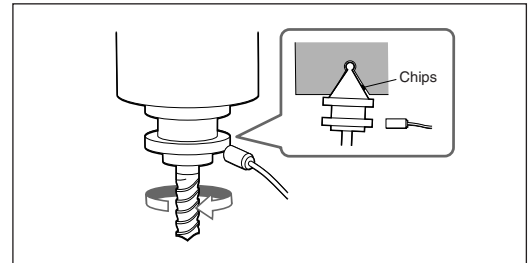


ATC Run-Out Detection System >>>

ATC Run-Out Detection System (patent pending)

Prevents Defective Machining Caused by Chips in Tool Taper



ATC Run-Out Detection
Improper chucking caused by chips or other foreign matter in the tool chuck is detected by run-out of the shank flange.

Features

High Precision

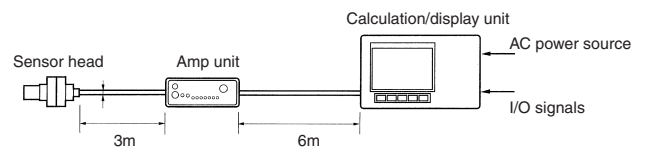
Tools have intrinsic run-out due to notches and magnetic characteristics. Unique compensation and computation is performed for each tool to eliminate these factors and determine the true run-out of the tool, enabling effective detection of chips as small as 20 μm.

0.3 Second Measuring Time

Measurement is completed in only 0.3 seconds with a tool rotation speed of 600 rot/min, eliminating any influence on the cycle time.

Non-Contact Detection by Eddy-Current Sensor

The use of a waterproof (IP67) eddy-current sensor enables high-precision non-contact detection of run-out, without any influence from the coolant.



Specifications

Model	Sensor head	E-DT-ED03A-228
	Amplifier Unit	E-ED-01-029
	Calculation/Display Unit	E-PV140100-1303-300415
Sensor installation limit		1.1 ±0.1mm from tool holder flange surface
Measuring range		1.1 ±0.2 mm from tool holder flange surface
Tool registrations		32 max.
Available tools		BT30, BT40, BT50, HSK63, etc.
Performance	Display unit	0.5 μm
	Repeatability	3 μm or less * Using our master tool holder (BT40)
	Tool rotation speed	600 rot/min
	Cycle time	0.3 s (rotation speed 600 rot/min, without retries)
Usage environment	Temperature	0 to 40°C
	Vibration resistance	3.66 G max. (x, y, z-axis directions)
	Shock resistance	Sensor head: 50G max. (r, z directions, 10 times) Amplifier head: 20 G max. (x, y, z directions, 10 times)
	Waterproof standard	IP67 (sensor head) *Do not allow water, oil or other liquids to splash Amplifier Unit. * Refer to PULCOM V10 pages for details on the Calculation/Display Unit.
Power Requirements		* Refer to PULCOM V10 pages for details.
External dimensions		* Refer to PULCOM V10 pages for details on the Calculation/Display Unit.

I/O Signal Table (I/O1 port)

Output		
Signal name	No.	ID
Run-out OK	1	Pink 1
Run-out NG	2	Pink 2
No tool	3	Pink 3
Sensor error	4	Pink 4
	5	Pink 5
	6	Pink 6
	7	Pink 7
	8	Pink 8
	9	Pink 9
	10	Pink 10
	11	Yellow 1
	12	Yellow 2
	13	Yellow 3
	14	Yellow 4
	15	Yellow 5
	16	Yellow 6
	17	Yellow 7
	18	Yellow 8
	19	Yellow 9
	20	Yellow 10
	21	Green 1
	22	Green 2
	23	Green 3
	24	Green 4
Measurement ready output (READY)	25	Green 5
	26	Green 6
	27	Green 7
Judgment completion output	28	Green 8
CPU RUN	29	Green 9
	30	Green 10
	31	Gray 1
	32	Gray 2
Output signal common (COM)	33	Gray 3

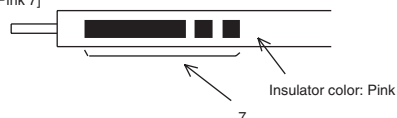
(open collector output)

Input		
Signal name	No.	ID
Judgment start	34	Gray 4
Tool registration	35	Gray 5
Tool selection 1x10°	36	Gray 6
Tool selection 2x10°	37	Gray 7
Tool selection 4x10°	38	Gray 8
Tool selection 8x10°	39	Gray 9
Tool selection 1x10'	40	Gray 10
Tool selection 2x10'	41	White 1
	42	White 2
	43	White 3
	44	White 4
	45	White 5
	46	White 6
	47	White 7
	48	White 8
	49	White 9
Common terminal for input	50	White 10

- Do not connect any terminals to the empty items.
- Input signals:
 - [Refer to the I/O Signal Interface Example.]
 - (10 mA or less per signal)
- Output signal: Use at DC 24 V, 40 mA or less.
- bullet (50P, made by DDK) 57E-30500-D76
- Cable
 - OD ϕ 12.4 interface cable
- ID



Example: [Pink 7]



Refer to PULCOM V10 pages for an interface example.

Sensor Head Installation Precautions

Note 1) Do not cut or add extensions to sensor cables. Be sure to check the sensor draw length before use. Do not touch maked tube ares, but cut within twisted portion.

Note 2) The Sensor Head has passed waterproof structure (standard IP67) and coolant resistance properties tests. This does not, however, mean that resistance to all coolants is guaranteed.

Note 3) A replaceable “protection cap” is attached on the Sensor Head as a measure against wear caused by chips. Do not remove this protection cap during use.

Note 4) Pass the sensor cable through the protective duct to protect it from chips. Ensure a cable bending radius of 35mm or more.

Note 5) The amplifier unit and sensor head set are adjusted before shipment from the factory. Be sure the serial numbers of the amplifier unit and sensor head match before connecting them.

Product Code	Product Name	Model	Q'ty
4206905	ATC Run-out Detection System $\phi 5$ sensor specifications (gap 1.0mm)	A766415, AE40029, AM22229	1 set
998790	ATC Run-out Detection System $\phi 10$ sensor specifications (gap 1.1mm)	A766415, AE40029, AM22228	1 set
Option			
4206870	Casing tube 2.8m		—
345589	PC card	FP-10	—
345591	Touch panel protective sheet (5 sheets/pack)	A045815	—
4206876	Sensor cable mounting crimped terminals (100 ea.)		—
4206877	Sensor protection caps $\phi 5$ (10 ea.)		—
4206878	Sensor protection caps $\phi 10$ (10 ea.)		—
4206879	Gasket for mounting protection cap		—

