P	VC	
너트재질 (Nut material)		Nikel pla	ted brass	
케 이 블 (Cable)	Φ5.6 x 2C x 0.2SQ		Φ5.6 x 4C x 0.2SQ	
· 케이블 길이 : 2m, 5m 기준 (기준시방과 다른 길이 주문 생산기능) Standard length: 2m, 5m (Other length on request)	AC Φ15 M12x1 46 Φ5.6	AC 28 015 28 05.6 32	AC Φ5.6	AC 28 45.6 32

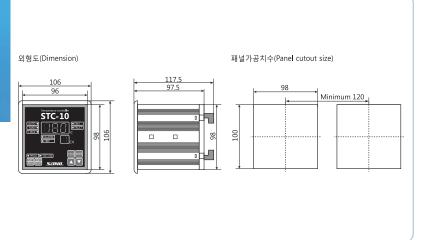
Temperature Controller

CONTROLLER

온도콘트롤러 Temperature controller



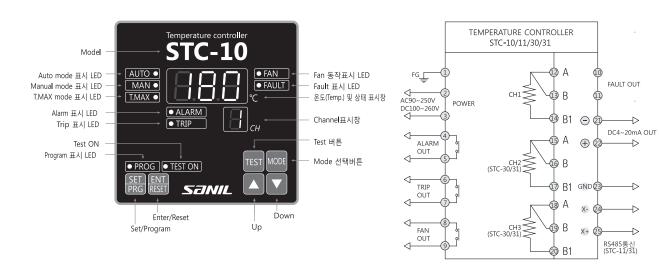




STC series

구 분		단상용(Single phase)	3상용 (3 phase)		
	NO	STC-10	STC-30		
통신기능 (Telecomunication)	YES	STC-11	STC-31		
전 원 (Power)		단생single phase)	35~250V, 50/60Hz		
사용온도(Operating tempe	rature)	0~6	D C		
적 용 센서 (Sensor)		PT100Ω, 3	선식(3wire)		
측 정 범위 (Measuring range	<u>e</u>)	0~2	0~200°C		
정 밀 도(Precision)		±0.5%			
온도표시 (Temperature dis	play)	1°C			
제 어 출력 (Controll output)		AC 250V, 10A(저항부하: resistive load))			
DC전류출력 (DC current outp	ut)	4~ 20mA			
통신기능 (Telecomunication	n)	RS-485 (2400bps, 9600bps) - STC-11, STC-31			
소 비 전력 (Consumption cur	rent)	Max. 8W			
내 전 압(Dielectric strengt	h)	25kV/1min. (전원단자와케이스간: b	25kV/1min. (전원단자와케이스간: between Power terminal to Case)		
절 연 저항 (Insulation resista	nce)	1000Mp, (50	1000Mo, (500V Megger)		
최고온도저장기간(Highst tempera	ature memory)	10년(10 years)			
무 게 (Weight)		38	38 0g		

각부명칭 및 기능 Functions / 외부결선도 Connections



동작항목 표시창 mode display

동작항목 (operating item)	온도표시창 (temp. window)	고장상태표시 (error disp l ay)	온도표시창 (temp. window)	프로그램모드 (program mode
Srart mode	FFF RDY	Over Temperature	OTF	Fan ON
Relay Test mode	TST	Sensor Short	FCC	FAN OFF
Program mode	PRG PRG	Sensor Open	FOC	Alarm temp.
Fan Relay	FAN	Connection Error	-10	Trip temp.
Fault Relay	FLT			Cycle time of fa
Alarm Relay	ALR			Number of mea
Trip Relay	TRP			Telecomunication

DC ULTRAMINI, CYLINDRIC

DC STANDARD, CYLINDRIC





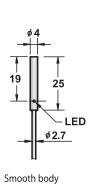


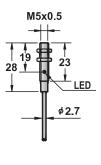
High switching frequency
Davorca palarity protection

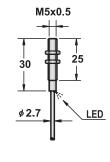
· Ultra mini size

		Reverse	polarity	protection
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크 기 (Diameter) 검출거리 (Switching distance)		Φ4	M5	M5			
		0.8mm	0.8mm	0.8mm			
실드/비실드(Shielde	. / 비실드 (Shielded/non-Shielded)		Shielded	Shielded	Shielded		
DC 3 wire 10~30V	NPN	N,O	SD-4RS	SD-5MS	SD-5MSZ		
(Ripple ±10%)	IVMV	N,C	SD-4RSB	SD-5MSB	SD-5MSZB		
	PNP	N,O	SD-4RSP	SD-5MSP	SD-5MSZP		
	FINE	N,C	SD-4RSBP	SD-5MSBP	SD-5MSZBP		
DC 2 wire 10~60V	N.	Ο.	-	-	_		
(Ripple ±10%)	N.	.C	-	-	_		
응답주파수 (Switching	g frequ	iency)		2KHz			
소비전류 (Consumption	on cur	rent)		<10mA			
부하전류 (Max, Load	currer	nt)	200mA				
잔류전압 (Voltage dr	op)		<1.5V				
응차거리 (Hysteresis)	ı		(15%(sr)				
반복정밀도 (Repeat a	ccurac	cy)	(1.0%(sr)				
사용은도 (Operating temperature)		rature)	-25°C~70°C(±10%)				
단락보호회로 (Short-ci	rcuit pr	otection)	Υœ				
보호등급 (Protection category)		ry)	IP67				
재 질(Housing ma	aterial)		Stainless steel				
검출면 재질 (Material active face)		POM					
동작표시등 (Indicator)		LED					
케이블 (Cable)			Φ27 x 3C x 0.15SQ				
외형도 (Dimension)							
			ø 4	M5x0,5	M5x0.5		
			- - - 				
			19	19 # 1	T 1		











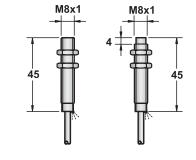


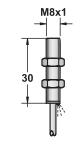


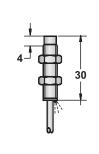
High switching trequency
Reverse polarity protection

