

PULCOM Σ -D System

Digital Measuring Head

■ Features

Wide measuring range (maximum diameter difference of 40 mm)

Using an optical scale, replacing the existing LVDT, as a sensor allows continuous measuring to diameters of 40 mm difference, without setup.

High Precision Measuring

The high precision, rigidity and durability proven in the PULCOM Σ -V Series are maintained to make a wide range of high precision measurements possible.

Superior Linearity for All Measurements

Fulcrum measuring mechanism is used in a best-fit method of automatic compensation of problematic diameter deformations caused by centering and measurement deviations, to achieve superior linearity.

Short Setup Time

With the size shift function of previous models, it was necessary to do mastering for each diameter measured, however it is now possible to do all measurements with only three types of mastering required during setup.

(Standard Mastering: to do zero setting, Size master: to adjust linearity)

This makes it possible to greatly reduce setup time to provide a system that is suitable for a wide variety of products and diameters.

A-Quad-B output Digital Transmission

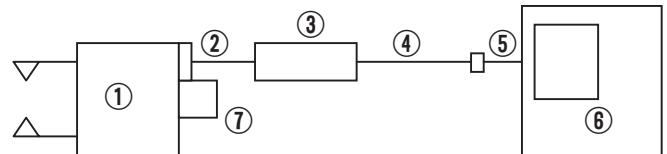
Digital transmission shortens startup time compared to previous size shift mechanisms (1/3 of previous) as well as increasing noise immunity.

Improved Maintenance

Removable connectors are standard equipment which improves maintenance.



■ System Configuration A



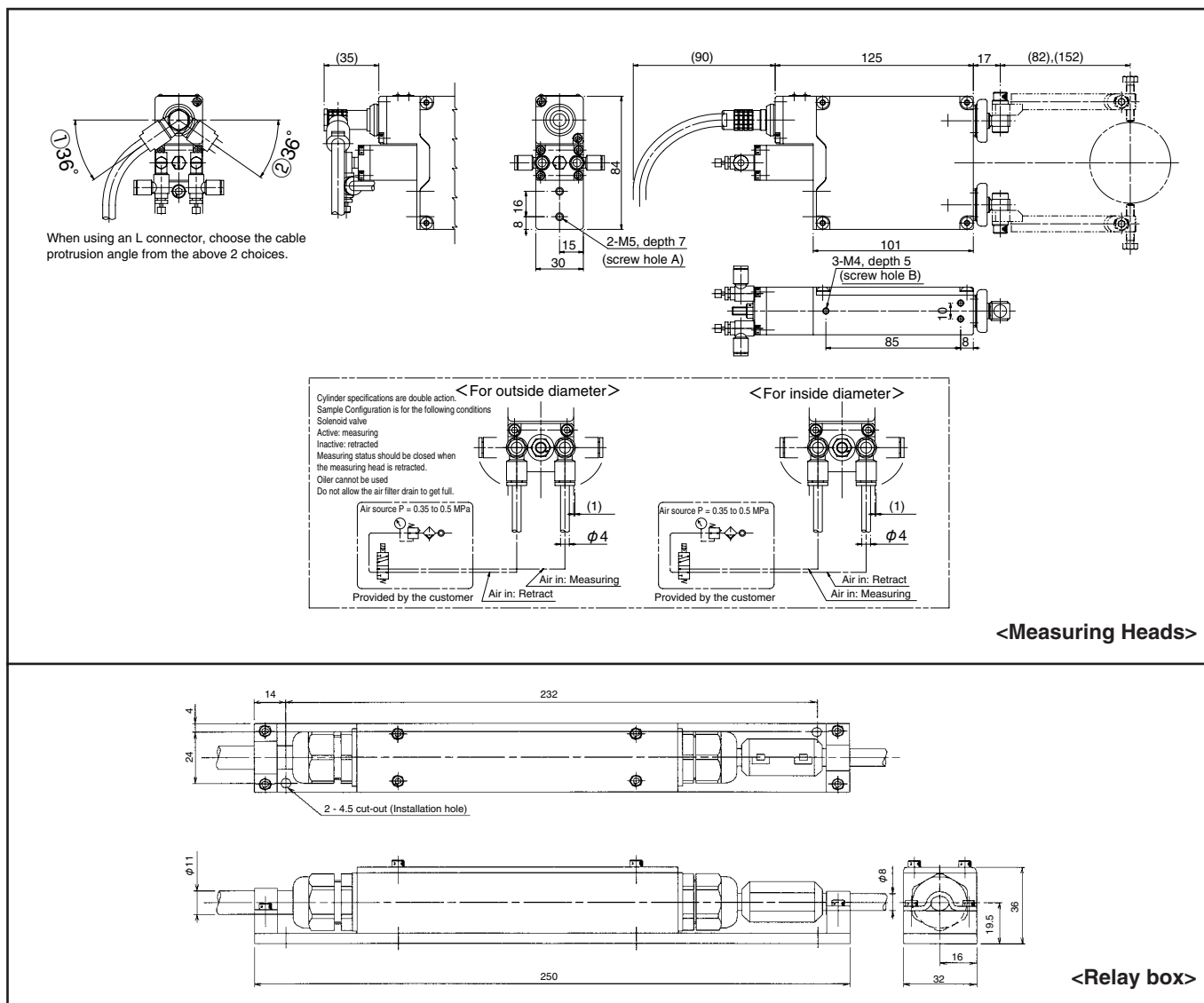
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|---|--|
| ① Measuring head | : Σ -D |
| ② Analog cable | : 2m fixed (minimum bend radius R40mm) |
| ③ Relay box | : A/D conversion circuit board internal |
| ④ Digital cable | : Standard 1m or 4m (special order up to 13m)
Custom lengths require an extension cable between 4 and 5.
A-Quad-B 2ch output |
| ⑤ Conversion cable | : Approx 200 mm |
| ⑥ Control unit | : Count board internal dedicated V10A
Only the V10A controller is supported. |
| ⑦ Double action cylinder for retraction | : Standard air supply setting is 0.4 Mpa |

