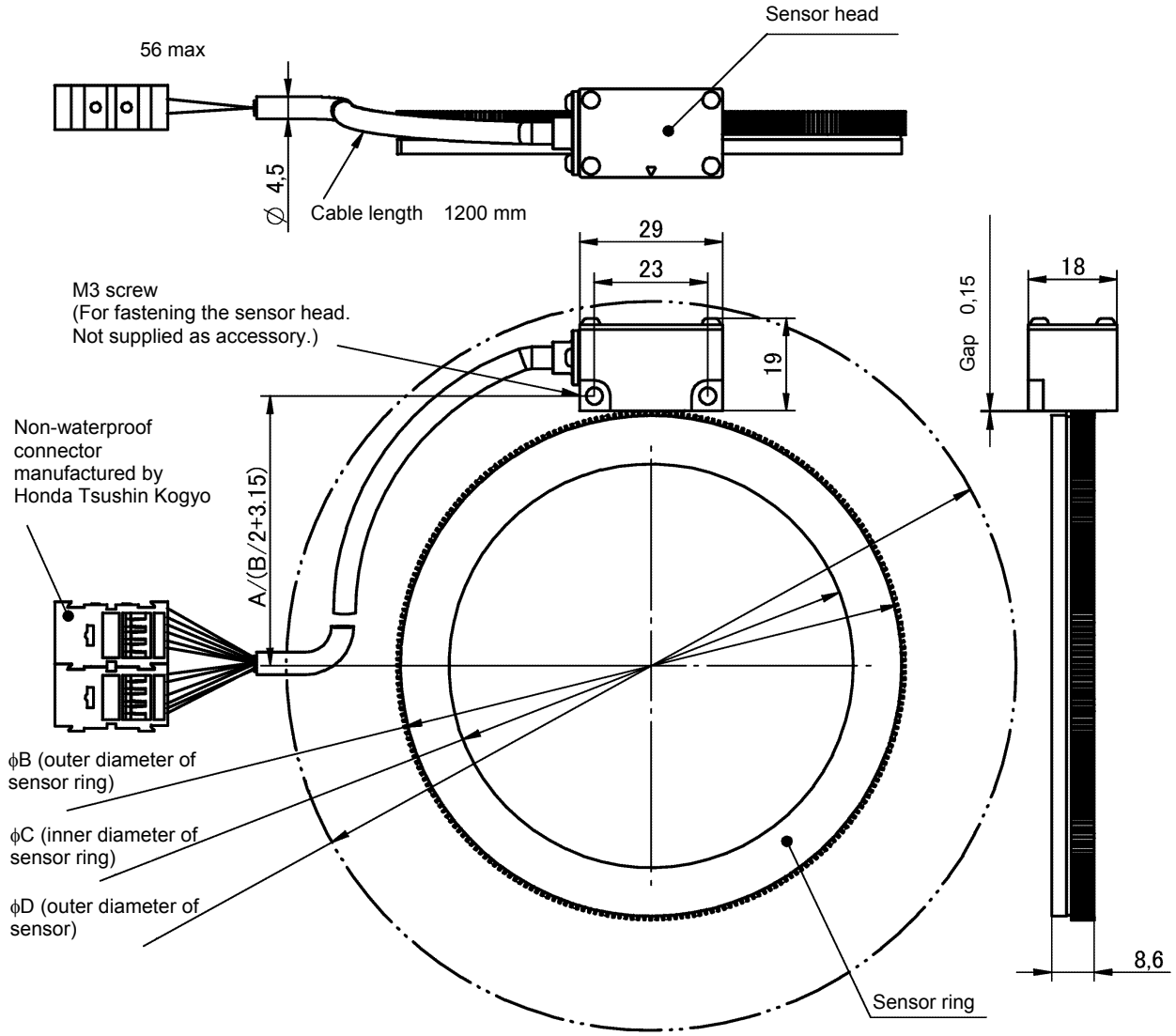
[A860-2155-Txxx]



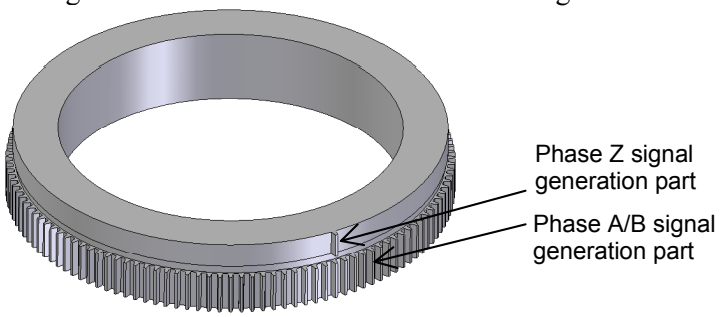
Accessories: Straight pin (JIS B 1354-1988, class A, normal diameter of ϕ3, normal length of 6) × 2, 0.15-mm thickness gage × 1

