

# GB-ER series

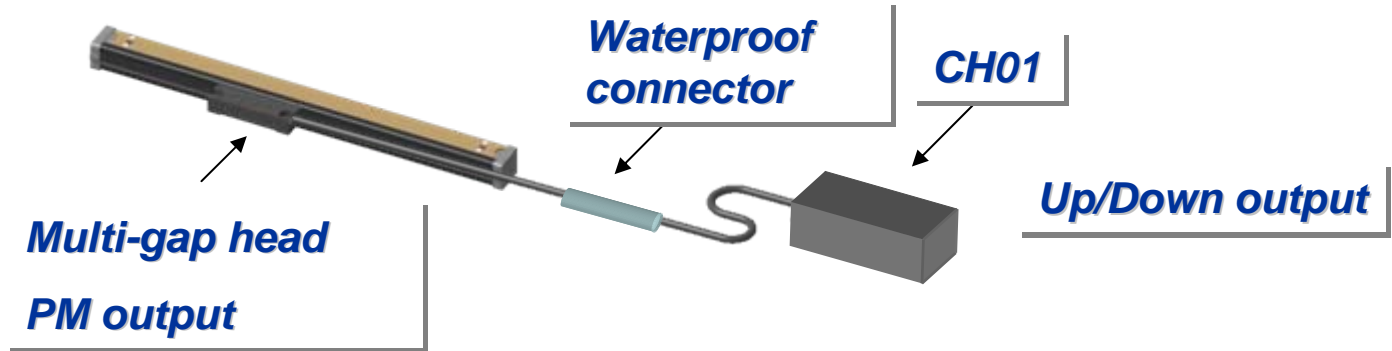


Direct connection to LH70/71 series

# Product comparison

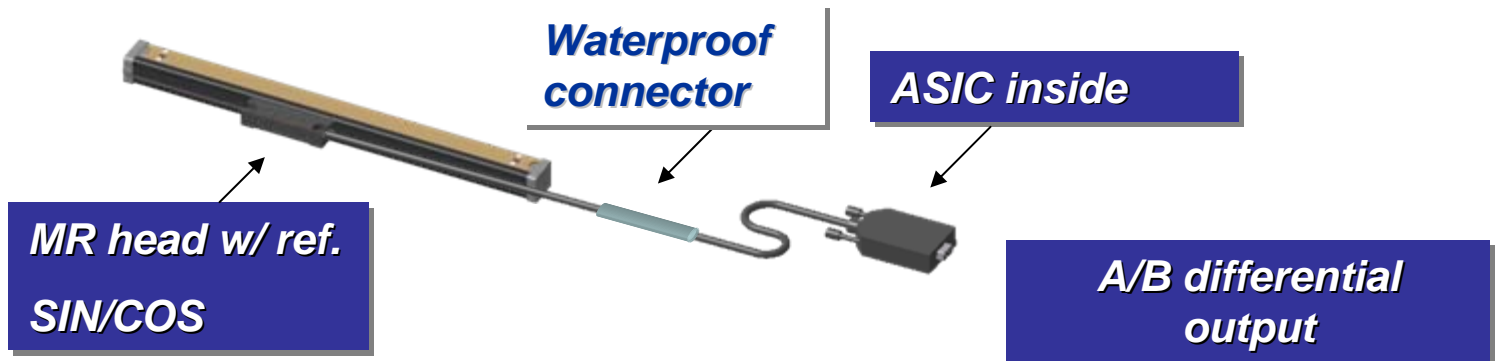
**GB-A series**

Cable length : 3m, 5m, 10m



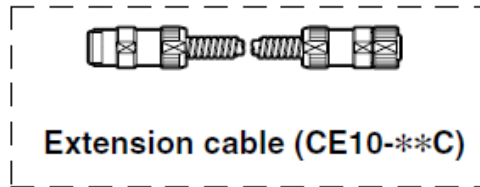
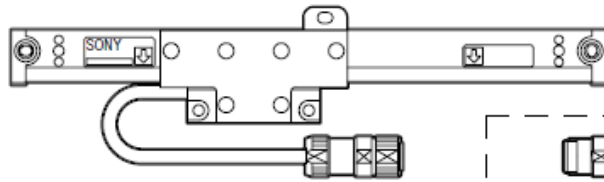
**GB-ER series**

