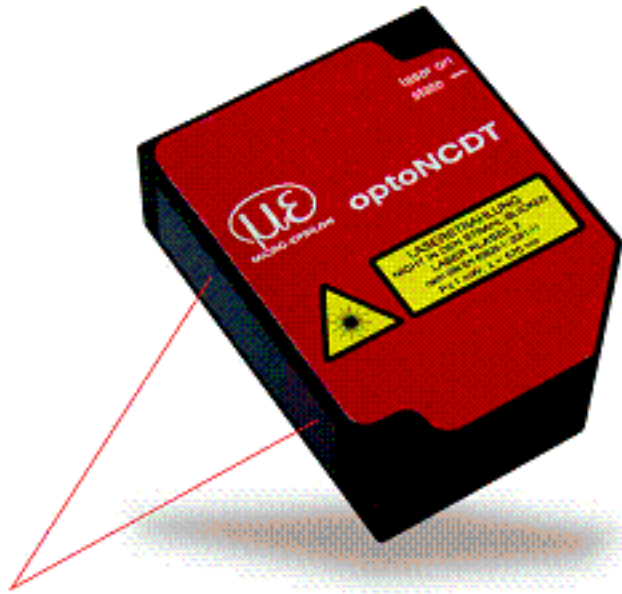
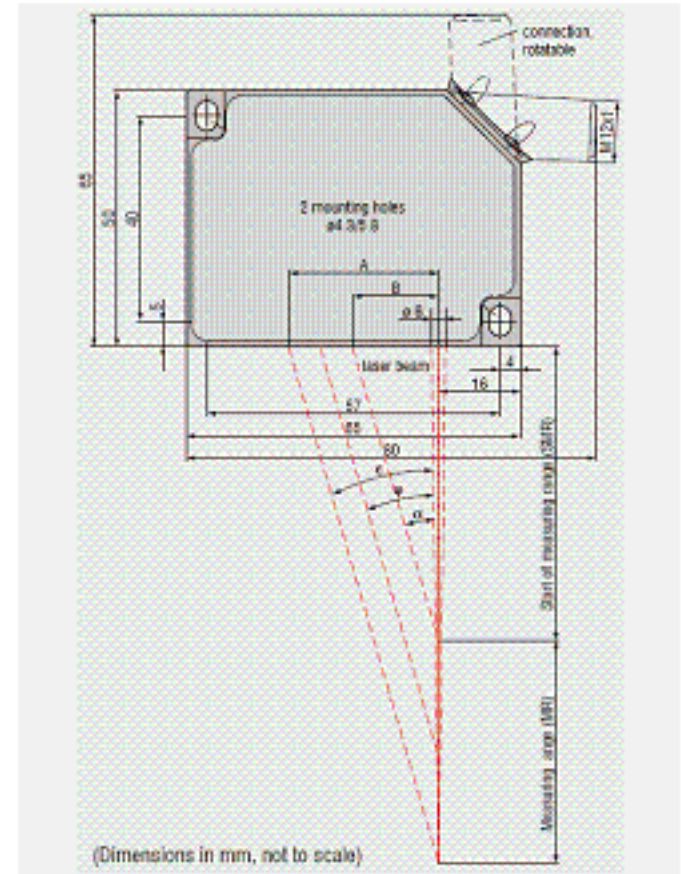


레이저 변위 센서

optoNCDT 1302 시리즈



- 통합 컨트롤러와 콤팩트한 디자인
- 측정 범위 : 20mm ~ 200mm
- 측정 속도 : 750Hz
- 아날로그 출력 (U/I) 및 디지털 출력
- OEM 적용에 이상적
- 간편한 통합



MR	SMR	α	ϕ	ϵ	A	B
20	30	31,2	27,9	25,8	24,2	18,2
50	45	25,1	19,6	16,9	28,9	21,1
100	50	23,1	14,4	11,3	30,1	21,3
200	60	20,1	9,4	6,8	30,8	22,0

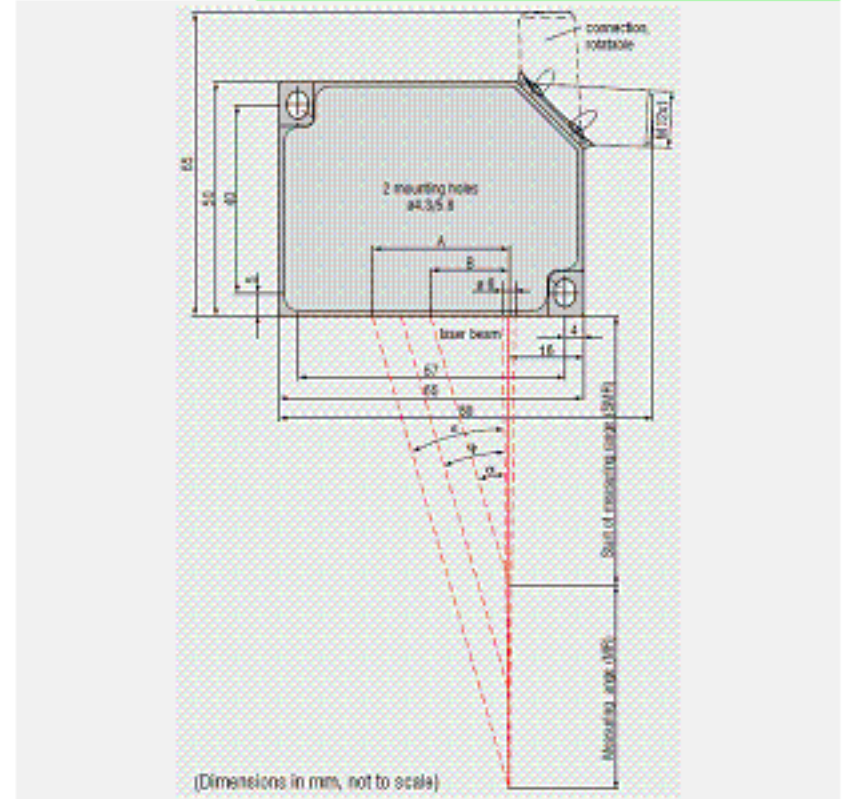
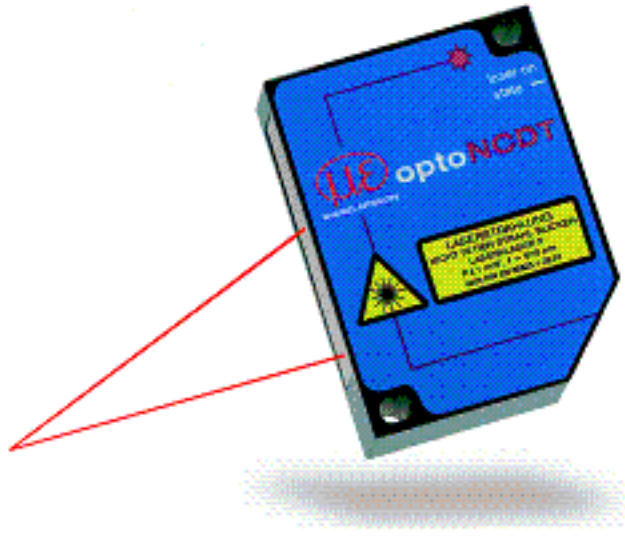
Model	ILD1302-20	ILD1302-50	ILD1302-100	ILD1302-200
Measuring range	20mm	50mm	100mm	200mm
Start of measuring range	SMR	30mm	45mm	50mm
Midrange	MR	40mm	70mm	100mm
End of measuring range	EMR	50mm	95mm	150mm
Linearity	40 μ m	100 μ m	200 μ m	400 μ m
Resolution	$\pm 0,2\%$ FSO			
	averaged with averaging factor 64	4 μ m	10 μ m	20 μ m
	dynamic 750Hz	10 μ m	25 μ m	50 μ m
Measuring rate	750Hz			
Light source	semiconductor laser <1mW, 670nm (red)			
Laser safety class	class 2 IEC 60825-1:2008-05			
Spot diameter	SMR	210 μ m	1100 μ m	1400 μ m
	MR	530 μ m	110 μ m	130 μ m
	EMR	830 μ m	1100 μ m	1400 μ m
Protection class	IP 67			
Vibration	15g/10Hz~1kHz			
Shock	15g/6ms (IEC 68-2-29)			
Weight(without cable)	approx. 83g			
Temperature stability	0,03% FSO/°C		0,08% FSO/°C	
Operation temperature	0 ~ +55°C			
Storage temperature	-20 ~ +70°C			
Output	analogue	4 ~ 20mA (1 ~ 5V with cable PC 1402-3/U)		
	digital	RS422		
Power supply	11 ~ 30VDC, 24VDC/50mA			
Controller	integrated signal processor			
Electromagnetic compatibility (EMC)	EN 61326-1:2006/EN 55011 Class B(Interface emission) EN 61326-1:2006/EN 61000-4-2:1995+ A1:1998+ A2:2001(Interference resistance)			

FSO = Full scale output All specifications apply for a diffusely reflecting matt white ceramic target

SMR = Start of measuring range; MMR = Midrange; EMR = End of measuring range

레이저 변위 센서

optoNCDT 1402 시리즈 (아날로그 & 디지털 출력)



- 통합 컨트롤러와 콤팩트한 디자인
- 측정 범위 : 5mm ~ 600mm
- 측정 속도 : 1.5kHz까지 가능
- 아날로그 (U/I) 및 디지털 출력
- 정확한 측정

MR	SMR	α	φ	ε	A	B
5	20	33,5	35,5	37,1	18,9	13,2
10	20	33,5	32,9	32,4	19,1	13,2
20	30	31,2	27,9	25,8	24,2	18,2
50	45	25,1	19,6	16,9	28,9	21,1
100	50	23,1	14,4	11,3	30,1	21,3
200	60	20,1	9,4	6,8	30,8	22,0
250VT	100	14,7	7,6	5,5	33,9	26,2
600	200	9,7	4,3	3	41,6	33,7