Unit: mm

Sensor type No.	No. of teeth	A	ϕB	ϕC	ϕD
A860-2155-T201	128	29.15	52+0/-0.020	40+0.016/-0	98
A860-2155-T211					
A860-2155-T311	192	41.95	77.6+0/-0.020	60+0/-0.018	122
A860-2155-T401	256	54.75	103.2+0/-0.020	82+0/-0.018	148
A860-2155-T404				88+0/-0.018	
A860-2155-T411				82+0/-0.018	
A860-2155-T511	384	80.35	154.4+0/-0.020	125+0.025/-0	198
A860-2155-T611	512	105.95	205.6+0/-0.020	160+0.020/-0.005	249

1.1.2 Notes on the Sensor Ring

The sensor ring consists of the phase Z signal generation part and the phase A/B signal generation part. The new αiBZ sensors (A860-2150-Txxx and A860-2155-Txxx) are different from the conventional αiBZ sensors (A860-2120-Txxx) in that the new αiBZ sensors integrate the phase A/B signal generation section and the phase Z signal generation section into one piece, and that the phase Z signal generation section has a convex shape instead of a concave shape. When handling the sensor ring, be very careful not to deform or damage the teeth on the outer surface of the ring.

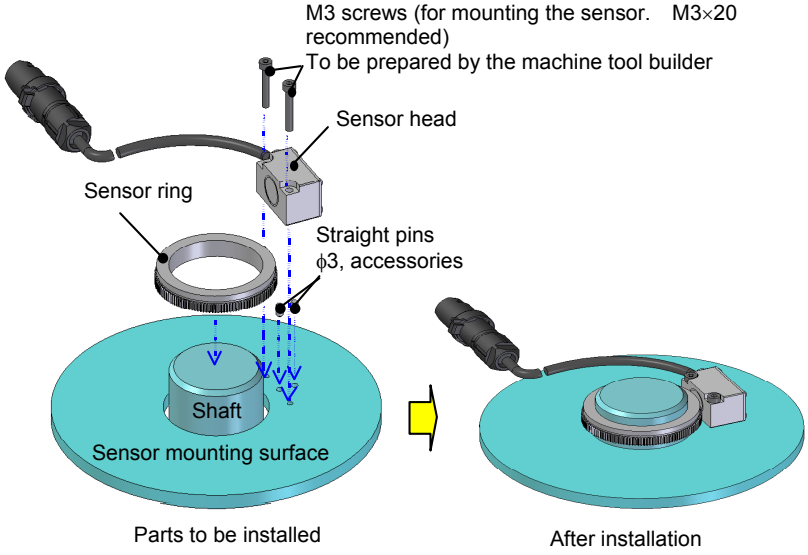


1.1.3 Installing the Sensor

Installation procedure

Install the sensor by following the steps explained below:

- Machine the sensor mounting surface as necessary, and insert straight pins.
- Fit the sensor ring into the machine shaft (or sleeve) by means of heat shrink fitting.
- Adjust the gap between the sensor head and sensor ring, and install the sensor in the machine.

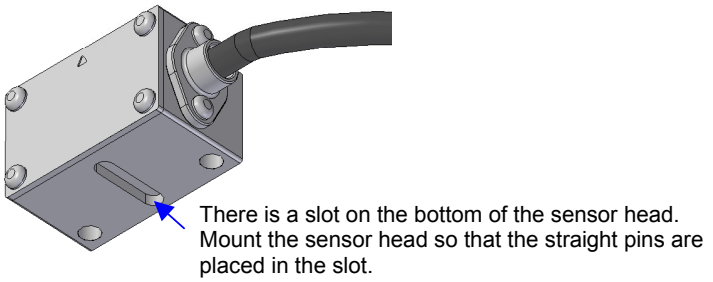


* The connector in the above figure is A290-2150-Txxx.

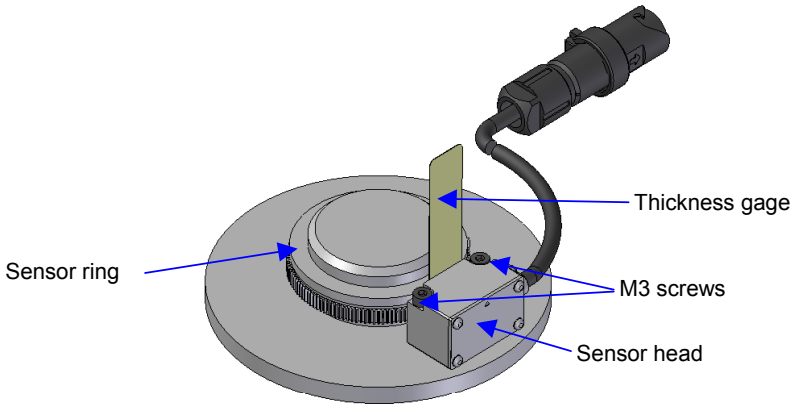
- Installing the sensor head

Install the αiBZ sensor head by following the steps below:

- Place the sensor head on the sensor mounting surface so that the straight pins are positioned in the slot of the sensor head, and fasten the sensor head temporarily. When mounting the sensor head, be careful not to hit the sensor head against the sensor ring.