Inductive

크 기 (Diameter)			M8				
검출거리 (Switching distance)		1.5mm	2mm	1.5mm	2mm		
실드 / 비실드 (Shielded/non-Shielded)		Shielded	non-Shielded	Shielded	non-Shielded		
DC3 wire 10~30V N	NPN	N,O	SD-8MS-L45	SD-8M-L45	SD-8MS	SD-8M	
(Ripple ±10%)	14114	N,C	SD-8MSB-L45	SD-8MB-L45	SD-8MSB	SD-8MB	
	PNP	N,O	SD-8MSP-L45	SD-8MP-L45	SD-8MSP	SD-8MP	
	1141	N,C	SD-8MSBP-L45	SD-8MBP-L45	SD-8MSBP	SD-8MBP	
DC2 wire 10~60V	N.	.0	-	-	-	-	
(Ripple ±10%)	N.	C	-	-	-	-	
응답주피수 (Switching	g frequ	ency)	2KHz				
소비전류 (Consumptio	on curi	rent)	〈 10m A				
부하전류 (Max, Load	currer	nt)	200mA				
잔류전압 (Voltage dro	op)		〈 1.5V				
응차거리 (Hysteresis)	l		〈 15% (s r)				
반복정밀도 (Repeat a	ccurac	;y)	(10% (sr)				
사용온도 (Operating t	tem per	ature)	-25°C~70°C (±10%)				
딘락보호회 로(Short-ci	rcuit pro	otection)	Yes				
보호등급 (Protection category)		IP 67					
재 질 (Housing material)		Stainless steel					
검출면 재질 (Material active face)		POM					
동작표시등 (Indicator))		LED				
케 이 블 (Cable)				Φ2.7 x 30	C x 0.15SQ		
외형도(Dimension)	ı						









High switching frequency

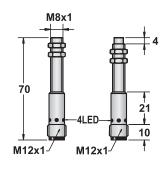
Reverse polarity protection

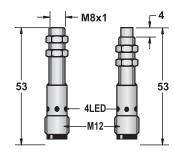






크 기 (Diameter) 검출거리 (Switching distance)		M8					
		1.5mm	2mm	1.5mm	2mm		
실드 / 비실드 (Shielde	실드/비실드 (Shielded/non-Shielded)		Shielded	non-Shielded	Shielded	non-Shielded	
DC 3 wire 10~30V (Ripple ±10%)	NPN	N,O	SC-8MS	SC-8M	SC-8MS-LS	SC-8M-LS	
	INFIN	N,C	SC-8MSB	SC-8MB	SC-8MSB-LS	SC-8MB-LS	
	PNP	N,O	SC-8MSP	SC-8MP	SC-8MSP-LS	SC-8MP-LS	
	LINE	N,C	SC-8MSBP	SC-8MBP	SC-8MSBP-LS	SC-8MBP-LS	
DC 2 wire 10~60V	Ν	Ο.	SC-8MSK	SC-8MK	-	-	
(Ripple ±10%)	N	.C	SC-8MSKB	SC-8MKB	-	-	
응답주피수 (Switching	g frequ	iency)		24	Hz		
소비전류 (Consumpti	on cur	rent)	<10m A				
부하전류 (Max, Load	currer	nt)	200mA				
잔류전압 (Voltage dr	op)		⟨1.5V				
응차게 (Hysteresis))		⟨15%(sr)				
반복정밀도 (Repeat a	ccurac	cy)	<1.0%(sr)				
사용온도 (Operating	tempei	rature)	-25°C~70°C(±10%)				
단락보호회로 (Short-ci	rcuit pr	otection)	Yes				
보호등급 (Protection	catego	ry)	IP67				
재 질(Housing m	aterial)	l	Stainless steel or Nickel plated brass				
검출면 재질 (Material	active	face)	РОМ				
동작표시등 (Indicator)		LED				
케이블 (Cable)					-		
외형도 (Dimension)							
			MQv1				





[※] See the technical information at page 114, for the specipications of DC 2 wire type DC 2 선식 시방은 기술자료 114페이지 참조



· High switching frequency

Long distance type

Reverse polarity protection

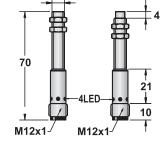






크 기 (Diameter)			M8				
검출거리 (Switching distance)		2mm	4mm	2mm	4mm		
실드 / 비실드 (Shielde	d/non-S	Shielded)	Shielded	non-Shielded	Shielded	non-Shielded	
DC3 wire 10~30V NP		N,O	SD-8MS-02L45	SD-8M-04L45	SC-8MS-02	SC-8M-04	
(Ripple ±10%)	IVMV	N,C	SD-8MSB-02L45	SD-8MB-04L45	SC-8MSB-02	SC-8MB-04	
(Ripple ±10%)	PNP	N,O	SD-8MSP-02L45	SD-8MP-04L45	SC-8MSP-02	SC-8MP-04	
	MVP	N,C	SD-8MSBP-02L45	SD-8MBP-04L45	SC-8MSBP-02	SC-8MBP-04	
DC2 wire 10~60V	N.	0	-	-	-	-	
(Ripple ±10%)	N.	С	-	_	-	-	
응답주파수 (Switching	g frequ	ency)	2KHz	1KHz	2KHz	1KHz	
소비전류 (Consumpti	on curi	rent)		< 10	0mA		
부하전류 (Max, Load	currer	it)		200	0mA		
잔류전압 (Voltage dr	ор)		< 1.5∨				
응차거리 (Hysteresis))		< 15% (sr)				
반복정밀도 (Repeat a	ccurac	y)	< 1.0% (sr)				
사용온도 (Operating	tem per	ature)	-25°C~70°C (±10%)				
단락보호회로 (Short-ci	rcuit pro	otection)	Yes				
보호등급 (Protection	catego	ry)		IP	67		
재 질 (Housing m	aterial)		Stainles	ss steel	Stainless steel or	Nickel plated brass	
검출면 재질 (Material	active	face)	POM				
동작표시등 (Indicator)		LED				
케 이 블 (Cable)			Φ3 x 3C x 0,15SQ -			_	
외형도 (Dimension))		M8x1	M8x1 4 45	<u>, , , , , , , , , , , , , , , , , , , </u>	21 21 10	