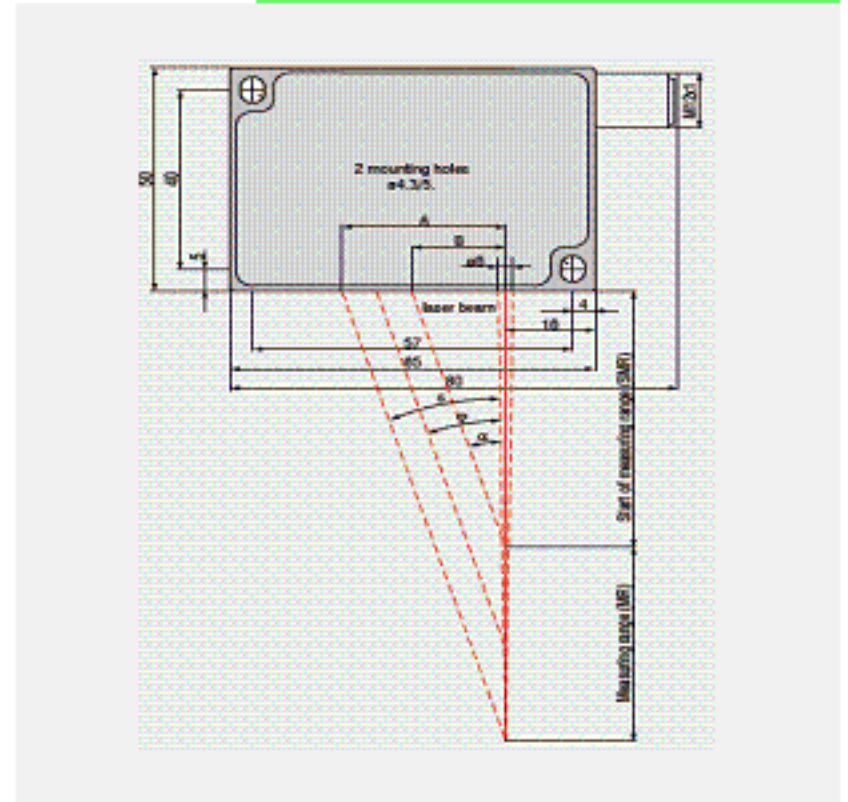
Model	ILD 1402-5	ILD 1402-10	ILD 1402-20	ILD 1402-50	ILD 1402-100	ILD 1402-200	ILD 1402-250VT	ILD 1402-600
Measuring range	5mm	10mm	20mm	50mm	100mm	200mm	250mm	600mm
Start of measuring range SMR	20mm	20mm	30mm	45mm	50mm	60mm	100mm	200mm
Midrange MMR	22,5mm	25mm	40mm	70mm	100mm	160mm	225mm	500mm
End of measuring range EMR	25mm	30mm	50mm	95mm	150mm	260mm	350mm	800mm
Linearity	5~9µm	5~18µm	7~36µm	12~90µm	20~180µm	40~360µm	50~1200µm	120~3000µm
	≤0,18% FSO						≤0,5% FSO	
Resolution averaged with averaging factor 64	0,6µm	1µm	2µm	5µm	10µm	13µm	32µm	80µm
Resolution dynamic 1,5kHz	1~3µm	2~5µm	5~10µm	6~25µm	12~50µm	13~100µm	32~300µm	80~600µm
	0,02~0,05% FSO						0,02~0,12% FSO	
Measuring rate, programmable	1,5kHz: 1kHz: 750Hz: 375Hz: 50Hz							
Light source	semiconductor laser<1mW, 670nm (red)							
Laser safety class	class 2 IEC 60825-1 : 2008-05							
Spot diameter SMR	110µm	110µm	210µm	1100µm	1400µm	2300µm	5000µm	2,6x5mm
Spot diameter MMR	380µm	650µm	530µm	110µm	130µm	2200µm	5000µm	2,6x5mm
Spot diameter EMR	650µm	1200µm	830µm	1100µm	1400µm	2100µm	5000µm	2,6x5mm
Protection class	IP 67							
Vibration	15g/10Hz~1kHz						20g/10Hz~1kHz	
Shock	15g/6ms (IEC 68-2-29)							
Weight (without cable)	appr,83g						appr,130g	
Temperature stability	0,03% FSO/°C				0,08% FSO/°C			
Operation temperature	0 ~ +50°C							
Storage temperature	-20 ~ +70°C							
Output analogue	4 ~ 20mA (1 ~ 5V with cable PC 1402-3/U); free scalable within the nominal range							
Output digital	RS422/14bit							
Control I/O	1x open collector output (switching output, switch, error); 1x input (teach in, trigger); 1x laser on/off							
Supply	11 ~ 30VDC, 24VDC/50mA							
Controller	integrated signal processor							
Software	free setup and acquisition tool+ SDK (software development kit)							
Electromagnetic compatibility (EMC)	EN 61326-1:2006/EN 55011 Class B (Interface emission) EN 61326-1:2006/EN 61000-4-2:1995+ A1:1998+ A2:2001 (Interference resistance)							

FSO = Full scale output All specifications apply for a diffusely reflecting matt white ceramic target

SMR = Start of measuring range MMR = Midrange EMR = End of measuring range

레이저 변위 센서

optoNCDT 1402SC 시리즈
스테인리스 하우징 IP69K
(아날로그 & 디지털 출력)



- 센서 보호등급 IP69K
- 식품 산업 및 제조 공정에 적용
- 고압 및 방수요구 공정 적용
- 측정 범위 : 5mm ~ 600mm
- 측정 속도 : 1.5kHz까지 가능
- 아날로그 (U/I) 및 디지털 출력
- 컨트롤러 통합

MR	SMR	α	φ	ε	A	B
5	20	33,5	35,5	37,1	18,9	13,2
10	20	33,5	32,9	32,4	19,1	13,2
20	30	31,2	27,9	25,8	24,2	18,2
50	45	25,1	19,6	16,9	28,9	21,1
100	50	23,1	14,4	11,3	30,1	21,3
200	60	20,1	9,4	6,8	30,8	22,0
250VT	100	14,7	7,6	5,5	33,9	26,2
600	200	9,7	4,3	3	41,6	33,7

Model	ILD 1402-58C	ILD 1402-106C	ILD 1402-206C	ILD 1402-506C	ILD 1402-1006C	ILD 1402-2006C	ILD 1402-2506C	ILD 1402-6006C	
Measuring range	5mm	10mm	20mm	50mm	100mm	200mm	250mm	600mm	
Start of measuring range	SMR	20mm	20mm	30mm	45mm	50mm	60mm	100mm	
Midrange	MMR	22,5mm	25mm	40mm	70mm	100mm	160mm	225mm	
End of measuring range	EMR	25mm	30mm	50mm	95mm	150mm	260mm	350mm	
Linearity	5~9µm						5~18µm		7~36µm
	≤0,18% FSO						≤0,5% FSO		
Resolution	averaged with averaging factor 64		0,6µm		1µm		2µm		5µm
	dynamic		1~3µm		2~5µm		5~10µm		6~25µm
	1,5kHz		0,02~0,05% FSO		0,02~0,05% FSO		0,02~0,12% FSO		0,02~0,12% FSO
Measuring rate, programmable	1,5kHz: 1kHz: 750Hz: 375Hz: 50Hz								
Exposure rate, programmable	0,6ms: 1ms: 1,3ms: 2,6ms: 20ms								
Light source	semiconductor laser <1mW, 670nm(red)								
Laser safety class	class 2 IEC 60825-1 : 2001-11								
Spot diameter	SMR	110µm	110µm	210µm	1100µm	1400µm	2300µm	5000µm	
	MMR	380µm	650µm	530µm	110µm	130µm	2200µm	5000µm	
	EMR	650µm	1200µm	830µm	1100µm	1400µm	2100µm	5000µm	
Protection class	IP 69K								
Vibration	15g/10Hz~1kHz						20g/10Hz~1kHz		
Shock	15g/6ms (IEC 68-2-29)								
Weight (without cable)	appr.83g						appr.130g		
Temperature stability	0,03% FSO/°C				0,08% FSO/°C				
Operation temperature	0 ~ +50°C								
Storage temperature	-20 ~ +70°C								
Output	analogue	4 ~ 20mA (1 ~ 5V with cable PC 1402-3/U): free scalable within the nominal range							
	digital	RS232/14bit							
Control I/O	1x open collector output (switching output, switch, error): 1x input (teach in, trigger): 1x laser on/off								
Supply	11 ~ 30VDC, 24VDC/50mA								
Controller	integrated signal processor								
Software	free setup and acquisition tool + SDK (software development kit)								
Electromagnetic compatibility (EMC)	EN 61326-1:2006/EN 55011 Class B (Interface emission) EN 61326-1:2006/ EN 61000-4-2:1995+A1:1998+A2:2001 (Interference resistance)								

FSO = Full scale output All specifications apply for a diffusely reflecting matt white ceramic target

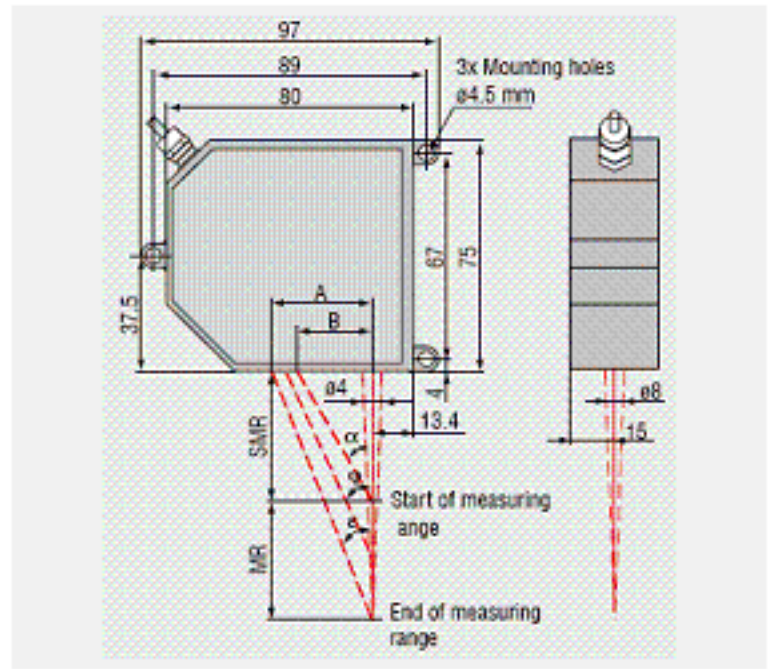
SMR= Start of measuring range MMR = Midrange EMR = End of measuring range

레이저 변위 센서

optoNCDT 1700 시리즈 (컨트롤러를 내장한 지능형 센서)

