

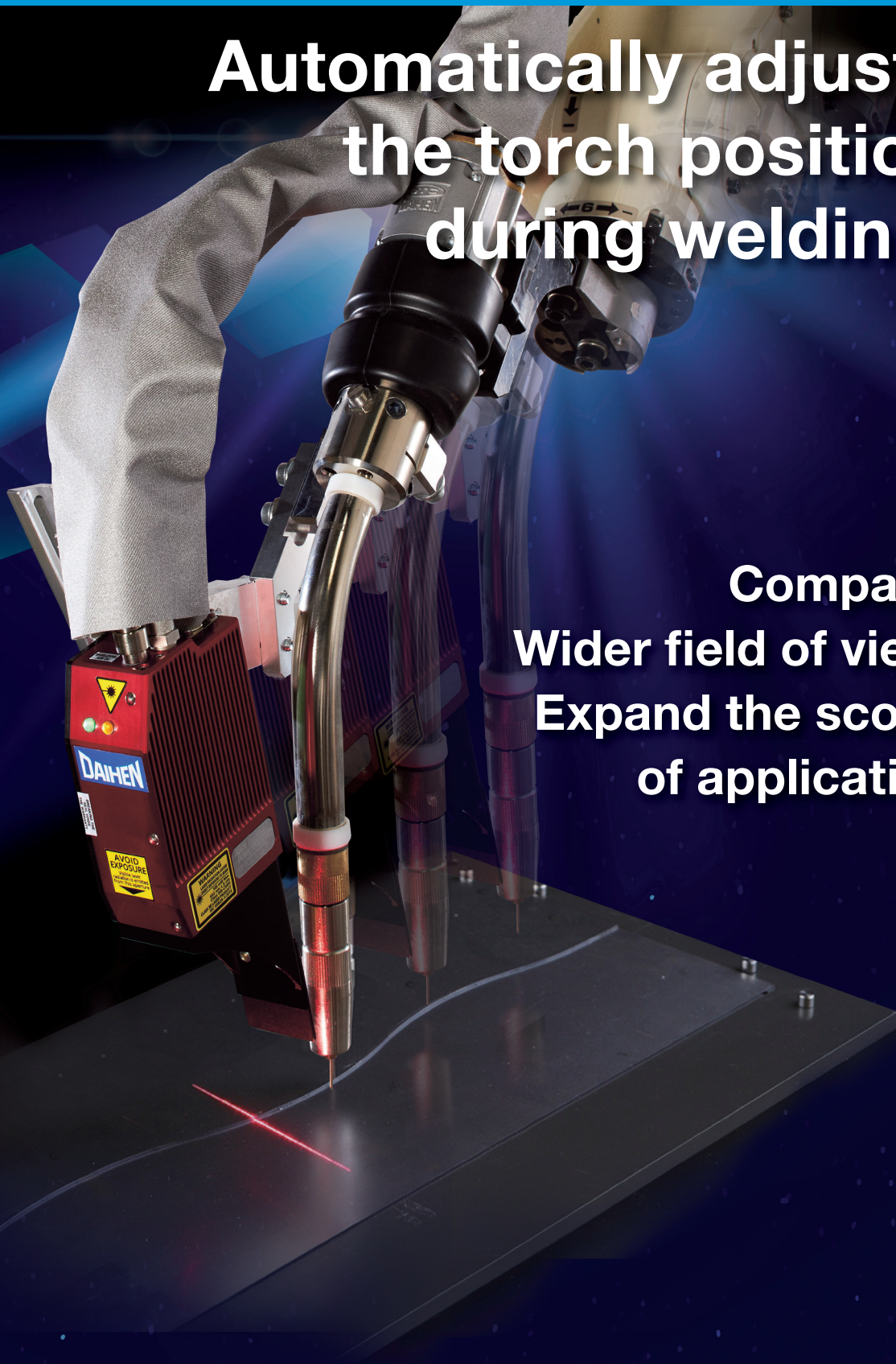
**DAIHEN**

***Almega Friendly series II***

# **Laser Tracking Sensor FD-QTS**

**Automatically adjusts  
the torch position  
during welding!**

**Compact,  
Wider field of view,  
Expand the scope  
of application**



## Automatically adjusts the torch position during welding!

### Improved welding quality

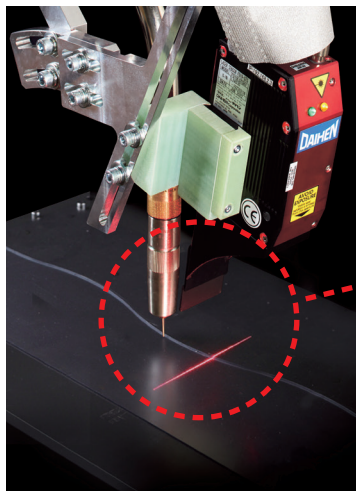
During welding, torch position, angle and welding conditions can be adjusted automatically based on the detected welding position and gap, to prevent faulty welding.

### Ultra-high speed tracking

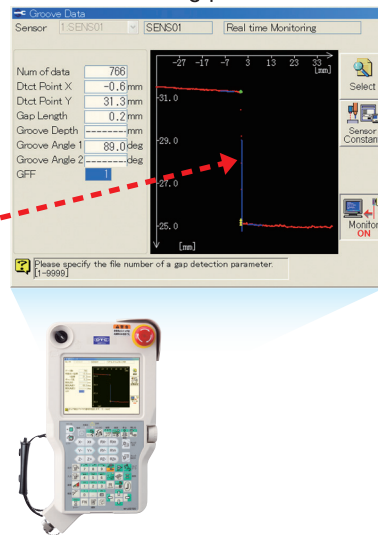
Tracking speed up to 1000cm/min!  
It can be used for tracking high-speed welding such as laser hybrid welding.