High switching frequency

Reverse polarity protection







크 기 (Diameter)			М	12				
검출거리 (Switching distance)		2mm	2mm 4mm 2mm					
	실드 / 비실드 (Shielded/non-Shielded)		Shielded non-Shielded		Shielded	non-Shielded		
	DC 3 wire 10~30V		N.O	SD-12MS	SD-12M	SD-12MS-LS	SD-12M-LS	
	(Ripple ±10%)	NPN	N,C	SD-12MSB	SD-12MB	SD-12MSB-LS	SD-12MB-LS	
		PNP	N,O	SD-12MSP	SD-12MP	SD-12MSP-LS	SD-12MP-LS	
		HNP	N,C	SD-12MSBP	SD-12MBP	SD-12MSBP-LS	SD-12MBP-LS	
	DC 2 wire 10~60V	N	Ο.	SD-12MSK	SD-12MK	SD-12MSK-LS	SD-12MK-LS	
	(Ripple ±10%)	N	.C	SD-12MSKB	SD-12MKB	SD-12MSKB-LS	SD-12MKB-LS	
	응답주피수 (Switching	g frequ	iency)	2KHz	1KHz	2KHz	1KHz	
	소비전류 (Consumption	on cur	rent)		< 10	Om A		
	부하전류 (Max, Load	currer	nt)		200	OmA		
	잔류전압 (Voltage dr	ор)		⟨1.5∨				
	응차거리 (Hysteresis))		<15%(sr)				
	반복정밀도 (Repeat a	ccura	cy)	(1,0%(sr)				
	사용온도 (Operating	tempe	rature)	−25°C~70°C(±10%)				
	단락보호회로 (Short-ci	rcuit pr	otection)	Yes				
	보호등급 (Protection	catego	ry)	IP67				
	재 질(Housing ma	aterial)		Stainless steel or Nickel plated bræss				
	검출면 재질 (Material	active	face)	POM / PBT				
	동작표시등 (Indicator))		LED				
	케이블 (Cable)			Φ40 x 3C x 0.15SQ				
	외형도 (Dimension)							
				50 M	8 50	30	W12x1 8	





High switching frequency

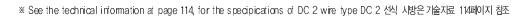
Reverse polarity protection







크 기(Dian	meter)			M	12		
검출거리 (Switching	distar	nce)	2mm	4mm	2mm	4mm	
실드 / 비실드 (Shielded	d/non-S	Shielded)	Shielded	non-Shielded	Shielded	non-Shielded	
DC3 wire 10~30V	NPN	N,O	SC-12MS	SC-12M	SC-12MS-LS	SC-12M-LS	
(Ripple ±10%)	IVMV	N.C	SC-12MSB	SC-12MB	SC-12MSB-LS	SC-12MB-LS	
	PNP	N,O	SC-12MSP	SC-12MP	SC-12MSP-LS	SC-12MP-LS	
	HVP	N,C	SC-12MSBP	SC-12MBP	SC-12MSBP-LS	SC-12MBP-LS	
DC 2 wire 10~60V	N.	0	SC-12MSK	SC-12MK	SC-12MSK-LS	SC-12MK-LS	
(Ripple ±10%)	N.	С	SC-12MSKB	SC-12MKB	SC-12MSKB-LS	SC-12MKB-LS	
응답주피수 (Switching	frequ	ency)	2KHz	1KHz	2KHz	1KHz	
소비전류 (Consumptio	on curi	rent)		(10	Om A		
부하전류 (Max, Load	currer	nt)		200	Om A		
잔류전압(Voltage dro	p)		〈 1.5V				
응차거리 (Hysteresis)			(15% (sr)				
반복정밀도 (Repeat ad	ccurac	y)	(1.0% (s r)				
사용온도 (Operating t	emper	ature)	-25°C~70°C (±10%)				
단락보호회로 (Short-cir	cuit pro	otection)	Yes				
보호등급 (Protection d	catego	ry)	IP 67				
재 질 (Housing ma	aterial)		Stainless steel or Nickel plated brass				
검출면 재질 (Material	active	face)	POM/PBT				
동작표시등 (Indicator))		LED				
케 이 블 (Cable)			-				
외형도(Dimension)							
inductive				ED 10 10 112x1	50 M12x1 M12	17 17 50	





High switching frequency

Long distance type

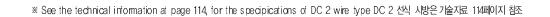
Reverse polarity protection







크 기(Diameter)		M12						
검출거리 (Switching distance)		4mm 8mm		4mm	8mm			
실드 / 비실드 (Shielded	d/non-S	Shielded)	Shielded	non-Shielded	Shielded	non-Shielded		
DC 3 wire 10~30V	NPN	N,O	SD-12MS-04	SD-12M-08	SD-12MS-04LS	SD-12M-08LS		
(Ripple ±10%)	IVMV	N,C	SD-12MSB-04	SD-12MB-08	SD-12MSB-04LS	SD-12MB-08LS		
	PNP	N,O	SD-12MSP-04	SD-12MP-08	SD-12MSP-04LS	SD-12MP-08LS		
	FINE	N,C	SD-12MSBP-04	SD-12MBP-08	SD-12MSBP-04LS	SD-12MBP-08LS		
DC 2 wire 10~60V N.		.0	SD-12MSK-04	SD-12MK-08	-	_		
(Ripple ±10%)	N.	.C	SD-12MSKB-04	SD-12MKB-08	_	_		
응답주피수 (Switching	g frequ	ency)	1KHz	500Hz	1KHz	500Hz		
소비전류 (Consumption	on cur	rent)		⟨1	Om A			
부하전류 (Max, Load	currer	nt)		200	OmA			
잔류전압 (Voltage dro	op)			< 2	20V			
응차거리 (Hysteresis))		< 15% (sr)					
반복정밀도 (Repeat a	ccurac	y)	< 1.0% (sr)					
사용온도 (Operating t	temper	ature)	-25°C~70°C (±10%)					
단락보호회로 (Short-di	단락보호회로 (Short-circuit protection)		Yes					
보호등급 (Protection	보호등급 (Protection category)		IP 67					
재 질(Housing ma	aterial)		Stainless steel or Nickel plated bræss					
검출면 재질 (Material	active	face)	POM/PBT					
동작표시등 (Indicator))		LED					
케이블 (Cable)			Φ40 x 3C x 0.15SQ					
외형도 (Dimension)								
Inductive			50 M1	2x1 8 50	30	M12x1 8		





