



Presenting our CAD drawing  
data catalog



# KOGANEI

## VALVES GENERAL CATALOG

# PC-VALVE UNIT

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Changing the Concept of Manifold — Its Key Phrases Is “Simple and Clean Figure.”

# PC-VALVE UNIT

Manifolds that can mount up to 8 valves are standard products as high-density units.

Flexible mounting design, and a clean and simple figure that improve space efficiency and have offered new control systems.

Moreover, you can choose ports with quick fittings, flat cable connectors or D sub connectors, or serial transmission types for electrical connections.

Various mounting methods are available, such as direct mounting, flange mounting, angle mounting and DIN rail mounting, and they can be installed in any location.

Also customized orders can be made.



## ● Power supply LED indicator

When power is supplied, LED is ON.  
(Except for PCV205 and PCV206)

## ● Print circuit board

A surge absorption circuit and a wrong polarity prevention circuit are integrated.

## ● Operation LED indicator

This displays which valve is in operation.

## ● Pilot valve

The electrical signal is converted into pneumatic signal.  
The main valve is operated by low power consumption of 1.2W.

## ● Manual override (with locking mechanism)

This is the manual override to operate valve.

## ● Wiring connector

Compatible with flat cable connector (10-pin), D sub connector (15-pin) and serial transmission type.

## ● Power supply connector

This is used when power is supplied from the unit.  
(For PCV201, PCV202, PCV203, PCV204 only)

## ● R port (exhaust) connection port

Quick fitting for  $\phi 6$  tube is equipped as standard.

## ● P port (air supply) connection port

Quick fitting for  $\phi 6$  tube is equipped as standard.

## ● A, B connection port

Quick fitting for  $\phi 4$  tube is equipped as standard.

## ● Dedicated tool for removing tube

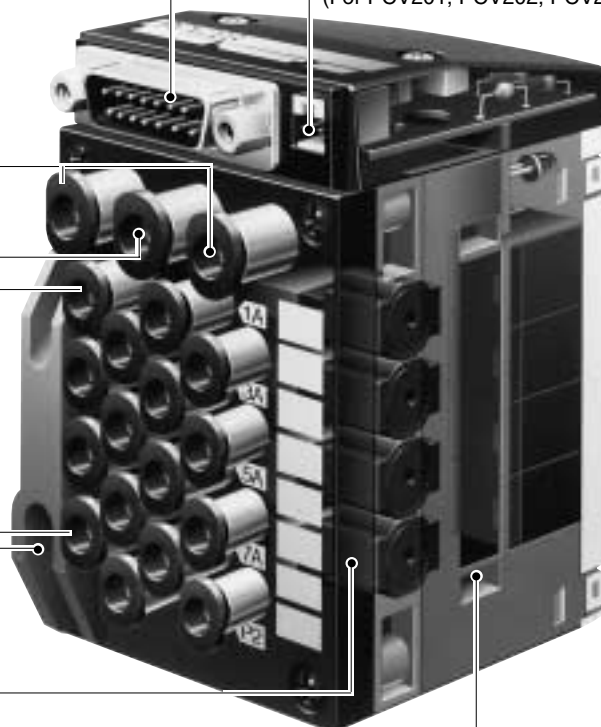
Tool for connecting and disconnecting tube smoothly.  
When not being used, it can be attached to the body.

## ● Main valve

Effective area 2.0mm<sup>2</sup>, 5-port, 2-, 3-position.

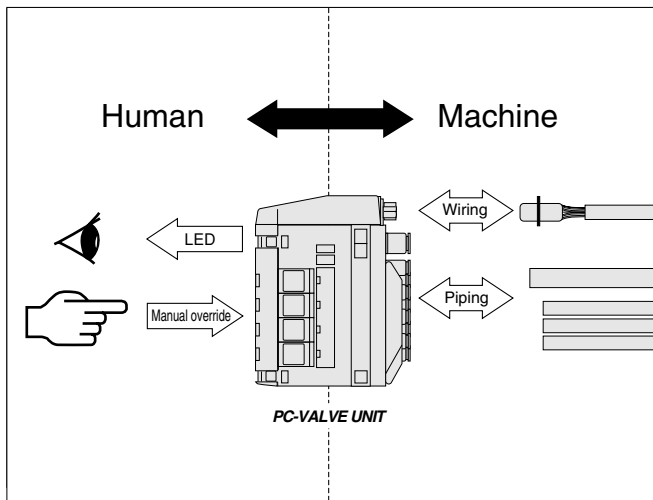
## ● Exhaust valve for prevention of back pressure (option)

When used as a 3-port valve, incorrect operation of actuator caused by back pressure is prevented.



