Equipment set TP 111

Basic closed-loop pneumatics training

| Com | plete equipment set TP 111 in equipment tray | 184467 |
|-------|---|---------|
| | | |
| Γhe m | ost important components at a glance: | |
| 1 1 | x Signal input, electrical | 162242 |
| 2 2 | x 3/2-way valve with pushbutton actuator, normally closed | 152860 |
| 3 1 | x 2 x 3/2-way solenoid valve with LED, normally closed | 567198 |
| 4 1 | x Pressure gauge | 152865 |
| 5 2 | x One-way flow control valve | 193967 |
| 6 1 | x On-off valve with filter/regulator, 5 μm | 526337 |
| 7 1 | x Manifold | 152896 |
| 8 1 | x Plastic tubing, 4 x 0.75 silver 10 m | 151496 |
| 9 1 | x PID controller | 162254 |
| 10 1 | x Comparator | 162257 |
| 11 1 | x Pressure sensor, analog | 167094 |
| 12 1 | x 5/3-way solenoid valve, mid position closed | 567201 |
| 13 1 | x 5/3-way proportional valve | 167078 |
| 14 2 | x Air pressure reservoir, 0.4 l | 152912 |
| 15 1 | x Status controller | 162253 |
| 16 1 | x Linear drive, pneumatic, with guide and accessories | 192501 |
| 17 1 | x Position encoder | 152628 |
| 18 1 | x Ruler | 525927 |
| 19 1 | x Weight, 5 kg, for linear drive | 34065 |
| 20 2 | x Shock absorber | 34572 |
| 1 | x Connecting cable for linear potentiometer | 376177 |
| 1 | x Adapter for Y-axis or weight | 167032 |
| 1 | x Mounting accessories for position encoder | 8065079 |

| Recommended accessories: | | | | |
|---|---------|--|--|--|
| Aluminum profile plate → Page 39 | | | | |
| Compressor → Page 136 | | | | |
| Digital multimeter | 8040005 | | | |
| Digital storage oscilloscope | 571845 | | | |
| Function generator | 152918 | | | |
| Cable BNC – 4 mm | 152919 | | | |
| Cable BNC – BNC | 158357 | | | |
| T-connector BNC | 159298 | | | |
| Tabletop power supply unit → www.festo-didactic.com | | | | |
| Power supply unit for mounting frame → Page 159 | | | | |
| 4 mm Safety laboratory cables → Page 159 | | | | |
| | | | | |

Training aims

- $\boldsymbol{\mathsf{-}}$ Controlling pressure and position
- Action sequence of a control circuit
- Activity and timing of control units: discontinuous and continuous controls, P, I, D, PI, PD, PID controls, status controls
- Behavior of control sequences: transfer characteristics, transient response, system with and without compensation, system of first, second and third order, idle times
- Interaction of closed-loop controls and control systems: control circuit optimization, stability considerations
- Set-up, commissioning, and optimization of closed-loop control assemblies, devices, and systems with analog controller cards

Recommended training media

- WBT Pneumatics
- Design and simulation program, FluidSIM® Pneumatics

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Also order:

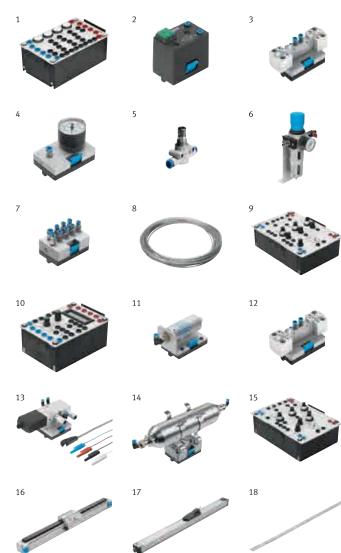
Workbook Closed-loop pneumatics

Campus license (→ Page 19):

| campas accuse (> 1 age 1)). | |
|------------------------------|--------|
| de | 94459 |
| en | 94465 |
| es | 533499 |
| fr | 94347 |

Partial equipment sets for controlling pressure and position on request.

Note: The linear drive and linear potentiometer are mounted perpendicular to the profile slot.



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