High switching frequency

Reverse polarity protection

Long distance type







크 기(Dia	meter)			M	12		
검출거리 (Switching	distar	nce)	4mm	8mm	4mm	8mm	
실드 / 비실드 (Shielde	d/non-S	Shielded)	Shielded	non-Shielded	Shielded	non-Shielded	
DC3 wire 10~30V	NPN	N.O	SC-12MS-04	SC-12M-08	SC-12MS-04LS	SC-12M-08LS	
(Ripple ±10%)	INMV	N,C	SC-12MSB-04	SC-12MB-08	SC-12MSB-04LS	SC-12MB-08LS	
	PNP	N.O	SC-12MSBP-04	SC-12MP-08	SC-12MSP-04LS	SC-12MP-08LS	
	MNP	N.C	SC-12MSP-04	SC-12MBP-08	SC-12MSBP-04LS	SC-12MBP-08LS	
DC 2 wire 10~60V	N.	0	SC-12MSK-04	SC-12MK-08	-	-	
(Ripple ±10%)	N.	С	SC-12MSKB-04	SC-12MKB-08	_	_	
응답주피수 (Switching	frequ	ency)	1KHz	500Hz	1KHz	500Hz	
소비전류 (Consumpti	on curi	rent)		< 1	OmA		
부하전류 (Max, Load	currer	it)		200	OmA		
잔류전압 (Voltage dr	op)		< 2.0V				
응차거리 (Hysteresis)			⟨ 15% (sr)				
반복정밀도 (Repeat a	ccurac	y)	⟨ 1.0% (sr)				
사용온도 (Operating :	tem per	ature)	-25°C~70°C (±10%)				
딘락보호회로 (Short-ci	rcuit pro	otection)	Yes				
보호등급 (Protection	catego	ry)	IP 67				
재 질 (Housing ma	aterial)		Stainless steel or Nickel plated brass				
검출면 재질 (Material	active	face)	POM/PBT				
동작표시등 (Indicator))		LED				
케 이 블 (Cable)			-				
외형도(Dimension)			<u>, , , , , , , , , , , , , , , , , , , </u>	ED 10	50	17 17 50	

[※] See the technical information at page 114, for the specipications of DC 2 wire type DC 2 선식 시방은 기술자료 114페이지 참조



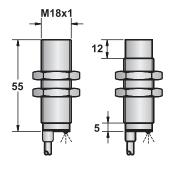
· High switching frequency Reverse polarity protection

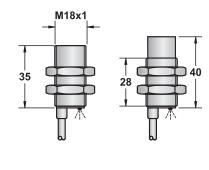






크 기(Dia	meter)		M18				
검출거리 (Switching distance)		5mm	8mm	5mm	8mm		
실드 / 비실드 (Shielde	d/non-S	Shielded)	Shielded	non-Shielded	Shielded	non-Shielded	
DC 3 wire 10~30V	DC 3 wire 10~30V NPN	N,O	SD-18MS	SD-18M	SD-18MS-LS	SD-18M-LS	
(Ripple ±10%)	INFIN	N,C	SD-18MSB	SD-18MB	SD-18MSB-LS	SD-18MB-LS	
	PNP	N,O	SD-18MSP	SD-18MP	SD-18MSP-LS	SD-18MP-LS	
	FINE	N,C	SD-18MSBP	SD-18MBP	SD-18MSBP-LS	SD-18MBP-LS	
DC 2 wire 10~60V	N	Ο.	SD-18MSK	SD-18MK	SD-18MSK-LS	SD-18MK-LS	
(Ripple ±10%)	N	.C	SD-18MSKB	SD-18MKB	SD-18MSKB-LS	SD-18MKB-LS	
응답주파수 (Switching	g frequ	iency)	1KHz	500Hz	1KHz	500Hz	
소비전류 (Consumpti	on cur	rent)	< 10m A				
부하전류 (Max, Load	currer	nt)	200mA				
잔류전압 (Voltage dr	ор)		< 1.5∨				
응차거리 (Hysteresis))		< 15% (sr)				
반복정밀도 (Repeat a	ccurac	cy)	< 1.0% (sr)				
사용온도 (Operating	tempei	rature)	-25°C~70°C (±10%)				
단락보호회로 (Short-ci	ircuit pr	otection)	Yes				
보호등급 (Protection	catego	ry)	IP 67				
재 질(Housing m	aterial)		Stainless steel or Nickel plated brass				
검출면 재질 (Material	active	face)	PBT				
동작표시등 (Indicator)		LED					
케이블 (Cable)			Φ4.0 x 3C x 0.34SQ				
외형도 (Dimension)							
			M18x1		M18x1		
			<u> </u>				





[※] See the technical information at page 114, for the specipications of DC 2 wire type DC 2 선식 시방은 기술자료 114페이지 참조



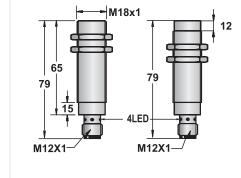


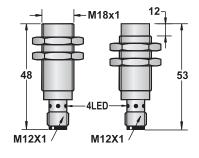


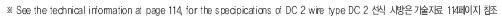


•	ritching frequency polarity protection	
7	71 (Diameter)	

크 기 (Diameter)		M18					
검출거리 (Switching	distar	nce)	5mm	8mm	5mm	8mm	
실드 / 비실드 (Shielde	d/non-S	Shielded)	Shielded	non-Shielded	Shielded	non-Shielded	
DC3 wire 10~30V	NPN	N,O	SC-18MS	SC-18M	SC-18MS-LS	SC-18M-LS	
(Ripple ±10%)	INFIN	N,C	SC-18MSB	SC-18MB	SC-18MSB-LS	SC-18MB-LS	
	PNP	N,O	SC-18MSBP	SC-18MP	SC-18MSP-LS	SC-18MP-LS	
	1 1 1 1	N,C	SC-18MSP	SC-18MBP	SC-18MSBP-LS	SC-18MBP-LS	
DC2 wire 10~60V	N.	0	SC-18MSK	SC-18MK	SC-18MSK-LS	SC-18MK-LS	
(Ripple ±10%)	N.	С	SC-18MSKB	SC-18MKB	SC-18MSKB-LS	SC-18MKB-LS	
응답주피수 (Switching	g frequ	ency)	1KHz	500Hz	1KHz	500Hz	
소비전류 (Consumptio	on cur	rent)	< 10mA				
부하전류 (Max, Load	부하전류 (Max, Load current)		200mA				
잔류전압 (Voltage dro	op)		⟨ 1.5∀				
응차거리 (Hysteresis)			< 15% (sr)				
반복정밀도 (Repeat a	ccurac	y)	< 1.0% (sr)				
사용 온도 (Operating	tempe	rature)	-25°C~70°C (±10%)				
단락보호회로 (Short-ci	rcuit pro	otection)	Yes				
보호 등급 (Protection	catego	ory)	IP 67				
재 질 (Housing ma	aterial)		Stainless steel or Nickel plated brass				
검출면 재질 (Material	검출면 재질 (Material active face)		PBT				
동작 표시등 (Indicator	r)		LED				
케 이 블(Cable 2m	:PVC	;)			-		
외 형 도(Dimension	n)						