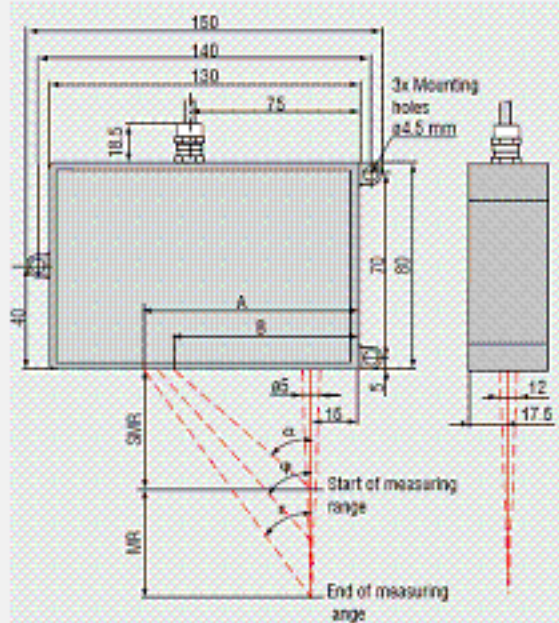


- 통합 컨트롤러와 콤팩트한 디자인
- 측정 범위 : 2mm ~ 750mm
- 측정 속도 : 2500Hz
- 아날로그 (V/I) 및 디지털 출력
- RTSC (실시간 표면 보정)
- 물체에 상관없이 정밀한 측정



optoNCDT 1700 (2/10/20/50/100/200/250VT mm) ↑

MR	SMR	α	φ	ε	A	B
2	24	35°	40°	44,8°	25,8	16,8
10	30	34,3°	35,2°	35,6°	28,7	20,5
20	40	28,8°	27,5°	26,7°	30,1	22,0
50	45	26,5°	23,0°	18,3°	31,5	22,5
100	70	19,0°	15,4°	10,9°	32,6	24,1
200	70	19,0°	9,78°	6,97°	33,1	24,1
250VT	70	19,0°	8,4°	6,0°	33,5	24,1
40	175	22,1°	21,9°	21,8°	101	86
500	200	19,3°	9,8°	7,0°	101	85
750	200	19,3°	7,7°	5,0°	101	85



optoNCDT 1700 (40/500/750 mm) ↑

Model	ILD	1700-2	1700-10	1700-20	1700-40	1700-50	1700-100	1700-200	1700-250VT	1700-500	1700-750
Measuring range		2mm	10mm	20mm	40mm	50mm	100mm	200mm	250mm	500mm	750mm
Start of measuring range	SMR	24mm	30mm	40mm	175mm	45mm	70mm	70mm	70mm	200mm	200mm
Midrange	MMR	25mm	35mm	50mm	195mm	70mm	120mm	170mm	195mm	450mm	575mm
End of measuring range	EMR	26mm	40mm	60mm	215mm	95mm	170mm	270mm	320mm	700mm	950mm
Linearity	FSO	≤0,1%	≤0,08%					≤0,1%	≤0,25%	≤0,08%	≤0,1%
Resolution(at 2,5kHz without averaging)		0,1μm	0,5μm	1,5μm	4μm	3μm	6μm	12μm	50μm	30μm	50μm
Measuring rate		2,5kHz/1,25kHz/625Hz/312,5Hz (adjustable)									
Light source		semiconductor laser<1mW, 670nm (red)									
Permissible ambient light at 2,5kHz		10,000 lx							15,000 lx	10,000 lx	
Laser safety class		class 2 acc, DIN EN 60825-1:2008-05									
Spot diameter	SMR	80μm	110μm	320μm	230μm	570μm	740μm	1300μm	1500μm	1500μm	1500μm
	MMR	35μm	50μm	45μm	210μm	55μm	60μm	1300μm	1500μm	1500μm	1500μm
	EMR	80μm	110μm	320μm	230μm	570μm	700μm	1300μm	1500μm	1500μm	1500μm
Temperature stability*		0,025% FSO/°C	0,01% FSO/°C						0,025% FSO/°C	0,01% FSO/°C	
Operation temperature		0 ~ +50°C							0 ~ +55°C	0 ~ +50°C	
Storage temperature		-20 ~ +70°C									
Output	measurement	selectable: 4 ~ 20mA/0 ~ 10V/RS422/USB (optional with cable PC1700-3/USB)									
	switching outputs	1×error or 2×limit (each programmable)									
Switch Input		laser ON-OFF/zero									
Operation		via touch screen on sensor or via PC with ILD 1700 tool									
Power supply		24VDC (11 ~ 30VDC), max,150mA									
Electromagnetic compatibility (EMC)		EN 61000-6-3 EN61000-6-2									
Sensor cable length (with connector)		0,25m (integrated cable with connector) option : 3m or 10m									
Synchronisation		possible for simultaneous or alternating measurements									
Protection class		IP 65									
Vibration		2g/20 ~ 500Hz									
Shock		15g/6ms									
Weight (with 0,25m cable)		~ 500g			~ 600g		~ 550g			~ 600g	

FSO = Full Scale Output All specifications apply for a diffusely reflecting white ceramic target

*based on digital output

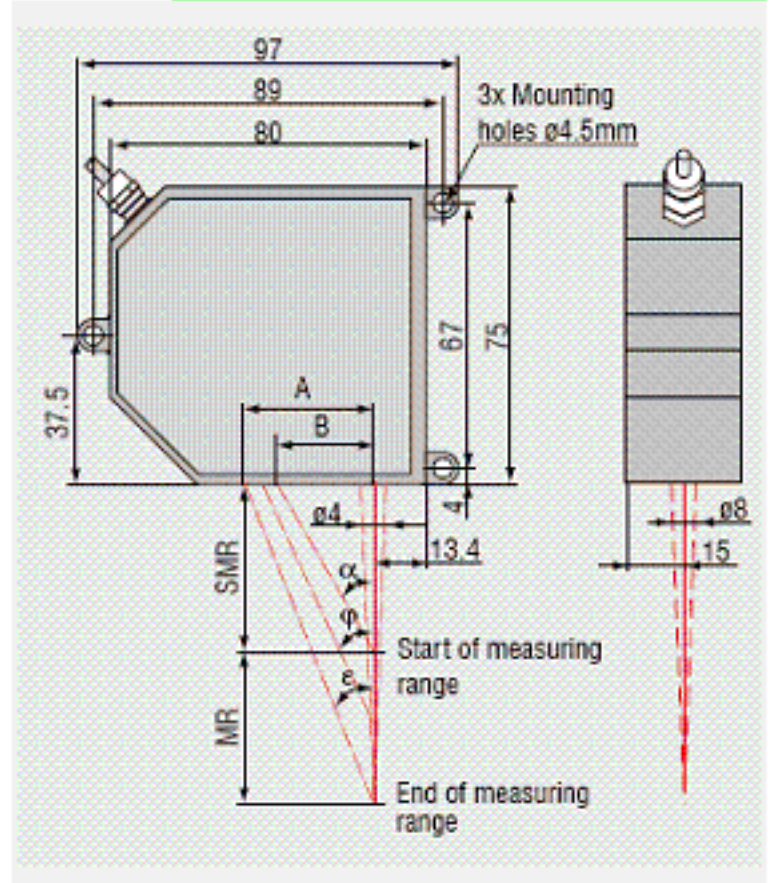
SMR = Start of measuring range MMR = Midrange EMR = End of measuring range

레이저 변위 센서

optoNCDT 1700LL 시리즈



- 광택이 있는 금속 표면에 적합한 센서
- 거칠거나 구조화된 표면 측정
- 측정 범위 : 2mm ~ 50mm
- 통합 컨트롤러와 콤팩트한 디자인
- 아날로그 (U/I) 및 디지털 출력
- RTSC (실시간 표면 보정)



optoNCDT 1700LL (2/10/20/50 mm) ↑

MR	SMR	α	ϕ	ϵ	A	B
2	24	35°	40°	44,8°	25,8	16,8
10	30	34,3°	35,2°	35,6°	28,7	20,5
20	40	28,8°	27,5°	26,7°	30,1	22,0
50	45	26,5°	23,0°	18,3°	31,5	22,5

Model	ILD1700-2LL	ILD1700-10LL	ILD1700-20LL	ILD1700-50LL
Measuring range	2mm	10mm	20mm	50mm
Start of measuring range	SMR	24mm	30mm	40mm
Midrange	MMR	25mm	35mm	50mm
End of measuring range	EMR	26mm	40mm	60mm
Linearity	FSO	2μm	8μm	16μm
		≤0,1%	≤0,08%	
Resolution ¹⁾ (at 2,5kHz without averaging)	0,1μm	0,5μm	1,5μm	3μm
Measuring rate	2,5kHz/1,25kHz/625Hz/312,5Hz (adjustable)			
Light source	semiconductor laser<1mW, 670nm (red)			
Permissible ambient light at 2,5kHz	10,000lx			
Laser safety class	class 2 acc, DIN 60825-1:2008-05			
Spot diameter	SMR	85×240μm	120×405μm	185×485μm
	MMR	24×280μm	35×585μm	55×700μm
	EMR	64×400μm	125×835μm	195×1200μm
Temperature stability ²⁾	0,025% FSO/°C	0,01% FSO/°C		
Operation temperature	0 ~ +50°C			
Storage temperature	-20 ~ +70°C			
Output	measurements	selectable:4 ~ 20mA/0 ~ 10V/RS422/USB (optional with cable PC1700-3/USB)		
	switching outputs	1×error or 2×limit (each programmable)		
Switch Input	laser ON-OFF/zero			
Operation	via touch screen on sensor or via PC with ILD1700 tool			
Power supply	24VDC (11 ~ 30VDC), max,150mA			
Electromagnetic compatibility (EMC)	EN 61000-6-3 ; EN 61000-6-2			
Sensor cable length (with connector)	0,25m (integrated cable with connector) option : 3m or 10m			
Synchronization	possible for simultaneous or alternating measurements			
Protection class	IP 65			
Vibration	2g/20 ~ 500Hz			
Shock	15g/6ms			
Weight (with 0,25m cable)	~ 550g			

FSO = Full Scale Output All specifications apply for a diffusely reflecting white ceramic target

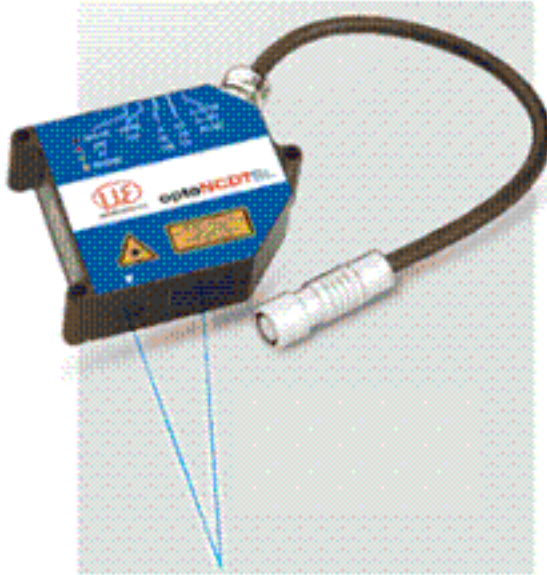
¹⁾ for measurements against high glossy surfaces (targets), resolution depends on the material