Specifications

● For continuous outer diameters

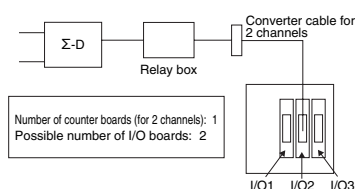
Model		Σ-D (Σ-D-OD-AR)						Σ-D (Σ-D-ID-AR)
Main applications		Cylindrical outer diameter and width						Cylindrical inner diameter and width (specifically for post-process)
Finger length		82 mm	102 mm	112 mm	122 mm	132 mm	152 mm	82 mm
Model	Vertical surface	E-TD-4162			E-TD-4163			E-TD-4182
	Horizontal surface	E-TD-4166			E-TD-4167			E-TD-4186
Supported diameters (continuous measuring range)		25 mm	29 mm	31 mm	33 mm	35 mm	40 mm	25 mm
Measuring range	Standard	φ4 - φ76.5	φ4 - φ79	φ4 - φ80	φ4 - Ø81	φ4 - φ82.5	φ4 - φ84	φ22 - φ109
	Option	Consult us separately for measured diameters exceeding the standard.						
Repeatability (Standard measuring range)		0.2 μm/4σ	0.4 μm/4σ					0.2 μm/4σ
Measuring force		0.6 - 3 N (Contact us for non-standard requests.)						
Front travel (one side)		≥6.5 mm	≥7.5 mm	≥8.0 mm	≥8.5 mm	≤9.0 mm	≥10.3 mm	≥6.5 mm
Retract distance (one side)		≥7.3 mm	≥8.3 mm	≥8.8 mm	≥9.3 mm	≥9.8 mm	≥11.0 mm	≥7.3 mm
Wide linear range (reference value)		≤0.05%/all diameters (for 25 mm diameter fluctuation: ≤12.5 μm, for 40 mm diameter fluctuation: ≤20 μm)						
Narrow linear range (reference value)		≤0.5% (≤5 μm)/±500 μm						
Finger offset		0 - 8 mm (standard 8 mm) Consult us separately for offsets exceeding 8 mm.						0mm
Contact radius		≥SR1.5 (Use CPX for contact material)						
Waterproof standard		IP67 compliant (measuring head, relay box)						
Air pressure supply		0.35 - 0.5 MPa (for double action retract cylinder)						
Temperature range		Usage temperature range: 0 - 40°C/storage temperature range: -30 - 70°C						
Head weight		Approx. 1.4 Kg						

Outer Appearance/Dimension Diagram

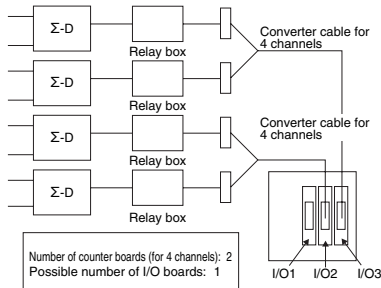


System Configuration B

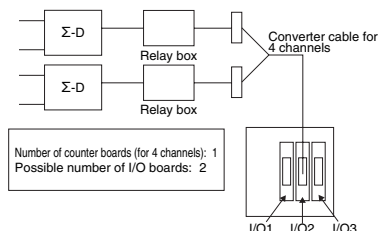
A: 1 head specifications



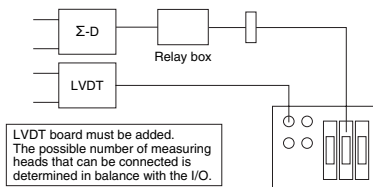
C: 4 head specifications



B: 2 head specifications



D: Combined with LVDT



Product Code	Product Name
4411851	Measuring head Σ -D (outer diameter straight connector)
4411852	Measuring head Σ -D (outer diameter connector 1 direction)
4411853	Measuring head Σ -D (outer diameter connector 2 direction)
4411854	Measuring head Σ -D (inner diameter host straight connector)
4411855	Measuring head Σ -D (inner diameter connector 1 direction)
4411856	Measuring head Σ -D (inner diameter connector 2 direction)
4411857	Relay box (3 m straight connector)
4411858	Relay box (6 m straight connector)
4411859	Relay box (3 m cable with L connector)
4411860	Relay box (6 m cable with L connector)
4206513	Converter cable (for 2 channels)
4206512	Converter cable (for 4 channels)
0930015	Controller V10A (Σ -D 1 unit specifications)
0930014	Controller V10A (Σ -D 2 unit specifications)
4300473	Software (switching up to 40 workpieces)
4300474	Software (switching up to 128 workpieces)