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Pneumatic Trainer Single Side

PN:0401020010

Pneumatic trainer is a professional pneumatic circuit design and demonstrating of pneumatic experimental platform. This Pneumatic trainer is designed for training and assessment of subjects such as pneumatic drive, PLC control technology in colleges and vocational schools with a variety of pneumatic components modules and programmable controller module. Pneumatic trainer can meet the teaching and training of the pneumatic disciplines.

1. The composition of pneumatic transmission system.
2. The basic pneumatic circuit experiments
3. PLC electrical control experiment: machine-electric-pneumatic integrated control experiments.

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Performance

1. The training panel is designed as T-slot and all pneumatic modules use rapid joint which can be inserted for easy operation.
2. All pneumatic components and valves are used industrial grade physical components and valves.
3. The pneumatic modules are all independent modules with spring pins plate, which can be assembled easily into a variety of pneumatic circuits on the T-slot panel.
4. The quick couplings are used for pneumatic circuits connection and the electrical control circuit uses training connecting wires with protective function. The students can build circuits under the guidance of instruction books or design their own system circuits. The pneumatic components in this trainer are complete for designing more complex applications circuits. Various circuits design and constitution up to 90 kinds of experiments.
5. Adopt quiet air compressor with low noise (<57db), oil-free, odorless gas, clean and dry.
6. With 1P + N leakage protection, output voltage is 220V, when the earth leakage current exceeds 30mA, the power supply will cut off; the electric control is DC 24V, with over-voltage protection to prevent damage in malfunction.
7. Electrical control module

- a. PLC Module: Mitsubishi FX1S-20MR, I/O, 20 points, 12 DC input / 8 relay outputs
- b. Button control module: composed by 6 pcs self-resetting DPDT green button switch, 6 pcs self-locking DPDT red button switch.
- c. Intermediate relay module: composed by 4 pcs DC24V DC relays, the inputs and outputs (including coil) terminals all lead to the panel, and the corresponding LED indicates when the coil is energized.
- d. The time relay module: composed by 2 pcs DC24V time relays, input and output (including coil) terminals all lead to the panel.
- e. Electronic control module: composed by 6 pcs solenoid valve interface, two pressure relay interface, four stroke switch interface
- f. Control module: composed by a 250V AC voltmeter to indicate the power supply output voltage, and one 30V DC voltage meter to indicate the switching power supply output voltage.

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Typical Training Contents

Part A Basic Pneumatic Circuit Training

1. Pressure control circuits

- 1.1 Differential pressure circuit
- 1.2 High and low pressure control circuit I
- 1.3 High and low pressure control circuit II

2. Directional control circuits

- 2.1 Alternative reversing circuit by two position two-way single electric solenoid valve
- 2.2 Single-acting cylinder circuit by two position three-way single electric solenoid valve
- 2.3 Reversing circuit by two position five-way single electric solenoid valve
- 2.4 Alternative reversing circuit by three position five-way single electric solenoid valve
- 2.5 Two position five-way single electric(pneumatic) control valve circuit
- 2.6 Reversing circuit I by two position five-way double electric(pneumatic) valve
- 2.7 Reversing circuit II by two position five-way double electric(pneumatic) valve
- 2.8 Reversing circuit by three position five-way double electric valve
- 2.9 Reversing circuit by travel(reversing) valve
- 2.10 Reversing circuit by travel manual(reversing) valve
- 2.11 Reversing circuit by PLC
- 2.12 Sequence action circuit by proximity switch

2.13 Sequence action circuit by PLC

2.14 Delay sequence action circuit by PLC

3. Speed control circuits

3.1 Single pneumatic acting cylinder

3.1.1 Speed regulated circuit I by one-way throttle valve in series

3.1.2 Quick return circuit by quick exhaust valve

3.1.3 Pneumatic control speed regulated circuit

3.2 Double pneumatic acting cylinder

3.2.1 Exhaust and speed regulated circuit by one-way throttle valve

3.2.2 Speed regulated circuit II by one-way throttle valve in series

3.2.3 Speed regulated circuit by one-way throttle valve in parallel

3.2.4 Double pneumatic control speed regulated circuit by two position five-way valve

3.2.5 Speed circuit by pressure reducing valve

3.2.6 Synchronization circuit by one-way throttle valve

3.2.7 Slow travel-snap back(slow forward fast backward)circuit

3.2.8 Secondary feed action circuit

3.3 Position control circuits

3.3.1 Position control circuit I by three position five-way valve

3.3.2 Position control circuit II by three position five-way valve

3.4 Delay control circuit by PLC

Part B.PLC electrical control experiment: machine-electric-pneumatic integrated control experiment.