²⁾ based on digital output

SMR = Start of measuring range MMR = Midrange EMR = End of measuring range

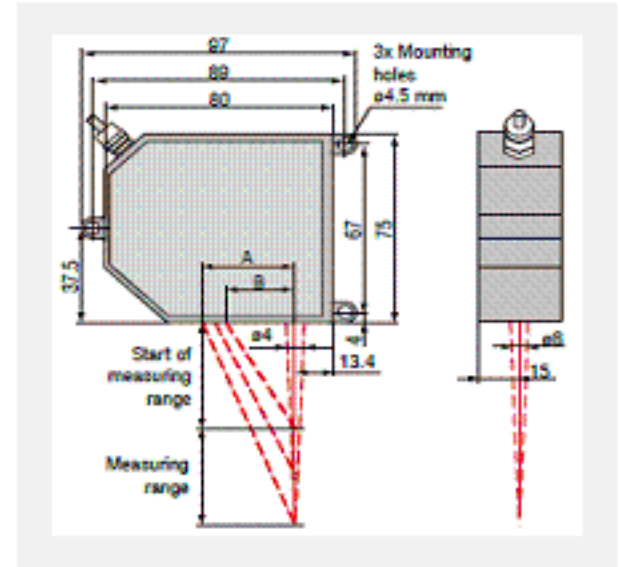
블루레이저 변위 센서

optoNCDT 1700BL 시리즈

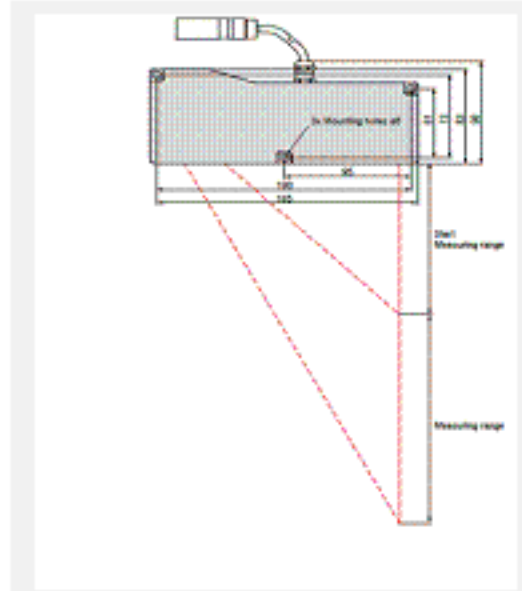


MR	SMR	A	B
20	40	30.1	22.0
200	100	33.1	24.1
500	200	101	85
750	200	101	85

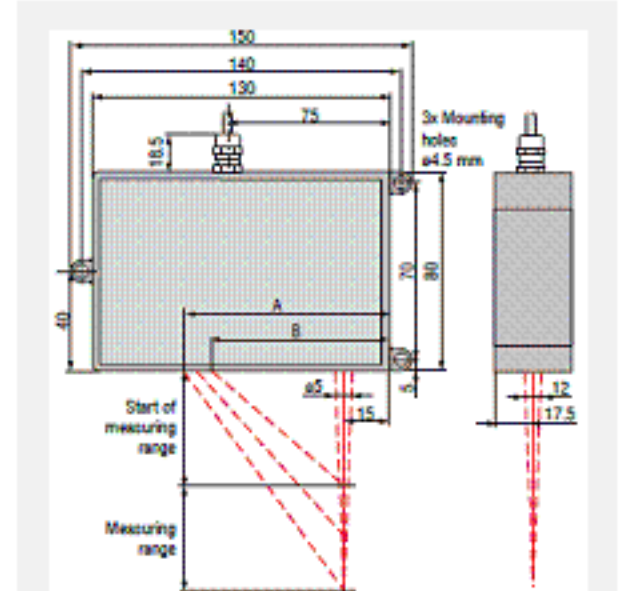
optoNCDT 1700BL (20/200 mm) ↓



optoNCDT 1700BL(50/1000 mm) ↓



optoNCDT 1700BL(500/750 mm) ↓



- 레이저 파장 405nm의 블루 기술
- 물체 온도 1600도까지 적용
- 측정 범위 : 20mm ~ 1000mm
- 측정 속도 : 2500Hz
- 통합 컨트롤러와 콤팩트한 디자인
- 아날로그 (V/I) 및 디지털 출력
- RTSC (실시간 표면 보정)

Model		ILD 1700-20BL	ILD 1700-200BL	ILD 1700-500BL	ILD 1700-750BL	ILD 1700-50BL	ILD 1700-1000BL
Measuring range		20mm	200mm	500mm	750mm	50mm	1000mm
Start of measuring range	SMR	40mm	100mm	200mm	200mm	550mm	1000mm
Midrange	MMR	50mm	200mm	450mm	575mm	575mm	1500mm
End of measuring range	EMR	60mm	300mm	700mm	950mm	600mm	2000mm
Linearity		16µm	200µm	400µm	750µm	50µm	1mm
	FSO	≤ ±0,08%	≤ ±0,1%	≤ ±0,08%	≤ ±0,1%	≤ ±0,1%	≤ ±0,1%
Resolution(at 2,5kHz without averaging)		1,5µm	12µm	30µm	50µm	5µm	100µm
Measuring rate		2,5kHz/1,25kHz/625Hz/312,5Hz (adjustable)					
Light source		semiconductor laser <1mW, 405nm (blue violet)					
Permissible ambient light at 2,5kHz		10,000 lx					
Laser safety class		class 2 IEC 60825-1:2008-05					
Spot diameter	SMR	320µm	1300µm	1500µm	1500µm	400x500µm	2,5x5mm
	MMR	45µm	1300µm	1500µm	1500µm	400x500µm	2,5x5mm
	EMR	320µm	1300µm	1500µm	1500µm	400x500µm	2,5x5mm
Temperature stability*		0,01% FSO/°C					
Operation temperature		0 ~ +50°C					
Storage temperature		-20 ~ +70°C					
Output	measurement	selectable: 4 ~ 20mA/0 ~ 10V/RS422/USB (option with cable PC1700-3/USB)					
	switching outputs	1 × error or 2 × limit (each programmable)					
Switch Input		laser ON-OFF/zero					
Operation		via touch screen on sensor or via PC with ILD 1700 tool					
Power supply		24VDC (11 ~ 30VDC), max,150mA					
Sensor cable length (with connector)		standard 0,25m integrated/optional : extension 3m or 10m					
Synchronisation		possible for simultaneous or alternating measurements					
Protection class		IP 65					
Vibration		2g/20 ~ 500Hz					
Shock		15g/6ms					
Weight (with 0,25m cable)		~ 550g	~ 550g	~ 600g	~ 600g	~ 800g	~ 800g

FSO = Full Scale Output All specifications apply for a diffusely reflecting white ceramic target

*based on digital output SMR = Start of measuring range MMR = Midrange EMR = End of measuring range

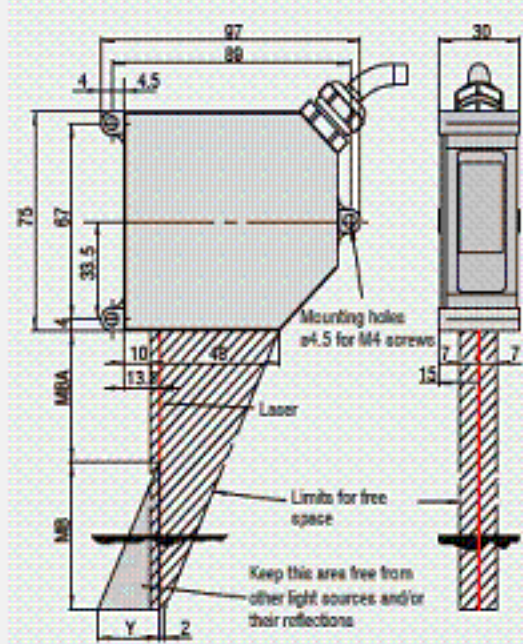
레이저 변위 센서

optoNCDT 2300 시리즈

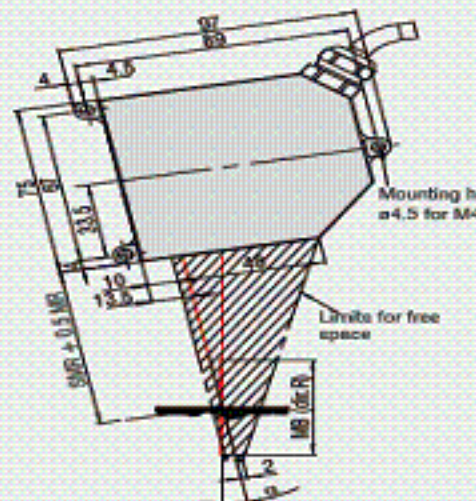


난반사 형식		
MR	SMR	Y
2	24	1.5
10	30	6.5
20	40	10.0
50	45	23.0
100	70	33.5
정반사 형식		
MR	SMR+ 0.5MR	α
2	25	20.5°
10	35	17.5°
20	50	13.8°
optoNCDT 2300-200		
α	φ	ε
19.0°	9.78°	6.97°

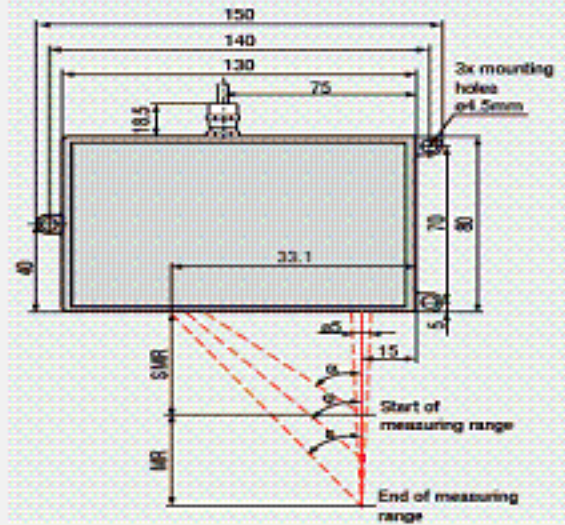
optoNCDT 2300-2 ~ 100 (난반사) ↓



optoNCDT 2300-2 ~ 20(정반사) ↓



optoNCDT 2300-200 ↓



- 측정범위 20mm까지 정반사, 난반사 듀얼 측정 가능
- 레이저 파장 405nm의 블루 기술
- 물체 온도 1600도까지 적용
- 측정 범위 : 2mm ~ 200mm
- 측정 속도 : 50,000Hz
- 통합 컨트롤러와 콤팩트한 디자인
- 아날로그 (V/I) 및 디지털 출력
- RTSC (실시간 표면 보정)