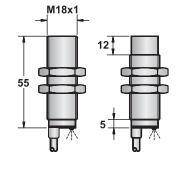
· Long distance type Reverse polarity protection

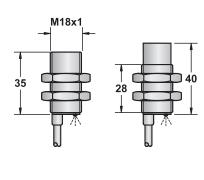






크 기(Diameter)			M18				
검출거리 (Switching distance)		8mm	16mm	8mm	16mm		
실드/비실드			Shielded	non-Shielded	Shielded	non-Shielded	
DC 3 wire 10~30V	NPN	N,O	SD-18MS-08	SD-18M-16	SD-18MS-08LS	SD-18M-16LS	
(Ripple ±10%)	INFIN	N,C	SD-18MSB-08	SD-18MB-16	SD-18MSB-08LS	SD-18MB-16LS	
	PNP	N,O	SD-18MSP-08	SD-18MP-16	SD-18MSP-08LS	SD-18MP-16LS	
	FINE	N,C	SD-18MSBP-08	SD-18MBP-16	SD-18MSBP-08LS	SD-18MBP-16LS	
DC 2 wire 10~60V	N	.0	SD-18MSK-08	SD-18MK-16	SD-18MSK-08LS	SD-18MK-16LS	
(Ripple ±10%)	N	.C	SD-18MSKB-08	SD-18MKB-16	SD-18MSKB-08LS	SD-18MKB-16LS	
응답주파수 (Switching	g frequ	iency)	500Hz	150⊬z	500Hz	150Hz	
소비 전류 (Consump	otion cu	rrent)	< 10m A				
부하 전류 (Max, Loa	d curre	ent)	200mA				
잔류 전압 (Voltage d	drop)		< 20V				
응차 거리 (Hysteresi	is)		< 15% (sr)				
반복정밀도 (Repeat a	ccurac	y)	< 1,0% (sr)				
사용 온도 (Operating	g temp	erature)	-25°C~70°C (±10%)				
단락보호회로 (Short-ci	ircuit pr	otection)	Yes				
보호 등급 (Protection	n cate	gory)	IP 67				
재 질 (Housing r	재 질 (Housing material)		Stainless steel or Nickel plated brass				
검출면 재질 (Material active face)		PBT					
동작표시등 (Indicator)		LED					
케 이 블 (Cable 2m : PVC)			Φ4.0 x 3C x 0.34SQ				
외 형 도(Dimensio	n)						
			M18x1		N/40- 4		
					M18x1		





[※] See the technical information at page 114, for the specipications of DC 2 wire type DC 2 선식 시방은 기술자료 114페이지 참조









wing ab	conco cy	po	
Reverse	polarity	protection	

크 기 (Diameter)				М	18		
검출거리 (Switching distance)			8mm	16mm	8mm	16mm	
실 드/비실 드			Shielded	non-Shielded	Shielded	non-Shielded	
DC3 wire 10~30V	NPN	N.O	SC-18MS-08	SC-18M-16	SC-18MS-08LS	SC-18M-16LS	
(Ripple ±10%)	INFIN	N.C	SC-18MSB-08	SC-18MB-16	SC-18MSB-08LS	SC-18MB-16LS	
	PNP	N,O	SC-18MSP-08	SC-18MP-16	SC-18MSP-08LS	SC-18MP-16LS	
	FINE	N.C	SC-18MSBP-08	SC-18MBP-16	SC-18MSBP-08LS	SC-18MBP-16LS	
DC 2 wire 10~60V	N.	0	SC-18MSK-08	SC-18MK-16	SC-18MSK-08LS	SC-18MK-16LS	
(Ripple ±10%)	N.	С	SC-18MSKB-08	SC-18MKB-16	SC-18MSKB-08LS	SC-18MKB-16LS	
응답주피수 (Switching	g frequ	ency)	500⊬z	150Hz	500Hz	150Hz	
소비 전류 (Consump	otion cu	rrent)		<	10mA		
부하 전류 (Max, Loa	d curre	ent)		20	00mA		
잔류 전압 (Voltage d	drop)		< 2.0V				
응차 거리 (Hysteresi	is)		〈 15% (sr)				
반복정밀도 (Repeat a	ccurac	y)	< 1.0% (sr)				
사용 온도 (Operating	g temp	erature)	-25°C~70°C (±10%)				
단락보호회로 (Short-ci	rcuit pro	otection)	Yes				
보호 등급 (Protection	n categ	gory)	IP 67				
재 질 (Housing r	materia	1)	Stainless steel or Nickel plated brass				
검출면 재질 (Material	active	face)	PBT				
동작표시등 (Indicator))		LED				
케 이 블(Cable 2m	:PVC	:)	-				
외 형 도(Dimension	n)		M188	12 79 M12X1	48 M12X1 M	53	



※ See the technical information at page 114, for the specipications of DC 2 wire type DC 2 선식 시방은 기술자료 114페이지 참조