## An Ideal Product for an Easy-to-Use Man Machine Interface.

LED indicator indicates operation and power status, and manual override is on the front panel of the body. Wiring and piping connections are on the back of the body to concentrate functions on each side of the PC-Valve Unit.



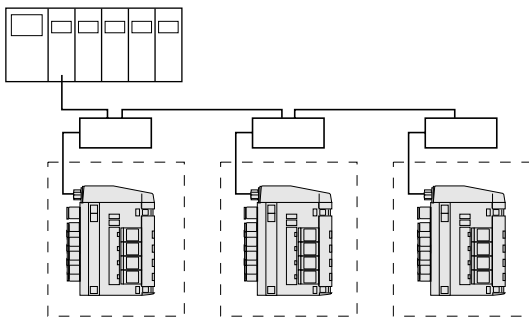
## Since This Unit Is Limited to 8 Stations, Standardization Is Accelerated.

Pilot valves and main valves are separated in the valves with 8 limited stations. T-shaped main valves in staggered positions have realized high density and high integration of 6 mm pitch. By standardizing using valves, wiring and piping, the effects can be extended to the standardization of drawings, models, slip of papers, inventory, maintenance and other things.

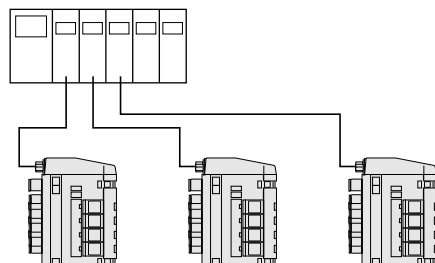
### Connection Example

Flexible unit which can be best fit to various control systems.

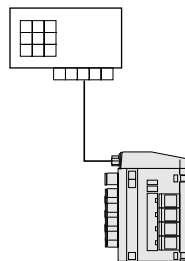
#### ● Decentralized control and PC-VALVE UNIT



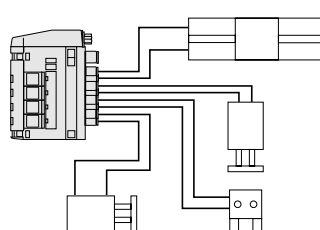
#### ● Concentrated control and PC-VALVE UNIT



#### ● Stand alone type and PC-VALVE UNIT

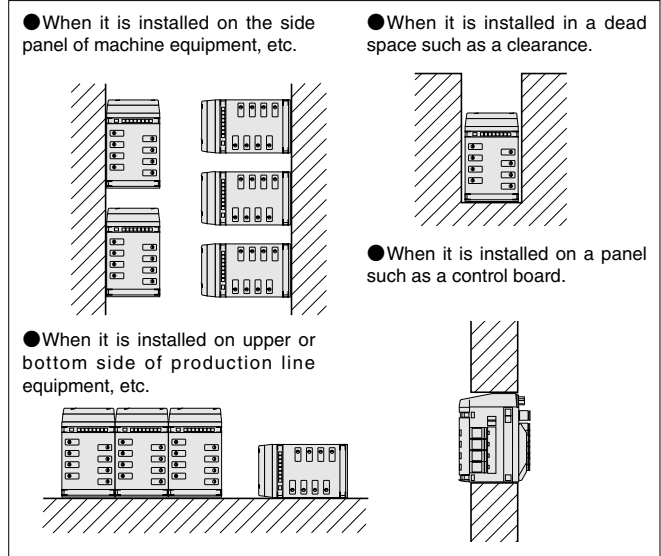


#### ● Actuators and PC-VALVE UNIT



## Block Shaped Unit Which Can Be Installed in Any Location and Improves Space Efficiency. A Unique Design That Has Never Been Before Now Available.

4 types of mounting are available: direct mounting, flange mounting, angle mounting, and DIN rail mounting. A new shape that can be easily installed in a confined space, clearance, or panel of machine equipment. Since P, R, A and B port with quick fittings are located on the back side, mounting and maintenance in confined space is easy.