Model		ILD 2300-2	ILD 2300-10	ILD 2300-20	ILD 2300-50	ILD 2300-100	ILD 2300-200
Measuring range 1)		2(2)mm	10(5)mm	20(10)mm	50(25)mm	100(50)mm	200(100)mm
Start of measuring range	SMR	24(24)mm	30(35)mm	40(50)mm	45(70)mm	70(120)mm	130(230)mm
Midrange	MMR	25mm	35(37.5)mm	50(55)mm	70(82.5)mm	120(145)mm	230(280)mm
End of measuring range	EMR	26(26)mm	40(40)mm	60(60)mm	95(95)mm	170(170)mm	330(330)mm
Linearity	FSO	0.6µm	2µm	4µm	10µm	20µm	60µm
Resolution(20kHz)	0.0015% FSO	≤ ± 0.03%	≤ ± 0.02%				≤ ± 0.03%
Measuring rate		adjustable via software 49,02(with reduced measuring range)/30/20/10/5/205/1.5kHz					
Light source		semiconductor laser <1mW, 405nm (blue violet)					
Permissible ambient light		10,000 ~ 40,000lx					
Spot diameter	SMR	80µm	110µm	160µm	215µm	350µm	1300µm
	MMR	23x23µm	32x45µm	46x45µm	70x70µm	130µm	1300µm
	EMR	35x85µm	110x160µm	140x200µm	255x350µm	350µm	1300µm
Light source		semiconductor laser <1mW/ 670nm(red)					
Protection class		IP 65					
Operation temperature		0 ~ +50 °C					
Storage temperature		-20 ~ +70 °C					
Inputs/ Outputs		Ethernet/Ethercat/RS422 Analog output via CSP2008					
Inputs		laser on/off synchronization/ trigger input					
Power supply		24VDC (11 ~ 30VDC); PV <3W					
LED		Status/ Power/Ethernet/ Ethercat					
Sensor cable	Standard	0.25m (with cable connector)					
	Option	3/6/9m with Sub D 15 pin connector					
Electromagnetic compatibility (EMC)		EN 61326-1:2006-10/ DIN EN 55011:2007-11(group 1, class B)/ EN 61000-6-2:2006-03					
Vibration		2g/20 ~ 500Hz					
Shock		15g/6ms/3 axes					

FSO = Full Scale Output All specifications apply for a diffusely reflecting white ceramic target
 SMR = Start of measuring range MMR = Midrange EMR = End of measuring range
 1) Numbers in brackets refer to full measurement rate 49,02kHz

레이저 변위 센서

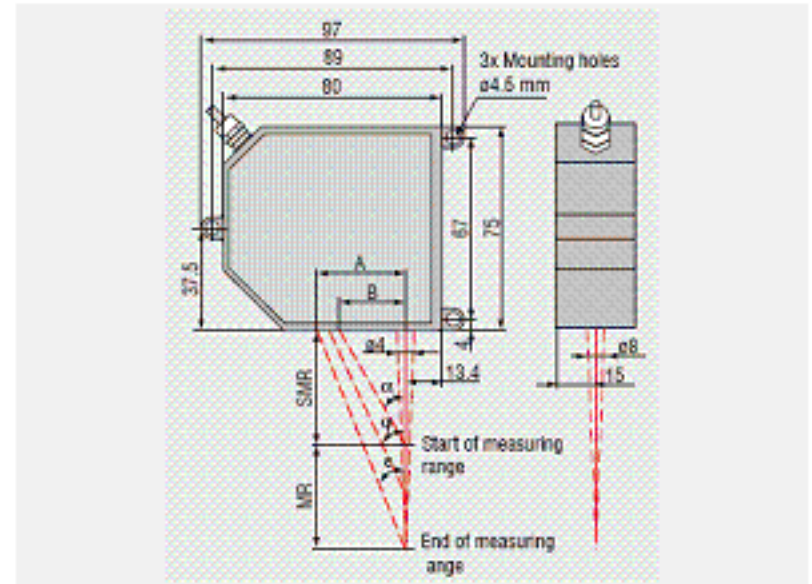
optoNCDT 2200 시리즈



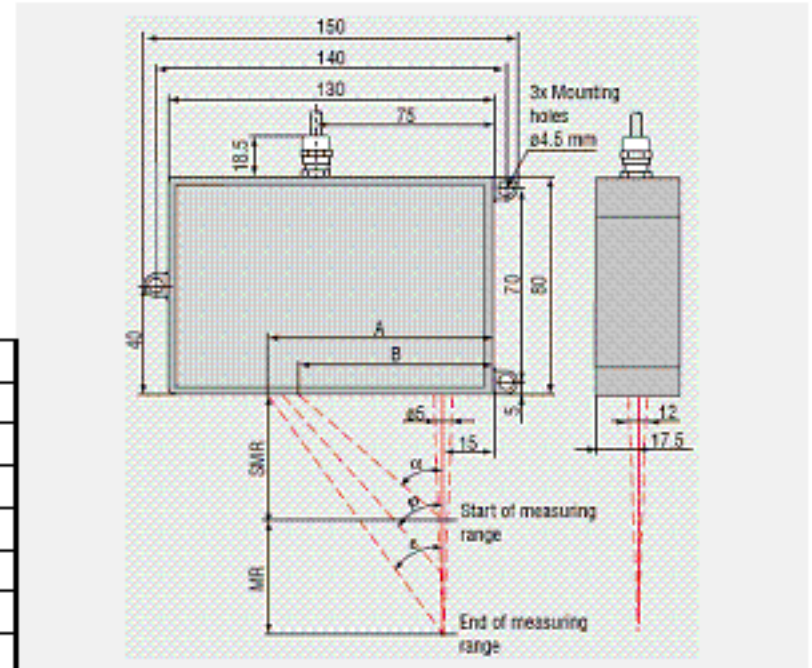
- 센서 헤드 및 별도의 컨트롤러
- 측정 범위 : 2mm ~ 200mm
- 측정 속도 : 최대 10kHz
- 아날로그 및 디지털 출력
- RTSC (실시간 표면 보정)
- 모든 물체 적용 가능
- 간편한 설치

MR	SMR	α	ϕ	ϵ	A	B
2	24	35°	40,0°	44,8°	25,8	16,8
10	30	34,3°	35,2°	35,6°	28,7	20,5
20	40	28,8°	27,5°	26,7°	30,1	22
50	45	26,5°	23,0°	18,3°	31,5	22,5
100	70	19,0°	15,4°	10,9°	32,6	24,1
40	175	22,1°	21,9°	21,8°	101	86
200	130	25,1°	16,7°	13,1°	91,6	76

optoNCDT 2200(2/10/20/50/100mm) ↓



optoNCDT 2200(40/200mm) ↓



Model	ILD2200-2	ILD-2200-10	ILD2200-20	ILD2200-40	ILD2200-50	ILD2200-100	ILD2200-200
Measuring range	2mm	10mm	20mm	40mm	50mm	100mm	200mm
Start of measuring range	SMR	24mm	30mm	40mm	175mm	45mm	70mm
Midrange	MMR	25mm	35mm	50mm	195mm	70mm	120mm
End of measuring range	EMR	26mm	40mm	60mm	215mm	95mm	170mm
Linearity		1µm	3µm	6µm	12µm	15µm	30µm
		≤0,05% FSO	≤0,03% FSO				
Resolution (at 10kHz without averaging)		0,03µm	0,15µm	0,3µm	0,6µm	0,8µm	1,5µm
Measuring rate		10kHz					
Permissible ambient light		30000lx					
Spot diameter	SMR	80µm	110µm	160µm	230µm	215µm	350µm
	MMR	35µm	50µm	60µm	210µm	80µm	130µm
	EMR	80µm	110µm	160µm	230µm	215µm	350µm
Light source		semiconductor laser<1mW, 670nm (red)					
Laser safety class		class 2 acc, DIN EN 60825-1/A1 12,99/IEC 825-1/A1 12,99/FDA					
Protection class		sensor : IP 65/controller : IP 50					
Temperature stability		0,025% FSO/°C	0,01% FSO/°C				
Operation temperature		0 ~ +50°C					
Storage temperature		-20 ~ +70°C					
Output		analogue: ± 5V digital : RS 422/691,2kBaud					
Power supply		24VDC (± 15%), max,500mA					
Sensor cable length		standard:2m-integrated option:5m/10m					
Controller		functions:auto zero/signal averaging dimensions:143mm×145×52mm - without mounting clips					
Electromagnetic compatibility (EMC)		EN 55011/12,1998 and EN 50082-2/02,1996					
Vibration		2g/20 ~ 500Hz					
Shock		15g/6ms/3axis					
Weight	sensor		~ 550g		~ 600g	~ 550g	~ 600g
	controller				~ 1000g		

FSO = Full Scale Output All specifications are valid for polished and planar surfaces,