 Reverse polarity protection)
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크 기(Diameter)		M30						
검출거리 (Switching	dista	nce)	10mm	15mm	10mm	15mm		
실드/비실드	실드/비실드			non-Shielded	Shielded	non-Shielded		
DC 3 wire 10~30V	NIDNI	N,O	SD-30MS	SD-30M	SD-30MS-LS	SD-30M-LS		
(Ripple ±10%)	NPN	N,C	SD-30MSB	SD-30MB	SD-30MSB-LS	SD-30MB-LS		
	DND	N,O	SD-30MSP	SD-30MP	SD-30MSP-LS	SD-30MP-LS		
	PNP	N,C	SD-30MSBP	SD-30MBP	SD-30MSBP-LS	SD-30MBP-LS		
DC 2 wire 10~60V	N	.О	SD-30MSK	SD-30MK	SD-30MSK-LS	SD-30MK-LS		
(Ripple ±10%)	N	.C	SD-30MSKB	SD-30MKB	SD-30MSKB-LS	SD-30MKB-LS		
응답주피수 (Switching	g frequ	iency)	300⊬ż	150Hz	300Hz	150Hz		
소비 전류 (Consump	tion c	rrent)		⟨1	Om A			
부하 전류 (Max, Loa	d curr	ent)		20	OmA			
잔류 전압 (Voltage d	drop)			<	1.5V			
응차 거리 (Hysteresi	응차 거리 (Hysteresis)			< 15% (sr)				
반복정밀도 (Repeat a	ccurac	y)	< 1.0% (sr)					
사용 온도 (Operating	사용 온도 (Operating temperature)			-25°C~70°C (±10%)				
단락보호회로 (Short-ci	단락보호회로 (Short-circuit protection)			Yes				
보호 등급 (Protection	보호 등급 (Protection category)			IP 67				
재 질 (Housing r	materia	ıl)	Stainless steel or Nickel plated brass					
검출면 재질 (Material	active	face)	PBT					
동작표시등 (Indicator	동작표시등 (Indicator)		LED					
케 이 블(Cable 2m	ı : PVC	C)	Φ5.8 x 3C x 0.5SQ					
외 형 도(Dimensio	n)							
Inductive			55 M30	35	35 M30	25 40		

[※] See the technical information at page 114, for the specipications of DC 2 wire type DC 2 선식 시방은 기술자료 114페이지 참조

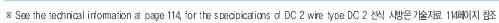








크 기 (Diameter)			M30				
검출거리 (Switching distance)			10mm	15mm	10mm	15mm	
실 드/비실 드			Shielded	non-Shielded	Shielded	non-Shielded	
DC3 wire 10~30V	NPN	N,O	SC-30MS	SC-30M	SC-30MS-LS	SC-30M-LS	
(Ripple ±10%)	IVMV	N,C	SC-30MSB	SC-30MB	SC-30MSB-LS	SC-30MB-LS	
	PNP	N,O	SC-30MSP	SC-30MP	SC-30MSP-LS	SC-30MP-LS	
	FINE	N,C	SC-30MSBP	SC-30MBP	SC-30MSBP-LS	SC-30MBP-LS	
DC 2 wire 10~60V	N.	0	SC-30MSK	SC-30MK	SC-30MSK-LS	SC-30MK-LS	
(Ripple ±10%)	N.	С	SC-30MSKB	SC-30MKB	SC-30MSKB-LS	SC-30MKB-LS	
응답주파수 (Switching	frequ	ency)	300⊬z	150Hz	300⊬z	150Hz	
소비 전류 (Consump	tion c	rrent)		<	10mA		
부하 전류 (Max, Loa-	d curr	ent)		20	00mA		
잔류 전압 (Voltage d	drop)		〈 1.5V				
응차 거리 (Hysteresi	s)		⟨ 15% (sr)				
반복정밀도 (Repeat a	ccurac	y)	< 1.0% (sr)				
사용 온도 (Operating	g temp	erature)	-25°C~70°C (±10%)				
단락보호회로 (Short-cir	cuit pro	otection)	Yes				
보호 등급 (Protection	n cate	gory)	IP 67				
재 질 (Housing r	materia	ıl)	Stainless steel or Nickel plated brass				
검출면 재질 (Material	active	face)	PBT				
동작표시등 (Indicator))		LED				
케 이 블(Cable 2m	: PVC	;)	-				
외 형 도(Dimension	า)			15 15 LED	M30x1.5	15	









M30

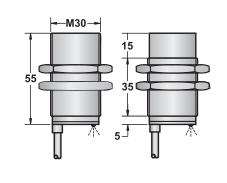


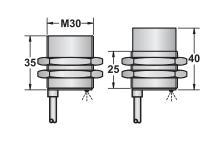
크 기(Diam	neter)
검출거리 (Switching (distance)

Long distance type

Reverse polarity protection

				· ·		
검출거리 (Switching distance)		16mm	25mm	16mm	25mm	
실드/비실드		Shielded	non-Shielded	Shielded	non-Shielded	
DC 3 wire 10~30V	NIDNI	N,O	SD-30MS-16	SD-30M-25	SD-30MS-16LS	SD-30M-25LS
(Ripple ±10%)	NPN	N,C	SD-30MSB-16	SD-30MB-25	SD-30MSB-16LS	SD-30MB-25LS
	PNP	N,O	SD-30MSP-16	SD-30MP-25	SD-30MSP-16LS	SD-30MP-25LS
	HVP	N,C	SD-30MSBP-16	SD-30MBP-25	SD-30MSBP-16LS	SD-30MBP-25LS
DC 2 wire 10~60V	N.	.0	-	_	_	_
(Ripple ±10%)	N.	.C	-	-	-	_
응답주피수 (Switching	응답주피수 (Switching frequency)		150Hz	100Hz	150Hz	100Hz
소비 전류 (Consumption current)		< 10m A				
부하 전류 (Max, Load current)		200mA				
잔류 전압 (Voltage drop)		<20V				
응차 거리 (Hysteresis)		< 15% (sr)				
반복정밀도 (Repeat a	반복정밀도 (Repeat accuracy)		< 1.0% (sr)			
사용 온도 (Operating temperature)		-25°℃~70°C (±10%)				
단락보호회로 (Short-ci	rcuit pr	otection)	Yes			
보호 등급 (Protection category)		IP 67				
재 질 (Housing material)		Stainless steel or Nickel plated bræss				
검출면 재질 (Material active face)		PBT				
동작표시등 (Indicator)			LED			
케 이 블(Cable 2m	케 이 블 (Cable 2m : PVC)					
외 형 도(Dimensio	n)					