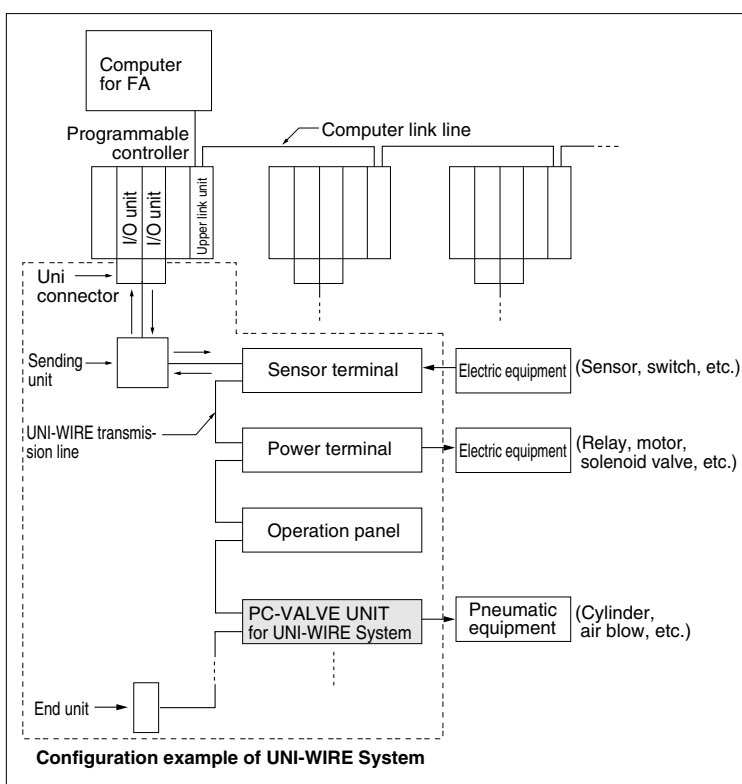
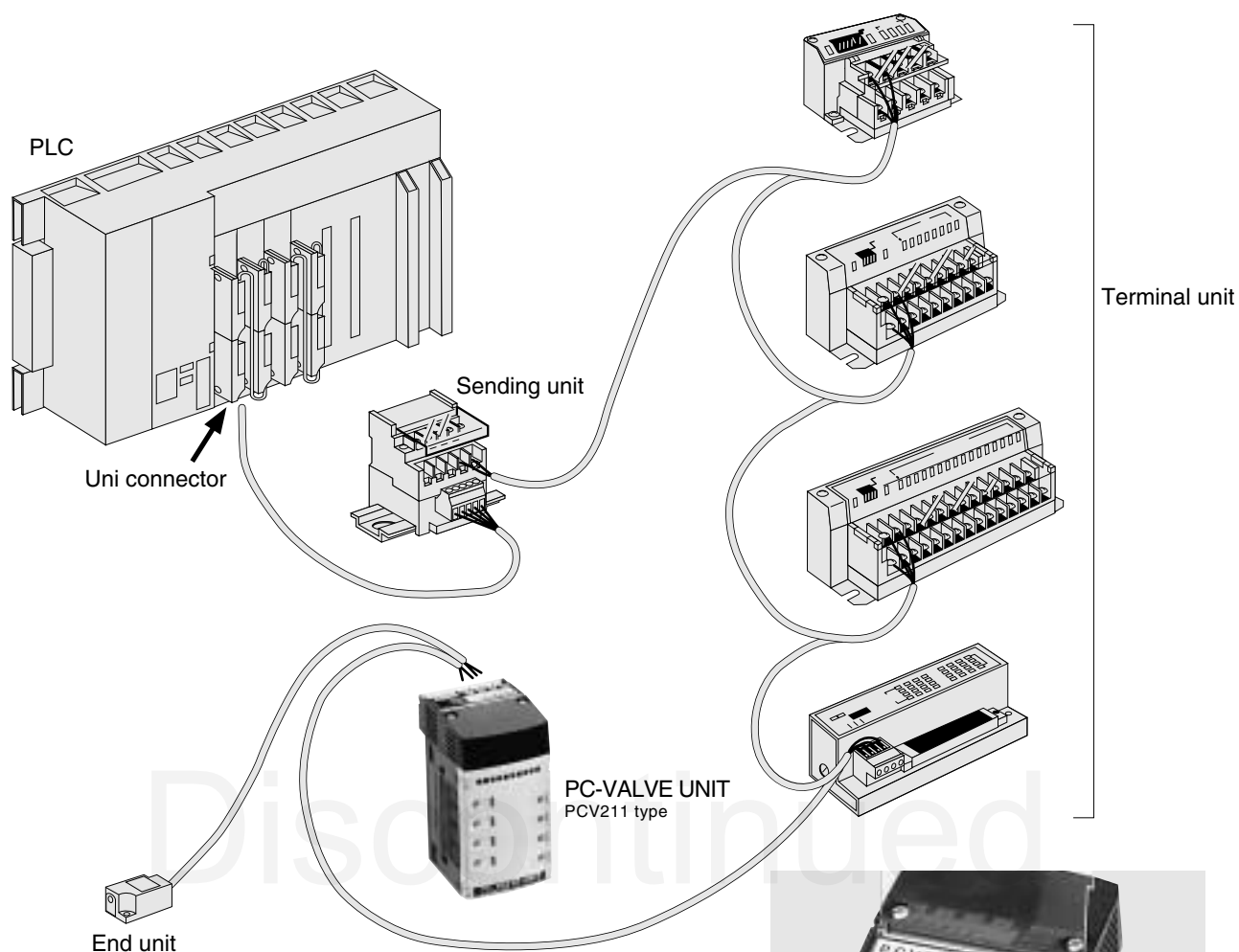