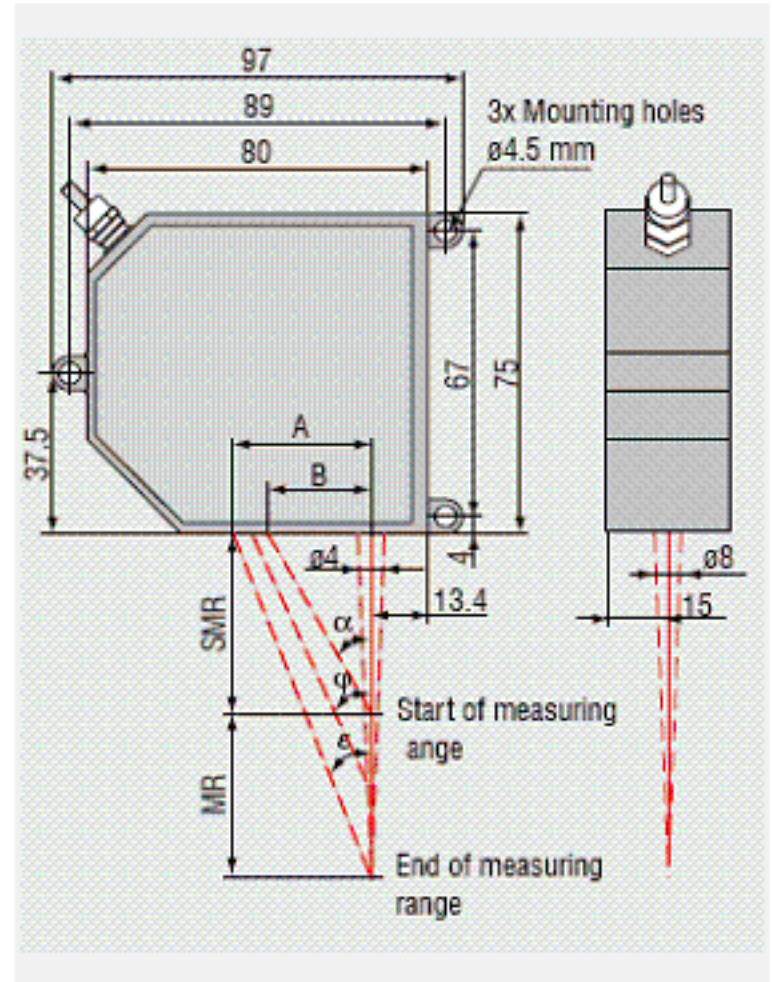
SMR = Start of measuring range MMR = Midrange EMR = End of measuring range

레이저 변위 센서

optoNCDT 2200LL 시리즈



- 광택성 금속 표면에서 정밀한 측정 가능
- 거칠거나 구조화된 표면 평균
- 측정 범위 : 2mm ~ 50mm
- 측정 속도 : 10,000Hz
- 실시간 표면 보정 (RTSC)
- 아날로그 및 디지털 출력
- 간편한 설치



MR	SMR	α	ϕ	ϵ	A	B
2	24	35°	40,0°	44,8°	25,8	16,8
10	30	34,3°	35,2°	35,6°	28,7	20,5
20	40	28,8°	27,5°	26,7°	30,1	22
50	45	26,5°	23,0°	18,3°	31,5	22,5

Model	ILD2200-2LL	ILD2200-10LL	ILD2200-20LL	ILD2200-50LL
Measuring range	2mm	10mm	20mm	50mm
Start of measuring range	SMR	24mm	30mm	45mm
Midrange	MMR	25mm	35mm	70mm
End of measuring range	EMR	26mm	40mm	95mm
Linearity	1µm	3µm	6µm	15µm
	≤0,05% FSO		≤0,03% FSO	
Resolution ¹⁾ (at 10kHz without averaging)	0,03µm	0,15µm	0,3µm	0,8µm
	0,0015% FSO			
Measuring rate	10kHz			
Permissible ambient light	30000lx			
Spot diameter	SMR	85 × 240µm	120 × 405µm	185 × 485µm
	MMR	24 × 280µm	35 × 585µm	55 × 700µm
	EMR	64 × 400µm	125 × 835µm	195 × 1200µm
Light source	semiconductor laser <1mW, 670nm (red)			
Laser safety class	class 2 acc, DIN EN 60825-1/A1 1299/IEC 825-1/A1 12,99/FDA			
Protection class	sensor : IP 65/controller : IP 50			
Temperature stability	0,025% FSO/°C	0,01% FSO/°C		
Operation temperature	0 ~ +50°C			
Storage temperature	-20 ~ +70°C			
Output	analogue: ± 5V digital : RS 422/691, 2kB명			
Power supply	24VDC (± 15%), max 500mA			
Sensor cable length	standard: 2m - integrated option: 5m/10m			
Controller	functions : auto zero/signal averaging dimensions: 143mm × 145mm × 52mm - without mounting clips			
Electromagnetic compatibility (EMC)	EN 55011/12, 1998 and EN 50082-2/02, 1996			
Vibration	2g/20 ~ 500Hz			
Shock	15g/6ms/3axis			
Weight	sensor: ~ 550g controller: ~ 1000g			

FSO = Full Scale Output SMR = Start of measuring range MMR = Midrange EMR = End of measuring range

All specifications apply for a diffusely reflecting white ceramic target

¹⁾ for measurements against high glossy surfaces (targets), resolution depends on the material

레이저 변위 센서

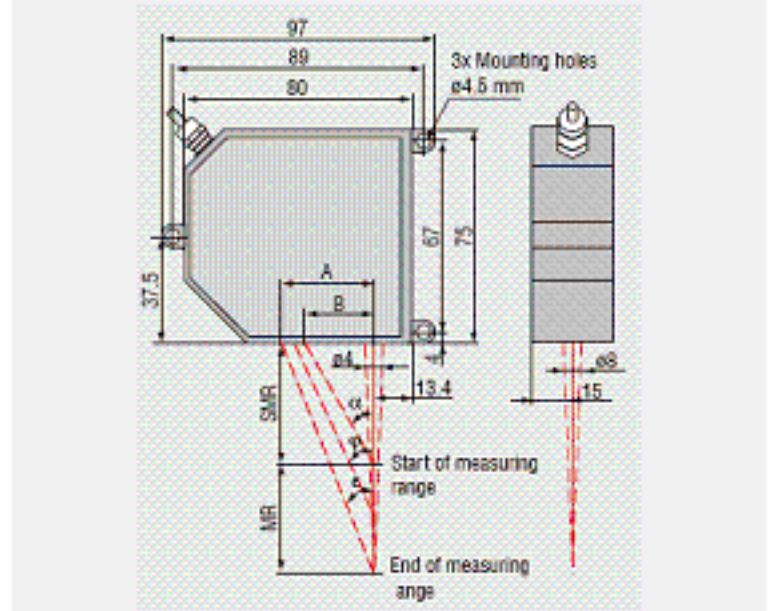
optoNCDT 2220 시리즈



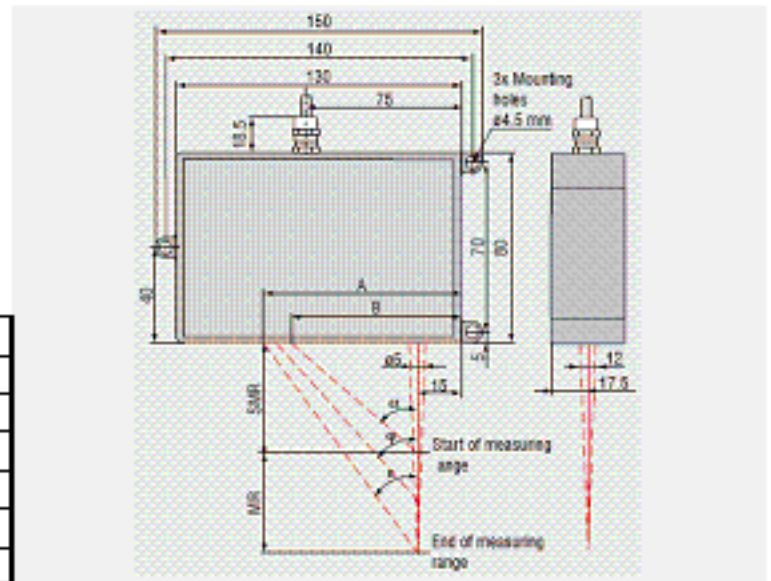
- 센서 헤드 및 별도의 컨트롤러
- 측정 범위 : 2mm ~ 200mm
- 측정 속도 : 최대 10,000Hz
- 아날로그 및 디지털 출력
- RTSC (실시간 표면 보정)
- 모든 물체에 적용 가능
- 간편한 설치

MR	SMR	α	ϕ	ϵ	A	B
2	24	35°	40,0°	44,8°	25,8	16,8
10	30	34,3°	35,2°	35,6°	28,7	20,5
20	40	28,8°	27,5°	26,7°	30,1	22
50	45	26,5°	23,0°	18,3°	31,5	22,5
100	70	19,0°	15,4°	10,9°	32,6	24,1
200	130	25,1°	16,7°	13,1°	91,6	7

optoNCDT 2220(2/10/20/50/100mm) ↓



optoNCDT 2220(200mm) ↓



Model	ILD2220-2	ILD2220-10	ILD2220-20	ILD2220-50	ILD2220-100	ILD2220-200
Measuring range	2mm	10mm	20mm	50mm	100mm	200mm
Start of measuring range	SMR	24mm	30mm	40mm	45mm	70mm
Midrange	MMR	25mm	35mm	50mm	70mm	120mm
End of measuring range	EMR	26mm	40mm	60mm	95mm	170mm
Linearity	1μm		3μm	6μm	15μm	30μm
	≤0,05% FSO		≤0,03% FSO			
Resolution (at 20kHz without averaging)	0,03μm	0,15μm	0,3μm	0,8μm	1,5μm	3μm
Measuring rate	20kHz					
Permissible ambient light	30000lx					
Spot diameter	SMR	80μm	110μm	160μm	215μm	350μm
	MMR	35μm	50μm	60μm	80μm	130μm
	EMR	80μm	110μm	160μm	215μm	350μm
Light source	semiconductor laser<1mW, 670nm (red)					
Laser safety class	class 2 acc, DIN EN 60825-1/A1 12,99/IEC 825-1/A1 12,99/FDA					
Protection class	sensor : IP 65/controller : IP 50					
Temperature stability	0,025% FSO/°C	0,01% FSO/°C				
Operation temperature	0 ~ +50°C					
Storage temperature	-20 ~ +70°C					
Output	analogue : ± 5V digital : RS 422/691/2kBaud					
Power supply	24VDC (± 15%), max 500mA					
Sensor cable length	standard : 2m - integrated option : 5m/10m					
Controller	functions : auto zero/signal averaging dimensions : 143mm×145mm×52mm - without mounting clips					
Electromagnetic compatibility (EMC)	EN 55011/12,1998 and EN 50082-2/02,1996					
Vibration	2g/20 ~ 500Hz					
Shock	15g/6ms/3axis					
Weight	sensor	~ 550g				~ 600g
	controller	~ 1000g				