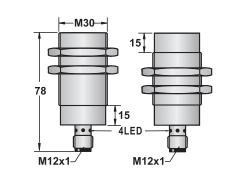


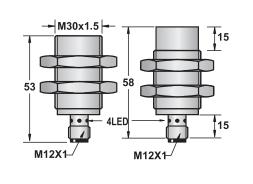
Long	distance type	

Reverse polarity protection

크 기 (Diameter)			M	30			
검출거리 (Switching distance)		16mm	25mm	16mm	25mm		
실 드/비실 드		Shielded	non-Shielded	Shielded	non-Shielded		
DC3 wire 10~30V	NIDNI	N,O	SC-30MS-16	SC-30M-25	SC-30MS-16LS	SC-30M-25LS	
(Ripple ±10%)	NPN	N,C	SC-30MSB-16	SC-30MB-25	SC-30MSB-16LS	SC-30MB-25LS	
	PNP	N,O	SC-30MSP-16	SC-30MP-25	SC-30MSP-16LS	SC-30MP-25LS	
	HNP	N,C	SC-30MSBP-16	SC-30MBP-25	SC-30MSBP-16LS	SC-30MBP-25LS	
DC 2 wire 10~60V	N.	0	-	-	-	-	
(Ripple ±10%)	N,C		_	-	-	-	
응답주피수 (Switching	frequ	ency)	150Hz	100⊢₺	150Hz	100Hz	
소비 전류 (Consump	tion c	rrent)	< 10mA				
부하 전류 (Max, Loa	d curr	ent)	200mA				
잔류 전압 (Voltage d	drop)		< 2.0∨				
응차 거리 (Hysteresis)		< 15% (sr)					
반복정밀도 (Repeat a	ccurac	y)		< 1.□	0% (sr)		
사용 온도 (Operating	g temp	erature)		-25°C~70°C (±10%)			
단락보호회로 (Short-ci	(Short-circuit protection)		Yes				
보호 등급 (Protection category)		IP 67					
재 질 (Housing material)		Stainless steel or Nickel plated brass					
검출면 재질 (Material	active	face)		PBT			
동작표시등 (Indicator))			l	_ED		
케 이 블(Cable 2m	: PVC	;)		-			

외 형 도(Dimension)







Inductive









크 기 (Diameter)		M	12		
검출거리 (Switching distance)	2mm	4mm	2mm	4mm	
실드/비실드	Shielded	non-Shielded	Shielded	non-Shielded	
AC 2 wire 20~250V N,O	SA-12MS	SA-12M	SAC-12MS	SAC-12M	
(Ripple ±10%) N.C	SA-12MSB	SA-12MB	SAC-12MSB	SAC-12MB	
응답주피수 (Switching frequency)		25	5Hz		
소비 전류 (Consumption current)		< 1.	8mA		
부하 전류 (Max, Load current)		400	OmA .		
잔류 전압 (Voltage drop)		≤ 8VAC (at 400mA)		
응차 거리 (Hysteresis)		< 15	% (sr)		
반복정밀도 (Repeat accuracy)		< 1,0	% (sr)		
사용 온도 (Operating temperature)		-25°C~70	℃ (±10%)		
단락보호회로 (Short-aircuit protection)		١	vb		
보호 등급 (Protection category)	IP 67				
재 질 (Housing material)	Stainless steel or Nickel plated brass				
검출면 재질 (Material active face)	PBT				
동작표시등 (Indicator)	LED				
케 이 블 (Cable 2m : PVC)	Φ4.0 x 2C x 0.15SQ -			_	
외형도 (Dimension)	M12x1	50	M12x1 42 68 M12x1	4LED 10 M12x1	



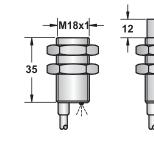






크 기 (Diameter)			M	118	
검출거리 (Switching	distance)	5mm	8mm	5mm	8mm
실드/비실드		Shielded	non-Shielded	Shielded	non-Shielded
AC 2 wire 20~250V	N,O	SA-18MS	SA-18M	SA-18MS-LS	SA-18M-LS
(Ripple ±10%)	N,C	SA-18MSB	SA-18MB	SA-18MSB-LS	SA-18MB-LS
응답주피수 (Switching	frequency)		25	5Hz	
소비 전류 (Consumpt	ion current)		⟨ 1	.8mA	
부하 전류 (Max, Load	d current)		40	0mA	
잔류 전압 (Voltage dr	rop)		≤ 8VAC	(at 400mA)	
응차 거리 (Hysteresis	(;)	< 15% (sr)			
반복정밀도 (Repeat ac	curacy)	< 1.0% (sr)			
사용 온도 (Operating	temperature)	-25°C~70°C (±10%)			
단락보호회로 (Short-circ	cuit protection)	No			
보호 등급 (Protection	category)	IP 67			
재 질 (Housing m	naterial)	Stainless steel or Nickel plated brass			
검출면 재질 (Material a	active face)	PBT			
동작표시등 (Indicator)		LED			
케 이 블 (Cable 2m	: PVC)	Φ4.0 x 2C x 0.34SQ			
외 형 도(Dimension)				
		M18x1-	12	M18x1	12 40













크 기(Diameter)		M18				
검출거리 (Switching distance)		5mm	8mm	5mm	8mm	
실드/비실드		Shielded	non-Shielded	Shielded	non-Shielded	
AC 2 wire 20~250V	N,O	SAC-18MS	SAC-18M	SAC-18MS-LS	SAC-18M-LS	
(Ripple ±10%)	N.C	SAC-18MSB	SAC-18MB	SAC-18MSB-LS	SAC-18MB-LS	
응답주피수 (Switching fre	equency)		25	5Hz		
소비 전류 (Consumption	n current)		< 1.5	8mA		
부하 전류 (Max, Load cu	urrent)		400	Om A		
잔류 전압 (Voltage drop	p)		≤ 8VAC (at 400mA)		
응차 거리 (Hysteresis)			< 159	% (sr)		
반복정밀도 (Repeat accu	uracy)		< 1.0℃	% (sr)		
사용 온도 (Operating ter	emperature)	-25°C~70°C (±10%)				
단락보호회로 (Short-dircuit protection)		No				
보호 등급 (Protection category)		IP 67				
재 질 (Housing material)		Stainless steel or Nickel plated brass				
검출면 재질 (Material act	검출면 재질 (Material active face)		PBT			
동작표시등 (Indicator)	동작표시등 (Indicator)		LED			
케 이 블(Cable 2m : F	케 이 블(Cable 2m : PVC)		-			
외형 도 (Dimension)		79 62 M12x1 M2	12 64 79	48	18x1 12 53	