## Not Only the Appearance and Function but Also the Shape Is Clear and It Can Be Easily Ordered.

Since it is a package type, it does not need a troublesome order form, and it can be easily ordered. When the combination other than the standard package is required, customized orders can be made.

# Conforming to UNI-WIRE® System Type

## System Configuration



## UNI-WIRE® System

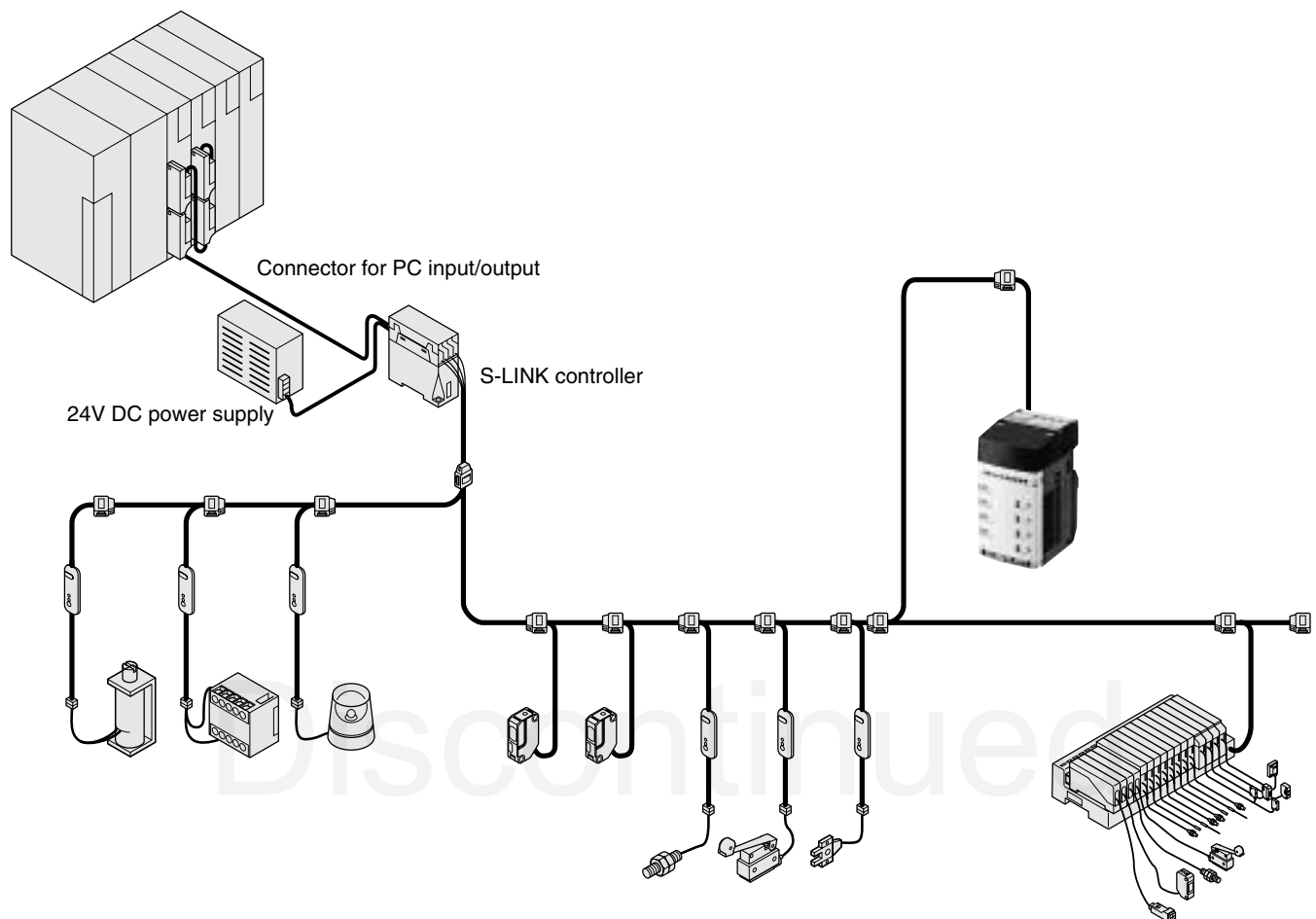
An independent transmission system that can be connected to controllers such as a personal computer, SBC, VME without being restrictions, and can transmit signals to decentralized devices such as solenoid valves on manifolds by 1 cable (2 leads). This system can be connected to an I/O unit for each company through a uni connector and sending unit and can control it without changing the program of the PC and other items. This system realizes a reduction of wiring and a remote transmission system by the controllers already installed without observing a UNI-WIRE System.