Cable length : Standard 3m only, Extension cable 2m, 7m



# System configuration

Scale unit : SR138R series

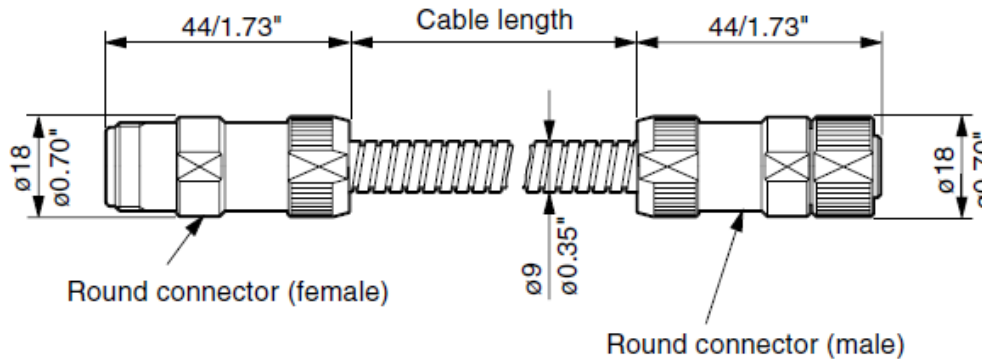


Connection cable : CH04-03C



Extension cable : CE10 series

CE10-\*\*\*C



Unit : mm/inch

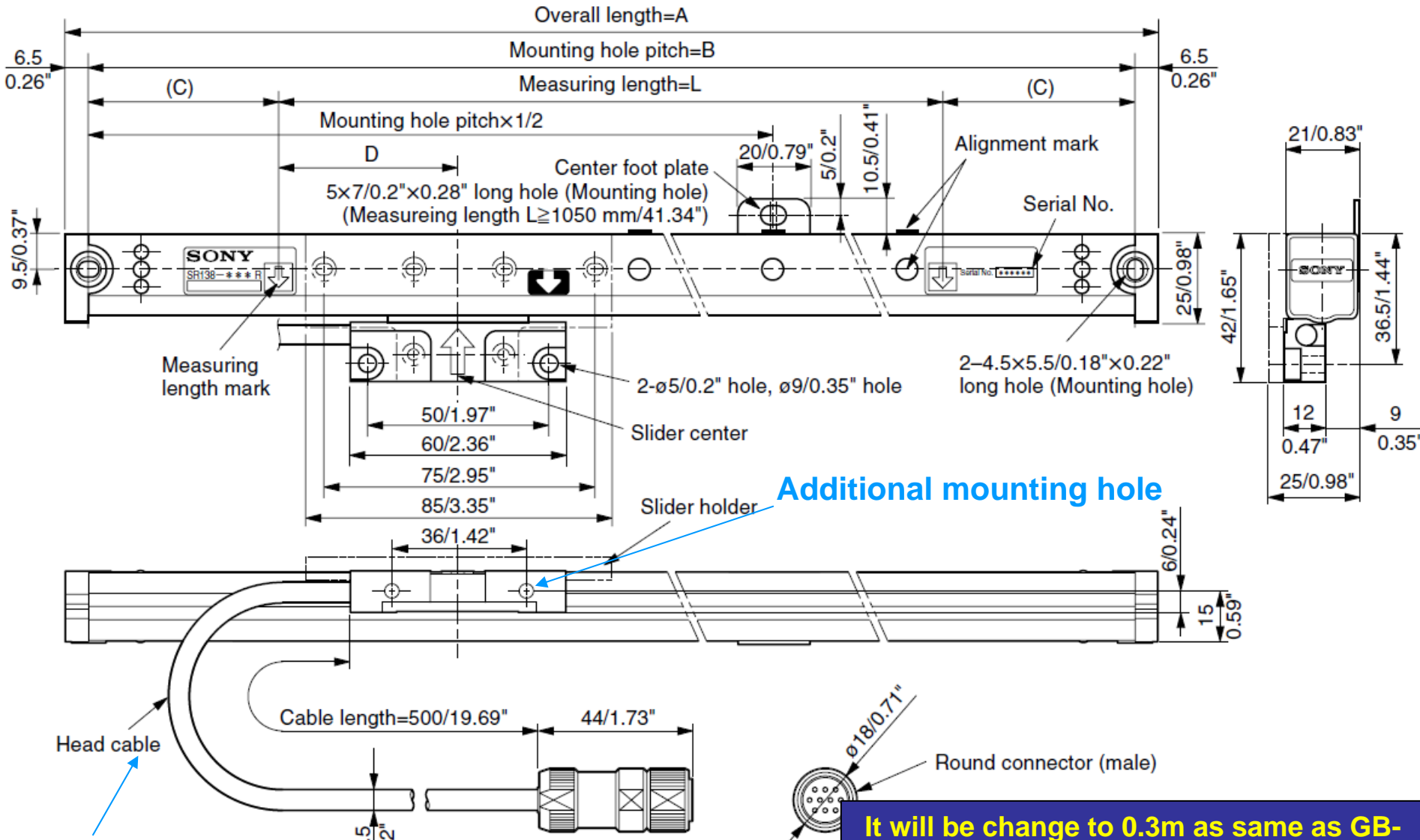
Model	Cable length
CE10-01C	1 m/3.2 ft
CE10-03C	3 m/9.8 ft
CE10-05C	5 m/16.4 ft
CE10-10C	10 m/32.8 ft

SMSJ will prepare  
2m and 7m.

