

AFT-MINI

Miniature 6-Axis Force / Torque Sensor



AFT50-D15

Features

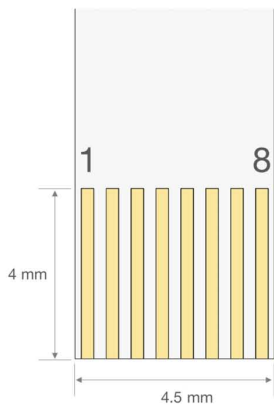
- Miniature 6-axis force/torque sensor
- All-in-one sensor (No additional amplifier)
- Digital output communications (CAN, etc)
- Easy installation and data collection
- Grippers, robot hands, medical, and VR/haptics



Specification table

Index	Unit	Value
Operating voltage	VDC	5
Max. safe excitation voltage	VDC	10
Force range	N	50
Torque range	Nm	0.25
Break force	N	75
Break torque	Nm	0.35
Force resolution (F_{XYZ})	N	0.3
Torque resolution (T_{XYZ})	Nm	0.001
Sample rate	Hz	100
Dimensions	mm	D15 x H10.5
Weight	g	3.2
Temperature		10-50 °C
Interfaces		CAN
Connector	FPC: 0.5 pitch, 8pin	
	Length: 50, 100, 200 mm	
	For User: CAN_H / CAN_L / VCC / GND	

Pin out



- 1 – CAN_LOW
- 2 – CAN_HIGH
- 3 – NC
- 4 – NC
- 5 – NC
- 6 – NC
- 7 – GND
- 8 – VCC (5V)

2.4 CAN Data acquisition

Table 1.3 –Default Value	
Receiver ID	0x01
Data Output Rate	100 Hz

Table 1.4 –transmit								
Index	Data field [0]	Data field [1]	Data field [2]	Data field [3]	Data field [4]	Data field [5]	Data field [6]	Data field [7]
ID	Force output [0]	Force output [1]	Force output [2]	Force output [3]	Force output [4]	Force output [5]	-	-

$F_x \text{ output} = \text{Force output [0]} * 256 + \text{Force output [1]}$

$F_y \text{ output} = \text{Force output [2]} * 256 + \text{Force output [3]}$

$F_z \text{ output} = \text{Force output [4]} * 256 + \text{Force output [5]}$

$\text{Force [N]} = \text{Force output} / 300 - 100$

Table 1.5 –transmit								
Index	Data field [0]	Data field [1]	Data field [2]	Data field [3]	Data field [4]	Data field [5]	Data field [6]	Data field [7]
ID	Torque output [0]	Torque output [1]	Torque output [2]	Torque output [3]	Torque output [4]	Torque output [5]	-	-

$T_x \text{ output} = \text{Torque output [0]} * 256 + \text{Torque output [1]}$

$T_y \text{ output} = \text{Torque output [2]} * 256 + \text{Torque output [3]}$

$T_z \text{ output} = \text{Torque output [4]} * 256 + \text{Torque output [5]}$

$\text{Torque [Nm]} = \text{Torque output} / 50,000 - 0.6$