- ◎ Number of input/output points Maximum 128 points
- ◎ Maximum number of stations 20 stations
- ◎ Maximum total extension length 200 m

UNI-WIRE® System is a serial parallel transmission system developed jointly by NKE and Kuroda Precision Industries. The UNI-WIRE Systems peripheral equipment is sold separately. For details about usage, see the UNI-WIRE Systems manual.

# Conforming to S-LINK System Type

## System Configuration



## S-LINK

- Sensor & wiring reduction link system by Sunx.
- Input/output of 128 points can be transmitted by 2 signal cables.  
Also T-shaped branch multi drop connection can be used that never existed before.
- Can be used with any PC.
- Signal transmission with high reliability can be realized by loop connection.

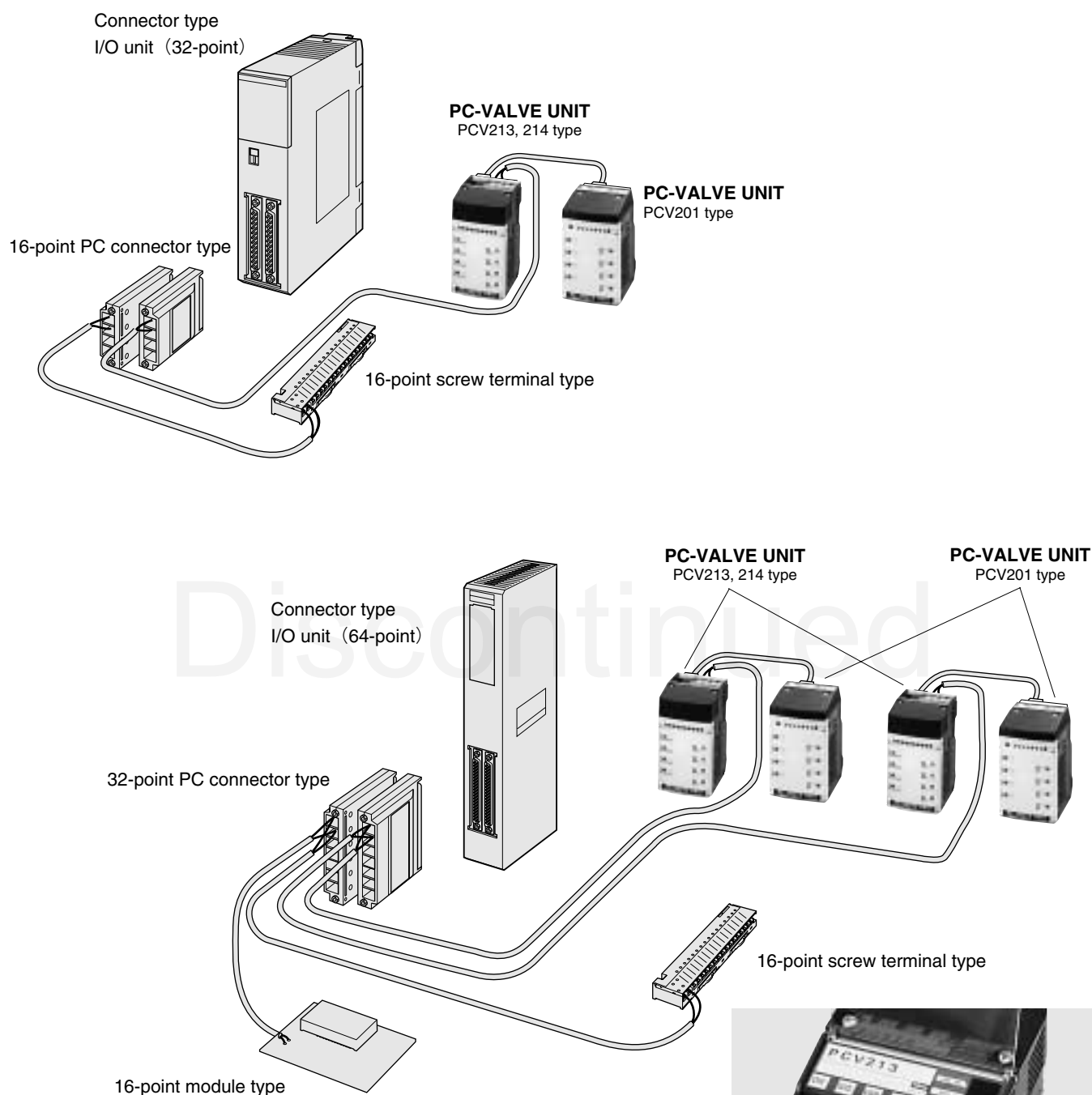
※ S-LINK is a wiring saving link system by Sunx.  
Purchase devices required to construct system separately.  
Contact Sunx for details.



# Conforming to B7A Link Terminal Type (Standard, High Speed Type)

## System Configuration

### Example of connection with PC



### Directly connected to OMRON Corporation B7A Link Terminal (16-point)

- Control signal of 16 points can be transmitted by a pair of cables (2 leads).
- 8 points of 16 points are allocated to output to PC-VALVE UNIT, and the remaining 8 points are output to the outside.
- 2 types of transmission delay time are available : Standard type (19.2ms): PCV213, and high speed type (3ms): PCV214.
- Maximum transmission distance can be up to 500m with the standard type.



B7A Link Terminal is a system by Omron.  
For details, see the Omron catalog and document.

# Specifications

## Unit Specifications

| Basic model  |           | PCV201<br>PCV202   | PCV203<br>PCV204 | PCV205<br>PCV206 | PCV211                               | PCV212 | PCV213<br>PCV214 |                |
|--|-----------|--|------------------|------------------|--------------------------------------|--------|------------------|----------------|
| Media  |           | Air  |                  |                  |                                      |        |                  |                |
| Operation method   |           | Internal pilot type (inside the unit)                                      |                  |                  |                                      |        |                  |                |
| Operating pressure range      MPa {kgf/cm²}  |           | 0.15～0.7 {1.5～7.1}   |                  |                  |                                      |        |                  |                |
| Proof pressure      MPa {kgf/cm²}  |           | 1.05 {10.7}  |                  |                  |                                      |        |                  |                |
| Operating temperature range      °C  |           | 5～50   |                  |                  | 5～40                                 |        |                  |                |
| Shock resistance      m/s² {G}   |           | 1373.0 {140} (axial direction 294.2 {30})                                  |                  |                  | 98.1 {10}                            |        |                  |                |