# SR138R series

Dimensions is same as GB-A

Scale unit

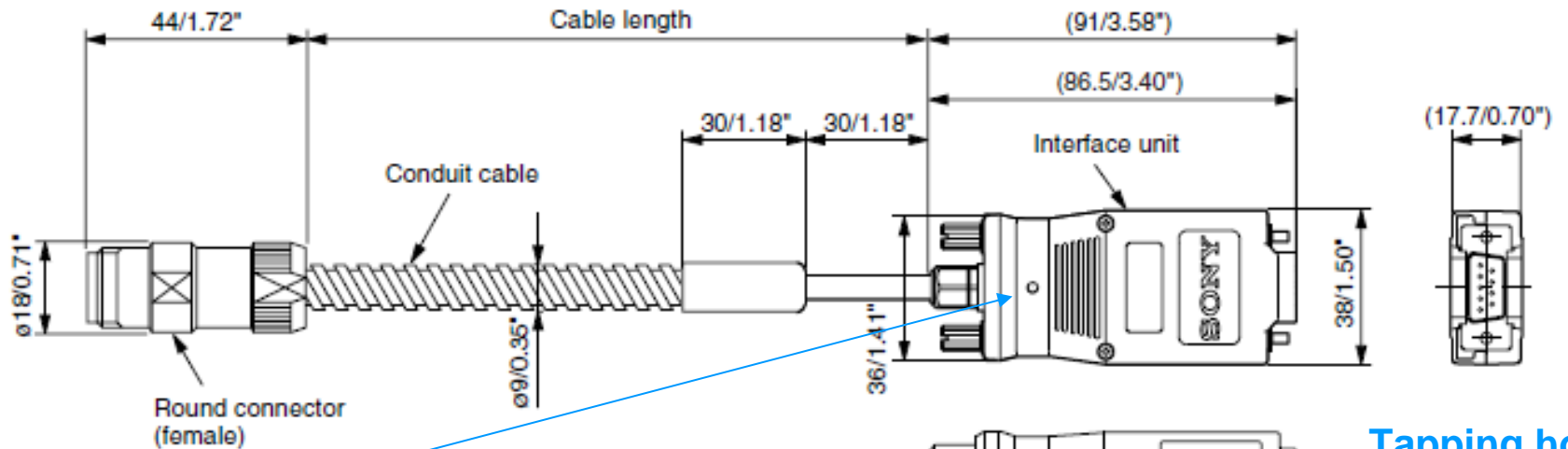


0.5m : 0.2m longer than GB-A

It will be change to 0.3m as same as GB-A in near feature.

# CH04 Series

Connection cable (CH04 : Included only with the GB-ER series)

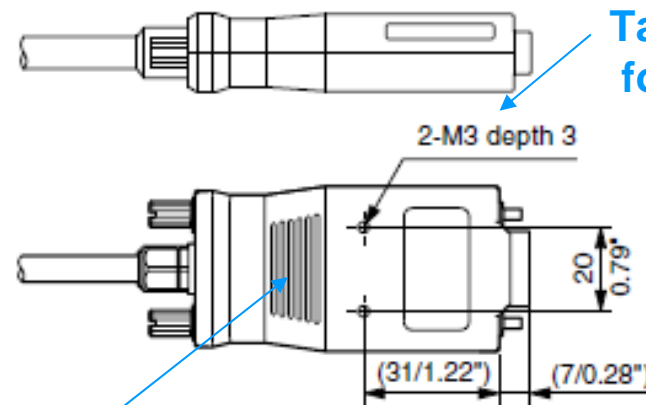


Status lamp

Green : Normal

Red : Error (Over speed,  
Cable disconnection, Defect signal )

Tapping hole  
for mounting



Interpolator inside

Unit : mm/inch

# Product specification comparison (Difference between GB-A and GB-ER)

Item	GB-A	GB-ER	Note
<b>Output signal</b>	Up/down single-end TTL	A/B/Z TTL Line driver	Added on reference point.
<b>Output connector (CH cable)</b>	SONY Original I/F box (CH01 cable)	I/F unit with D-sub 9 pin (CH04 cable)	
<b>Output connector (From head cable)</b>	JAE Circular waterproof type Male N JB1DB 10PL2	JAE Circular waterproof type Male N JB1DB 10PL2	Same connector but <b>No compatible signal</b>
<b>Mounting pattern of the Head</b>	Two sides (Top and Bottom)	Three sides (Top, Bottom and Side)	
<b>Cable output direction change</b>	Yes (It is changeable by customer.)	No (Another side direction is available as special model)	Inside of the head is glued in order to against coolant or water.
<b>Included cable</b>	(CH01 series) ML:50 to 850 : 3m ML: 950 to 1850 : 5m ML:2050,2200 : 10m	(CH04 series) ML:50 to 2200 :3m	Use extension cable for long scale Model name :CE10.
<b>Cable combination</b>	Necessary	Necessary	
<b>Head cable length</b>	0.3m	0.5m	.
<b>Reference point</b>	No	Yes (Center one point)	Can be ordered any one position as special model.
<b>Display</b>	LH51, LH52	LH70,LH71	Direct connect to.....
<b>Power consumption</b>	No general information	200mA(120ohm termination)	
<b>Power supply</b>	No general information(+5V , -5V)	+5V $\pm$ 5%	