- Insert the thickness gage (supplied as an accessory; t = 0.15 mm) between the sensor ring and the sensor head, and while lightly pressing the sensor head against the thickness gage, tighten the sensor mounting screws (recommended tightening torque: 1.3Nm ±10%). Apply a thread locker to the sensor mounting screws to prevent them from becoming loose.



* The connector in the above figure is A290-2150-T***.

- Pull out the thickness gage, and slowly turn the spindle to ensure that the sensor ring and the sensor head do not touch.
- Check that the gap between the sensor ring and the sensor is at least 0.1 mm.

1.1.4 Interference of the Sensor Ring

The following table lists the interference for heat shrink fitting for the sensor ring at each maximum speed.

Unit: μm

Max. speed (min^{-1})	Type No. : A860-2150-Txxx、A860-2155-Txxx							
	T201	T211	T311	T401	T404	T411	T511	T611
3000	ϕ6 to ϕ32	ϕ6 to ϕ32	ϕ6 to ϕ34	ϕ7 to ϕ35	ϕ7 to ϕ35	ϕ7 to ϕ35	ϕ8 to ϕ43	ϕ11 to ϕ41
3500	↓	↓	↓	↓	↓	↓	ϕ9 to ϕ44	ϕ13 to ϕ43
4500	↓	↓	↓	↓	↓	↓	ϕ11 to ϕ46	ϕ19 to ϕ49
6000	↓	↓	ϕ7 to ϕ35	ϕ9 to ϕ37	ϕ9 to ϕ37	ϕ9 to ϕ37	ϕ15 to ϕ50	ϕ29 to ϕ59
8000	↓	↓	ϕ8 to ϕ36	ϕ11 to ϕ39	ϕ11 to ϕ39	ϕ11 to ϕ39	ϕ24 to ϕ59	ϕ47 to ϕ77
10000	↓	↓	ϕ9 to ϕ37	ϕ14 to ϕ42	ϕ15 to ϕ43	ϕ14 to ϕ42	ϕ35 to ϕ70	ϕ71 to ϕ101
12000	ϕ7 to ϕ33	ϕ7 to ϕ33	ϕ11 to ϕ39	ϕ18 to ϕ46	ϕ19 to ϕ47	ϕϕ18 to ϕ46	ϕ47 to ϕ82	
15000	ϕ8 to ϕ34	ϕ8 to ϕ34	ϕ13 to ϕ41	ϕ26 to ϕ54	ϕ28 to ϕ56	ϕ26 to ϕ54	ϕ71 to ϕ106	
20000	ϕ10 to ϕ36	ϕ10 to ϕ36	ϕ19 to ϕ47			ϕ41 to ϕ69		
25000		ϕ12 to ϕ38	ϕ27 to ϕ55			ϕ62 to ϕ90		
30000		ϕ15 to ϕ41	ϕ37 to ϕ65			ϕ87 to ϕ115		
40000		ϕ23 to ϕ49	ϕ61 to ϕ89					
50000		ϕ33 to ϕ59						
60000		ϕ43 to ϕ69						
70000		ϕ57 to ϕ83						

NOTE

1 From the above table, select the suitable interference according to the maximum speed and the type of the ring used. If an incorrect interference is applied, the ring will be damaged or loosen while the spindle rotates.

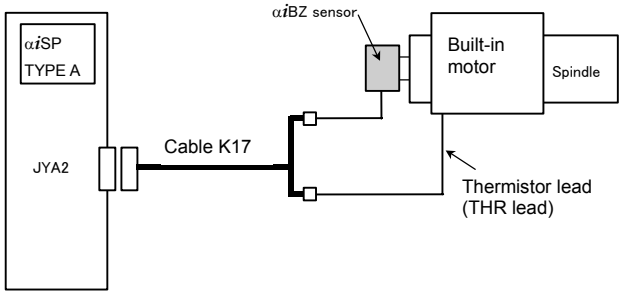
2 These rings cannot be used at a speed higher than the specified speed shown in the above table.

1.1.5 CONNECTION

1.1.5.1 Connecting A860-2150-Txxx

Connection diagram (outline)

Connect the αiSP and αiBZ sensor as shown in the figure below.



For details of connection and connector pin assignment, refer to the next page.

NOTE
1 Prepare the cable K17 by yourself.
2 Thermistor lead is connected to the motor.
3 The cable K17 may be relayed in the middle. In this case, use a connector with IP54 or more or a terminal box at the relay part.
4 Refer to the DESCRIPTIONS (B-65282EN) of FANUC SERVO AMPLIFIER αi series for more detail information.