| Mounting direction   |           | Any  |                  |                  |                                      |        |                  |                |
| Unit structure   |           | Pilot valve/Main valve separate type                                       |                  |                  |                                      |        |                  |                |
| Number of pilot control points   |           | Max. 8 points  |                  |                  |                                      |        |                  |                |
| Number of mounted main valves  |           | Max. 8 (All single solenoid valves) or Max. 4 (All double solenoid valves) |                  |                  |                                      |        |                  |                |
| Port size  | P port    | φ 6mm quick fitting×1 plc.   |                  |                  |                                      |        |                  |                |
|  | R port    | φ 6mm quick fitting ×2 plcs.   |                  |                  |                                      |        |                  |                |
|  | A, B port | φ 4mm quick fitting  |                  |                  |                                      |        |                  |                |
| Rated voltage      DC V  |           | 24   |                  |                  |                                      |        |                  |                |
| Operating voltage range (±10%)      DC V   |           | 21.6～26.4  |                  |                  | 21.6～26.4 Ripple 0.5 Max. Vp.p       |        |                  |                |
| Current (When rated voltage and 8 points are simultaneously operated)      mA          |           | 400 (Max./UNIT)  |                  |                  |                                      |        |                  |                |
| Power consumption (When rated voltage and 8 points are simultaneously operated)      W |           | 9.6 (Max./UNIT)  |                  |                  |                                      |        |                  |                |
| LED indicator  |           | Power supply: Green  | Operation: Red   | Operation: Red   | Power supply and transmission: Green |        |                  | Operation: Red |
| Surge suppression  |           | Flywheel diode+ zener diode  |                  |                  | Flywheel diode                       |        |                  |                |
| Insulation resistance  |           | Between external terminal and case Min. 20M Ω                              |                  |                  |                                      |        |                  |                |
| Voltage resistance   |           | Between external terminal and case 1000V for one minute                    |                  |                  |                                      |        |                  |                |