FSO = Full Scale Output

All specifications apply for a diffusely reflecting matt white ceramic target

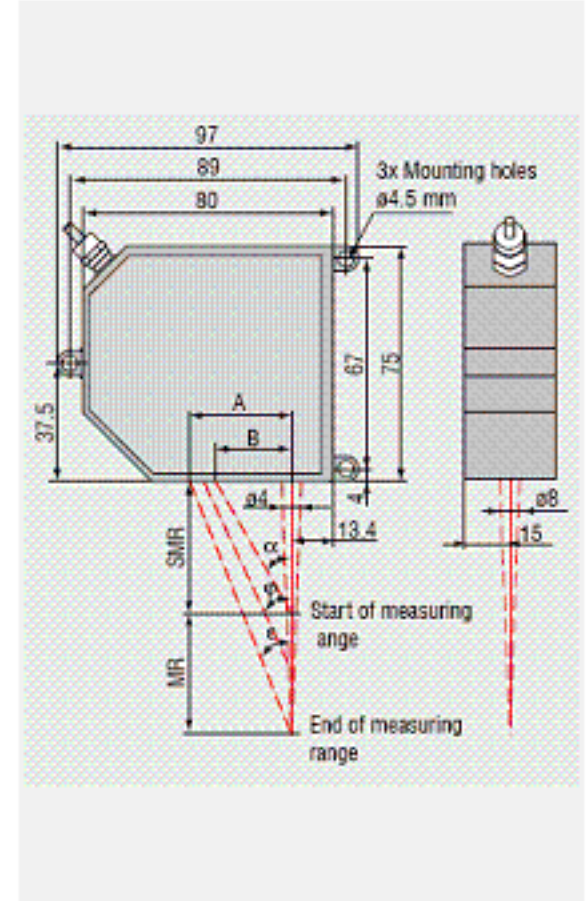
SMR = Start of measuring range MMR = Midrange EMR = End of measuring range

레이저 변위 센서

optoNCDT 2220LL 시리즈



- 최대 속도와 함께 광택이 있는 금속 표면을 정밀하게 측정
- 거칠거나 구조화된 표면을 측정
- 총 작동범위 이상의 측정 속도 : 20,000Hz
- 측정 범위 : 2mm ~ 50mm
- 실시간 표면 보정 (RTSC)
- 아날로그 및 디지털 출력
- 간편한 설치



MR	SMR	α	ϕ	ϵ	A	B
2	24	35°	40,0°	44,8°	25,8	16,8
10	30	34,3°	35,2°	35,6°	28,7	20,5
20	40	28,8°	27,5°	26,7°	30,1	22
50	45	26,5°	23,0°	18,3°	31,5	22,5

Model	ILD2220-2LL	ILD2220-10LL	ILD2220-20LL	ILD2220-50LL
Measuring range	2mm	10mm	20mm	50mm
Start of measuring range	SMR	24mm	30mm	40mm
Midrange	MMR	25mm	35mm	50mm
End of measuring range	EMR	26mm	40mm	60mm
Linearity		1µm	3µm	6µm
		≤0,05% FSO		
Resolution ¹⁾ (at 10kHz without averaging)		0,03µm	0,15µm	0,3µm
		0,0015% FSO		
Measuring rate	20kHz			
Permissible ambient light	30000lx			
Spot diameter	SMR	85×240µm	120×405µm	185×485µm
	MMR	24×280µm	35×585µm	55×700µm
	EMR	64×400µm	125×835µm	195×1200µm
Light source	semiconductor laser<1mW, 670nm (red)			
Laser safety class	class 2 acc, DIN EN 60825-1/A1 1299/IEC 825-1/A1 12,99/FDA			
Protection class	sensor : IP 65/controller : IP 50			
Temperature stability	0,025% FSO/°C	0,01% FSO/°C		
Operation temperature	0 ~ +50°C			
Storage temperature	-20 ~ +70°C			
Output	analogue: ± 5V digital : RS 422/691,2kB명			
Power supply	24VDC (± 15%), max 500mA			
Sensor cable length	standard:2m - integrated option:5m/10m			
Controller	functions : auto zero/signal averaging dimensions:143mm×145mm×52mm - without mounting clips			
Electromagnetic compatibility (EMC)	EN 55011/12,1998 and EN 50082-2/02,1996			
Vibration	2g/20 ~ 500Hz			
Shock	15g/6ms/3axis			
Weight	sensor: ~ 550g controller: ~ 1000g			

FSO = Full Scale Output

All specifications apply for a diffusely reflecting matt white ceramic target

¹⁾ for measurements against high glossy surfaces (targets), resolution depends on the material

SMR = Start of measuring range MMR = Midrange EMR = End of measuring range

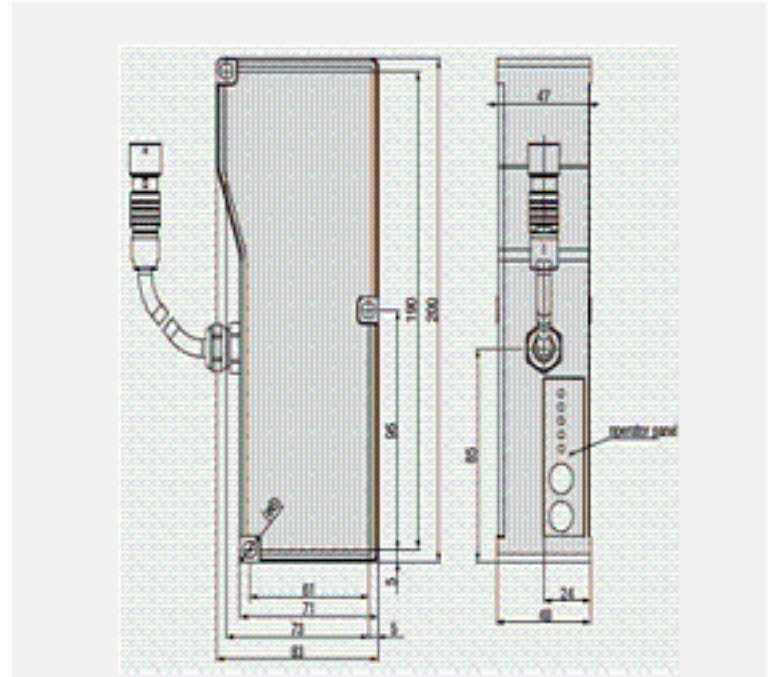
레이저 변위 센서

optoNCDT 1710-100mm) ↓

optoNCDT 1710-1000



- 센서 헤드 및 별도의 컨트롤러
- 측정 범위 : 1000mm
- 측정 속도 : 최대 2500Hz
- 아날로그 및 디지털 출력
- RTSC (실시간 표면 보정)
- 모든 물체에 적용 가능
- 간편한 설치



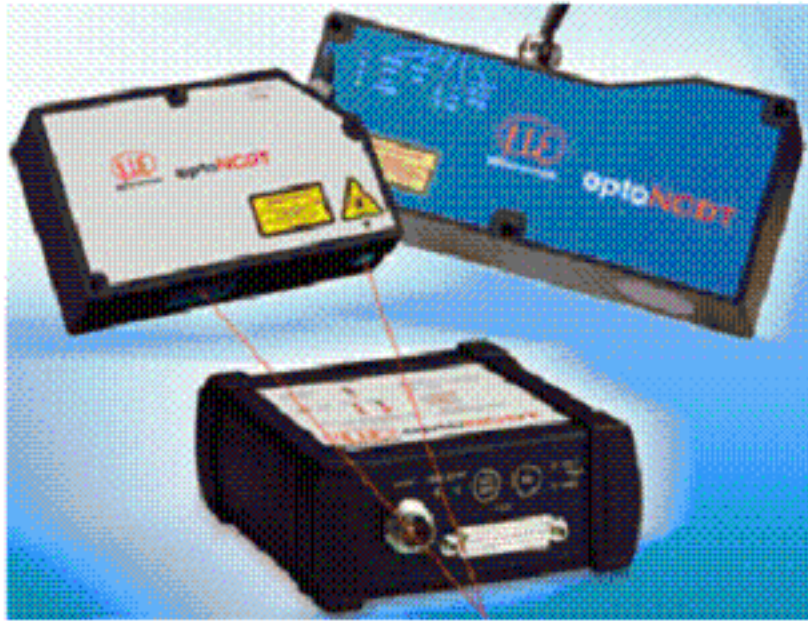
Model	ILD1710 - 1000	
Measuring range	1000mm	
Start of measuring range	SMR	1000mm
Midrange	MMR	1500mm
End of measuring range	EMR	2000mm
Linearity	≤ ±0,1% FSO	±1mm
Resolution (at 2.5kHz without averaging)	100µm	
Measuring rate	2,5kHz/1,25kHz/625Hz/321,5Hz (adjustable)	
Permissible ambient light	10,000lx	
Spot diameter	SMR	2,5 x 5 mm
	MMR	2,5 x 5 mm
	EMR	2,5 x 5 mm
Light source	semiconductor laser <1mW, 670nm (red)	
Laser safety class	class 2 IEC 60825-1:2008-05	
Protection class	IP 65	
Temperature stability	0,01% FSO/°C	
Operation temperature	0 ~ +50°C	
Storage temperature	-20 ~ +70°C	
Output	measurements	switchable 4 ~ 20mA/ 0 ~ 10V/ RS422/ USB (optional via cable PC1700-3/USB)
	switching outputs	1 x error or 2x limit values (configurable)
Power supply	24VDC (11 ~ 30 VDC), max.150mA	
Sensor cable	standard 0,25m integrated	
Operation	via keypad directly on the sensor and/or via PC with ILD1700 Tool	
Switching input	Laser ON-OFF/ Zero	
Synchronization	possible for simultaneous or alternating measurements	
Electromagnetic compatibility (EMC)	EN 61000-6-3 and EN 61000-6-2	
Vibration	2g/20 ~ 500Hz	
Shock	15g/6ms	
Weight	~ 800g	

FSO = Full Scale Output All specifications apply for a diffusely reflecting matt white ceramic target

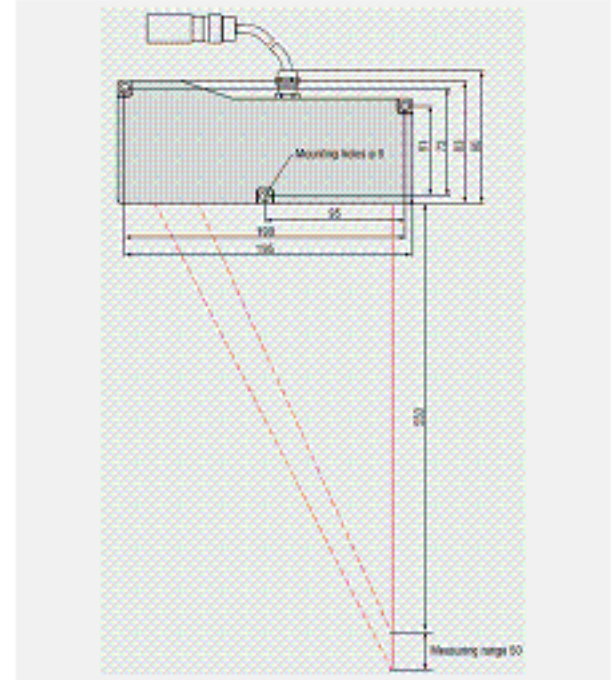
SMR = Start of measuring range MMR = Midrange EMR = End of measuring range