**\*Other specifications are same as GB-A scale.**

# General specifications



Item	GB-005ER to 020ER	GB-025ER to 085ER	GB-095ER to 185ER	GB-205ER to 220ER
Measuring length : ML (mm)	50,100,150,200	250,300,350,400,450,500, ,550,600,650,750,850	950,1050,1250,1400, 1600,1850	2050,2200
Overall length (mm)	ML+104	ML+120		
Max. travel length (mm)	ML+14	ML+30		
Center foot plate	No : ML=50 to 950 / Yes : ML=1050 to 2200			
Accuracy (at 20°C) (μm)	5+5ML/1000			
Resolution (μm)	0.5			
Min. phase difference (ns)	200			
Reference point	One center location in measuring length			
Mounting parallelism (mm)	±0.1			
Thermal expansion coefficient(/ °C)	$(11 \pm 1) \times 10^{-6}$			
Operation temperature (°C)	0 to 40			
Storage temperature (°C)	-10 to 50			
Cable length (m)	SR138R Head cable : 0.5 CH04 Standard : 3 (Can be extend up to 30 / Extension cable : CE10)			
IP glade	IP65 (Scale part) / IP30 (Interface unit part)			
Output signal	A/B/Z Differential line driver (DS34C87)			
Power supply	DC +5 ±5%			
Output connector	D-sub 9 pin male (Inch screw for fixing)			
Max. response speed (m/min)	60 (Scale signal and Reference point signal)			
Power consumption (mA)	Max. 200 (at 120 ohm termination)			
Inrush current (A)				

# Technical item comparison




Item	GB-A	GB-ER	Note
Scale	Rod type scale Ø 2mm 200µm signal pitch Clamp : Spherical surface	Rod type scale Ø 2mm 200µm signal pitch.	Same material using. Detection principle is same as SD608-RA.
Head	Multi-gap head	MR elements (Incremental and Reference point)	
Reference point	None	On the scale rod	
Inside Slider	PWB for cable connection	Analog circuit inside	
Interpolation circuit	Analog circuit (PM signal) With interpolation IC	Analog circuit (SIN/COS) with interpolation ASIC	Interface box of the cable end
Cable	PVC 6 wire	PVC 10 wire	GB-ER : 10 wire cable
Head cable length	0.3m	0.5m	





# Connection Cables with LH50 series

Scale	Head/Cable	Adapter	DRO
GB-A	Accessory (CH01 is included.)		 LH51 LH52
SR128	CH01-※※C		
SR127			
SR-801	CE07-※※C	SZ51-MS01 	LH54-3 LY51 LY52
MSS-101			
SR118	CE05-※※C		
SL110	PL20B-※		
SL130			
SJ700			




# Connection Cables with LH70 series

Scale	Head/Cable	Adapter	DRO
GB-ER 	Accessory (CH04 is included.)		
SR138	CH04-※※C		
SR127 → Discontinue			LH70 LH71
SR-801	CE07-※※C	SZ51-MS01 SZ70-1	LY71 LY72
MSS-101			
SR118	CE05-※※C		
SL110	PL20B-※	SZ70-1	
SL130			
SJ700			SZ70-1

# Connection Cables with LH70 series

Scale	Head/Cable	Adapter	DRO
GB-A	Accessory	SZ70-1	 LH70 LH71
SR128	CH01-※※C		
SR127			
SR-801	CE07-※※C	SZ51-MS01 SZ70-1	LY71 LY72
MSS-101			
SR118	CE05-※※C		
SL110	PL20B-※	SZ70-1	 SZ70-1
SL130			
SJ700			

# Connection Cables with LH50 series

Scale	Head/Cable	Adapter	DRO
GB-ER 	Accessory	SZ** <b>Not decided yet</b>	 LH51 LH52 LH54-3 LY51 LY52   SZ51-AB01
SR138	CH04-※※C		
SR127	CH01-※※C		
SR-801	CE07-※※C	SZ51-MS01	
MSS-101			
SR118	CE05-※※C		
SL110	PL20B-※		
SL130			
SJ700			