1.PLC programming instructions and ladder programming

2.Learn and use PLC programming software

3.Communication of PLC and computer

4.PLC application and optimization solutions in the Pneumatic transmission system.

Part C.Pneumatic Simulation Control Software(Optional)

1.Differential circuit

2.One-way/Unidirectional speed regulated circuit of single-acting cylinder

- 3.Reversing circuit of single-acting cylinder
- 4.Pressure regulated circuit
- 5.High and low pressure control circuit
- 6.The buffer circuit
- 7.Two points simultaneous control circuit
- 8.Sequence action circuit of twin/double cylinder
- 9.Reversing circuit of Double pneumatic acting cylinder
- 10.Two-way/Bidirectional speed regulated circuit of Double pneumatic acting cylinder

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The Main Technical Parameters

Nos	Items	Specification	
1	Motor	power	750W
		Voltage	220V
		Rated speed	2860 r / min
2	Rated pressure	0.8Mpa	
3	Compressor	Displacement	65L / min
4	Tank capacity		38L
5	Dimensions	L*W*H	1640 × 950 × 1810mm

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Configuration List

Nos	Items	Specification	Qty	Marks
1	Triplet unit(Air filter,relief pressure valve and oil sprayer triple)		1	
2	Double acting single rod cylinder		2	
3	Single acting single rod cylinder		1	
4	Double acting double rod cylinder		1	
5	Three position five-way double solenoid reversing valve	DC24V	2	
6	Two position five-way double solenoid reversing valve	DC24V	3	
7	Two position five-way single solenoid reversing valve	Two for sequence action circuit of double cylinder	2	

Nos	Items	Specification	Qty	Marks
8	Two position three-way single solenoid reversing valve	Normal closed	1	
9	Two position five-way double air control reversing valve		1	
10	Two position five-way single air control reversing valve		1	
11	Two position three-way single air control reversing valve		1	
12	Pressure regulator/regulating valve		1	
13	Shuttle valve		1	
14	Quick exhaust valve		2	
15	One-way throttle valve		6	
16	Two position three-way single manual control reversing valve		2	
17	Two position two-way single stroke control/s-type reversing valve		2	
18	Quick couplings		2	
19			65	
20	Silencer		26	
21	Tee		3	
22	Four-way pipe joint		1	
	Variable diameter coupling		1	
23	Plastic pipe		15m	
24	PLC		1	
25	PLC communication cable		1	
26	Main power supply module		1	
27	Button module		1	
28	Electronic control module (integrated control module)		1	
29	DC relay module		1	
30	PLC module		1	
31	Time Relay Module		1	

Nos	Items	Specification	Qty	Marks
32	Sheath socket		140	
33	Diego plug		2	
34	Diego plug		2	
35	Diego plug		6	
36	Diego plug		6	
37	Diego plug		10	
38	Diego plug		10	
39	Proximity switch	NPN	4	
40	Silent air compressor		1	
41	Electric operation panel		1	
42	Intermediate relay	DC24V	7	
43	Switching power supply	24V	1	
44	Indicator	DC24V	4	
45	Self-locking illuminated push-button	DC24V	4	
46	Single-pole circuit breaker		2	
47	Single-phase leakage protection switch	1P+N C10	1	
48	PLC programming software		1	
49	Pneumatic simulation software		1	Optional
50	Silent air compressor manual		1	
51	Experimental instructions		1	
52	Phillips screwdriver		1	
53	Screwdriver		1	
54	Allen wrench		1	
55	Scissor		1	
56	Tool box		1	
57	Dust cover		1	
58	Signal light	DC24V	2	
59	Button switch	DC24V	2	

Nos	Items	Specification	Qty	Marks
60	Quick couplings		4	
61	Silencer		4	
62	Experimental bench(mm)	1640 × 950 × 1810	1	

*Products and configuration list described herein are subject to changes without notice.

*Optional above is available for orders above 30 sets.