레이저 변위 센서

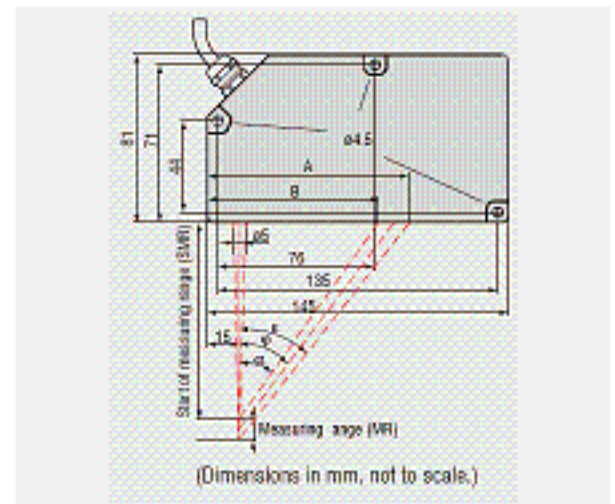
optoNCDT 1710-50 / 2210 시리즈



optoNCDT 1810-50 ↓



optoNCDT 2210 ↓



- 측정 범위 : 10mm ~ 50mm
- 측정 속도 : 최대 10kHz
- 실시간 표면 보정 (RTSC)
- 아날로그 및 디지털 출력
- 센서 헤드, 컨트롤러 분리형(2210)
- 센서 헤드, 컨트롤러 통합형(1710)
- 모든 물체에 적용 가능
- 간편한 설치

Model		ILD1710-50	ILD2210-10	ILD2210-20
Measuring range		50mm	10mm	20mm
Start of measuring range	SMR	550mm	95mm	90mm
Midrange	MMR	575mm	100mm	
End of measuring range	EMR	600mm	105mm	110mm
Linearity		50µm	3µm	6µm
		≤0,1% FSO	≤0,03% FSO	
Resolution dynamic ¹⁾		5µm	0,5µm	1µm
		0,01% FSO	0,005% FSO	
Measuring range		2,5kHz	10kHz	
Permissible ambient light		10000lx	30000lx	
Spot diameter	SMR	400×500µm	130µm	200µm
	MMR	400×500µm	60µm	60µm
	EMR	400×500µm	130µm	200µm
Light source		semiconductor laser<1mW, 670nm (red)		
Laser safety class		class 2 acc DIN EN 60825-1 : 2001-11/class 2 (IEC 60825-1) class II (FDA)		
Protection class		sensor : IP 65 controller : IP 50		
Temperature stability		0,01% FSO/°C		
Operation temperature		0 ~ 50°C		
Storage temperature		-20 ~ 70°C		
Output	analogue	± 5V (-10V ~ +10V)		
	digital	option : RS 232 or RS 422	RS 422/687,5kBaud	
Power supply		24VDC (± 15%), max 500mA		
Sensor cable length		standard : 2m - integrated option : 5m/10m on request		
Controller		functions : auto zero/signal averaging dimensions : 143mm×145mm×52mm - without mounting clips		
Electromagnetic compatibility (EMC)		EN 50081-1 and EN 50082-2		
Vibration		2g/20 ~ 500Hz		
Shock		15g/6ms/3 axis		
Weight	sensor	~ 800g	~ 500g	
	controller	~ 1000g		

FSO = Full Scale Output

All specifications apply for a diffusely reflecting matt white ceramic target

¹⁾ series 1810 : at 2,5 kHz without averaging, series 2210 : at 10 kHz without averaging 2) with PC averaging factor 128

SMR = Start of measuring range MMR = Midrange EMR = End of measuring range

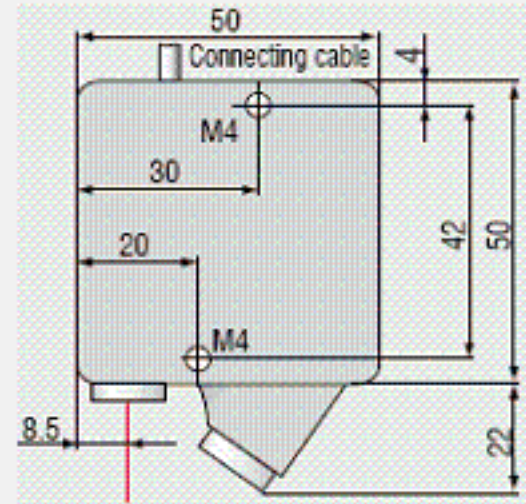
레이저 변위 센서

optoNCDT 1607 시리즈

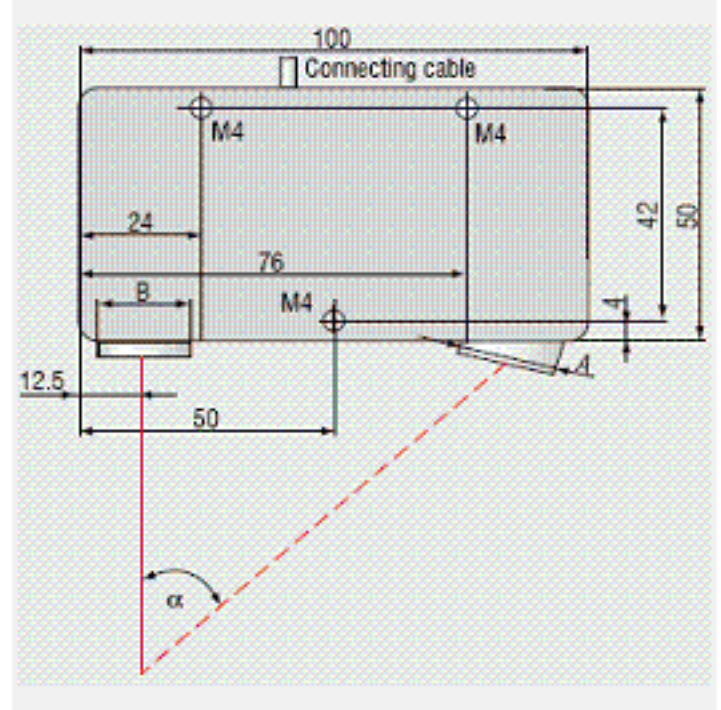


- 직접반사 표면에서 정밀한 측정 (유리 및 거울)
- 측정 범위 : 2mm ~ 20mm
- 설치용 선반 포함
- 통합 컨트롤러 및 콤팩트한 디자인
- 아날로그 (U/I) 및 디지털 출력
- RTSC (실시간 표면 보정)
- 간편한 통합

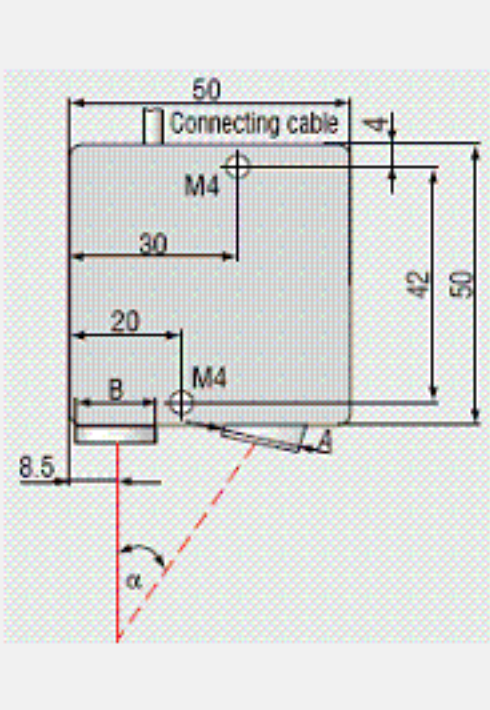
optoNCDT 1607 - 0.5 ↓



optoNCDT 1607 - 50/100/200 ↓



optoNCDT 1607 - 2/4/10/20 ↓



MR	Angle	A	B
0,5	SMR 1.75mm measures are not relevant		
2	45°	13	5
4	45°	13	5
10	29°	12	5
20	23°	12	5
50	28°	22	8
100	18°	22	8
200	12°	22	8

Model	LD 1607-0.5	LD 1607-2	LD 1607-4	LD 1607-10	LD 1607-20	LD 1607-50	LD 1607-100	LD 1607-200
Measuring range	0,5mm	2mm	4mm	10mm	20mm	50mm	100mm	200mm
Start of measuring range	SMR	23,75mm	23mm	22mm	40mm	55mm	95mm	170mm
Midrange	MMR	24mm	24mm	24mm	45mm	65mm	120mm	220mm
End of measuring range	EMR	24,25mm	25mm	26mm	50mm	75mm	145mm	270mm
Linearity	1µm	4µm	8µm	20µm	40µm	100µm	200µm	400µm
Resolution (Noise)*	static	0,1µm	0,5µm	1µm	3µm	6µm	20µm	30µm
Frequency response		10kHz, 7kHz, 4kHz, 1kHz, 250Hz, 100Hz, 25Hz or 15Hz (-3dB), selectable with DIP switches optional : Model LD 1627 : 37kHz (-3dB)						
Temperature stability		± 0,03% FSO/°C						
Light source		laser<1mW, wavelength : 670nm (red)						
Life cycle	typ.	100000h (laserdiode)						
Laser safety class		class 2 (DIN EN 60825-1 : 2001-11)						
Spot diameter	MMR	0,1mm	0,3mm	0,3mm	0,6mm	0,9mm	1,5mm	1,5mm
Permissible ambient light		20000lx						
Output		displacement : ± 10√4 - 20mA/RS 232 intensity : 0 ~ 10V						
Vibration		2g (IEC 68-2-6)						
Shock		15g (IEC 68-2-6)						
Operation temperature		0 ~ +50°C						
Storage temperature/humidity		-20 ~ +70°C/up to 90% RH						
Protection class		sensor : IP 64/electronics : IP 40						
Supply		+24VDC/200mA (10 ~ 30VDC)						
Connector		25-pin Sub-D connector						
Weight	Sensor	250g	240g				400g	
	Controller	275g						
Sensor cable length		2m						

FSO = Full Scale Output All specifications apply for a diffusely reflecting matt white ceramic target

* Frequency response 15 Hz

SMR = Start of measuring range MMR = Midrange EMR = End of measuring range