### Easy teaching

All operations can be performed from a teaching pendant. A PC is not required.



Detection status can be monitored from the teaching pendant!

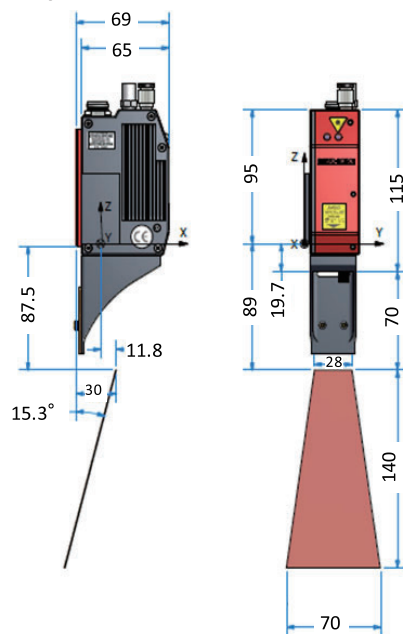


### [Basic Specifications (Sensor Head)]

Items	FD-QTS	
Measurement method	Synchronized laser triangulation	
Max. tracking speed*1	1000 cm/min	
Tracking accuracy*2,3	±0.4 mm	
Maximum Tracking Capability	20°*3 (Within the field of view of the sensor)	
Measurement range	Height	140 mm
	Width	Near: 28 mm Far: 70 mm
	Height Resolution	0.060-0.230 mm
	Width Resolution	0.030-0.070 mm
External dimensions (W x D x H)	115 x 41 x 69 mm (Excluding the protrusion)	
Weight	About 0.5 kg	
Shape of seam	Straight line, circular arc*3,4 Free curve (with obtuse angles larger than 135 degrees and with radius larger than 50 mm*5,6)	
Applicable groove*7	Fillet, lap, double lap, flare, V-groove or butt joint and others	
Applicable plate thickness	1.0 mm~10 mm (lap joint)	
Work size	Not limited, within robot operation area*8	
Applicable welding method	CO <sub>2</sub> , MAG, MIG, TIG (Available also for other use than welding)	
Tracking control method	Full 6D (6-dimension) tracking	
Tracking offset	Possible	
Welding angle control	Possible (specify previously in a figure) Can be changed to Enabled / Disabled	
Synchro-system	Possible*9	
Laser source	Red visible laser diode / Class 3B Laser Product	
Ambient temperature	0 to +50°C	
Ambient humidity	10 to 90%RH (No condensation)	

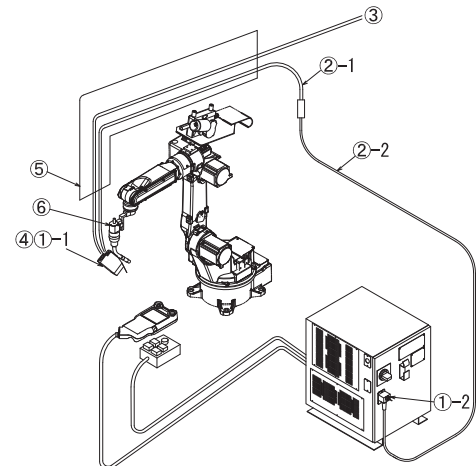
- \*1 Tracking speed may be available even out of this range depending on conditions. Confirm it in the prior experiment.
- \*2 Tracking accuracy is the standard value by FD-V8. For other robots, extra prior evaluation is necessary.
- \*3 The Tracking accuracy, the available minimum radius for tracking and maximum tracking capability is affected by the installation of sensor (height and look ahead distance), the groove to be welded, and the processing conditions (welding speed, with or without weaving, the conditions if with weaving). It must be confirmed in the customer's operating environment beforehand.
- \*4 For a circumference welding, more than twice the radius of the "Look ahead distance of sensor" is preferable.
- \*5 It is difficult to apply the system to a curved seam smaller than 135° (especially, when the posture control is used).
- \*6 Sufficient tracking accuracy may not be obtained in a corner area.
- \*7 There are some cases the groove not described in this document may be applicable. For details, contact our sales office when you consider installing this product.
- \*8 Determine the robot operation area so that the sensor goes ahead of the torch along the seam in an actual welding posture. The effective area can be smaller than the P point moving area depending on the welding posture or the sensor mounting direction.
- \*9 Synchronism option software is required.
- \*10 The upper specifications are applied to welding without weaving. Weaving can cause poor accuracy.
- \*11 Ask for pretesting to make sure this sensor can meet your requirements, before purchasing.

### Outline drawing of FD-QTS



### Standard Configuration of FD-QTS

No.	Items
①	Laser sensor FD19-QTS
①-1	Sensor head
①-2	Sensor I/F kit Relay cable
①-3	Sensor I/F kit SOL power unit
②	Sensor cable
②-1	Sensor cable
②-2	Extension cable
③	Sensor head air tube
④	Sensor bracket ASSY
⑤	Cable cover ASSY
⑥	Shock sensor
⑦	Laser sensor function *Option Software



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