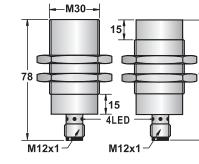






크 기 (Diameter)			M	130	
검출거리 (Switching distance)		10mm	15mm	10mm	15mm
실드/비실드		Shielded	non-Shielded	Shielded	non-Shielded
AC 2 wire 20~250V	N,O	SA-30MS	SA-30M	SAC-30MS	SAC-30M
(Ripple ±10%)	N,C	SA-30MSB	SA-30MB	SAC-30MSB	SAC-30MB
응답주파수 (Switching f	requency)		2	5Hz	
소비 전류 (Consumptio	on current)		⟨ 1	l.8mA	
부하 전류 (Max, Load	current)		40	OmA	
잔류 전압 (Voltage drop)			≤ 8VAC	(at 400mA)	
응차 거리 (Hysteresis)		< 15% (sr)			
반복정밀도 (Repeat accuracy)		< 1.0% (sr)			
사용온도 (Operating temperature)		-25°C~70°C (±10%)			
단락보호회로 (Short-circuit protection)		No			
보호 등급 (Protection category)		IP 67			
재 질 (Housing ma	aterial)	Stainless steel or Nickel plated brass			
검출면 재질 (Material a	ctive face)	PBT			
동작표시등 (Indicator)		LED			
케 이 블 (Cable 2m : PVC)		Φ5.8 x 30	C x 0.58Q		-
외 형 도(Dimension)		80 M30	15	78	15







DC ULRTAMINI, SQUARE

Inductive Proximity Switch

DC STANDARD, SQUARE

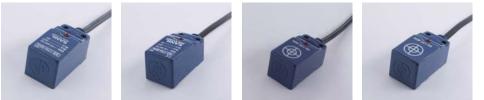






Reverse	polanty	pro	tection

크 기 (Diameter)		28	Q10		
검출거리 (Switching distance)	2.5mm	2,5mm	3.0mm		
실드/비실드	Shielded	non-Shielded	non-Shielded		
DC 3 wire 10~30V N,O	SQ-8H-2.5DN	SQ-8F-2.5DN	SQ-10F-3DN		
(Ripple ±10%) N.C	SQ-8H-2.5DNB	SQ-8F-25DNB	SQ-10F-3DNB		
PNP N.O	SQ-8H-2.5DP	SQ-8F-25DP	SQ-10F-3DP		
N.C	SQ-8H-2,5DPB	SQ-8F-25DPB	SQ-10F-3DPB		
응답주파수 (Switching frequency)	500Hz	500Hz	2 50Hz		
소비 전류 (Consumption current)		< 10m A			
부하 전류 (Max, Load current)		100mA			
잔류 전압 (Voltage drop)		〈 1.5V			
응차 거리 (Hysteresis)		< 15% (sr)			
반복정밀도 (Repeat accuracy)		< 0.04mm			
사용 온도 (Operating temperature)	-25°C~70°C (±10%)			
단락보호회로 (Short-direuit protection		Yes			
보호 등급 (Protection category)		IP 67			
재 질(Housing material)		Polycarbonate			
검출면 재질 (Material active face)		Polycarbonate			
동작표시등 (Indicator)		LED			
케 이 블 (Cable 2m : PVC)		Φ2.7 x 3C x 0.159Q			
외형 도(Dimension)	LED 4.5 8	7.4	66 screw 0.8 deep 5 43.1		





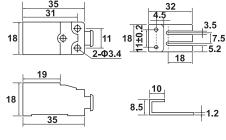




Reverse polarity protection

크 기 (Diameter)			Q	17		
검출거리 (Switching distance)		5mm	8mm	5mm	8mm	
실 드 / 비 실 드				non-S	hielded	
DC 3 wire 10~30V	NIDAL	N,O	SD-17H-5DN	SD-17H-8DN	SD-17F-5DN	SD-17F-8DN
(Ripple ±10%)	NPN	N.C	_	-	-	_
	PNP	N,O	-	-	-	-
	FINE	N,C	-	-	-	-
응답주파수 (Switching	freque	ency)	500Hz	200Hz	500Hz	200Hz
소비 전류 (Consumpt	tion cu	rrent)		⟨ 1	Om A	
부하 전류 (Max, Load	d curre	ent)		100	OmA	
잔류 전압 (Voltage d	rop)			<	1.5V	
응차 거리 (Hysteresis	3)		< 15% (sr)			
반복정밀도 (Repeat ad	curac	y)	_			
사용온도 (Operating	temp	erature)	-25°C~70°C (±10%)			
단락보호회로 (Short-circuit protection)		Yes				
보호 등급 (Protection category)		IP 67				
재 질 (Housing n			Polycarbonate			
검출면 재질 (Material	active	face)	Polycarbonate			
동작표시등 (Indicator)			LED			
케 이 블 (Cable 2m)		Φ4 x 30	Cx 0.28Q	
외 형 도 (Dimension)		35 31 18	32 4.5 3.5 7.5 .4 18 10 8.5	35 31 18 19 18 35	-





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DC STANDARD, SQUARE









 Reverse polarity r 	protectio
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크 기 (Diameter)			Q30			
검출거리 (Switching distance)			10mm	15mm	10mm	15mm
실드/비실드			non-Shielded			
DC 3 wire 10~30V (Ripple ±10%)	NPN	N,O	SD-30H-10DN	SD-30H-15DN	SD-30F-10 DN	SD-30F-15DN
		N.C	_	-	_	-
	PNP	N,O	_	-	_	-
		N,C	-	-	-	-
응답주파수 (Switching frequency)			250Hz	200Hz	250Hz	200Hz
소비 전류 (Consumption current)			√ 10m A			
부하 전류 (Max, Load current)			100mA			
잔류 전압 (Voltage drop)			< 1.5∨			
응차 거리 (Hysteresis)			< 15% (sr)			
반복정밀도 (Repeat accuracy)			_			
사용 온도 (Operating temperature)			-25°C~70°C (±10%)			
단락보호회로 (Short-circuit protection)			Yes			
보호 등급 (Protection category)			IP 67			
재 질(Housing material)			Polycarbonate			
검출면 재질 (Material active face)			Polycarbonate			
동작표시등 (Indicator)			LED			
케 이 블 (Cable 2m : PVC)			Φ4 x 3C x 0.28Q			
0 = = (5: :)						

외 형 도(Dimension)