Remark: Conversion to psi., 1Mpa=145psi., 1kgf/cm<sup>2</sup>=14.2psi., e.g. 0.15Mpa=21.8psi.

## Valve Specifications

| Basic model |   | PCZ2510                                  | PCZ2520                     | PCZ2530        | PCZ2540        | PCZ2550        |
|-------------|---|--|-----------------------------|----------------|----------------|----------------|
| Pilot valve | Operation method                          | Direct acting (for main valve operation) |                             |                |                |                |
|             | Seal type                                 | Elastic, poppet type                     |                             |                |                |                |
|             | Solenoid rated voltage                    | V DC                                     | 24                          |                |                |                |
|             | Operating voltage range (±10%)            | V DC                                     | 21.6 ~26.4                  |                |                |                |
|             | Current (When rated voltage is applied)   | mA                                       | 50/1 point                  |                |                |                |
|             | Maximum allowable leakage current         | mA                                       | Max. 3 (removed voltage 2V) |                |                |                |
|             | Power consumption                         | W  | 1.2/1 point                 |                |                |                |
|             | Manual override                           | With locking mechanism                   |                             |                |                |                |
| Main valve  | Operation method                          | Air operating by pilot valve             |                             |                |                |                |
|             | Seal type                                 | Elastic seals on spool type              |                             |                |                |                |
|             | Number of positions                       | 2 positions                              |                             | 3 positions    |                |                |
|             | Number of ports                           | 5 ports                                  |                             |                |                |                |
|             | Valve function                            | Single                                   | Double                      | All port block | ABR connection | PAB connection |
|             | Number of points occupied by pilot        | 1  | 2                           | 2              | 2              | 2              |
|             | Effective area                            | mm <sup>2</sup>                          | 2.0                         | 1.7            |                |                |
|             | Response time※                            | OFF→ON                                   | ms                          | Max. 15        |                |                |
|             |   | ON→OFF                                   | ms                          | Max. 20        |                |                |
|             | Maximum operating frequency               | Hz                                       | 5                           |                |                |                |
|             | Minimum time to energize for self holding | ms                                       | —                           | 50             | —              |                |

※: Values when mounted on a unit, and 0.5MPa {5.1kg f /cm<sup>2</sup>} applied.

## Wiring Specifications

| Item \ Basic model | PCV201<br>PCV202  | PCV203<br>PCV204          | PCV205<br>PCV206               | PCV211  | PCV212   | PCV213<br>PCV214  |
|--------------------|---|---------------------------|--------------------------------|---|--|---|
| Type               | Flat cable connector<br>10-pin                                      | D sub connector<br>15-pin | Flat cable connector<br>10-pin | M3 terminal screw<br>4P<br>(D,G,24V,0V)                 | M3 terminal screw<br>4P<br>(G,D,0V,24V)                                    | M3 terminal screw<br>4P<br>(0V,SIG,ERR,24V)             |
| Common             | 201,203,205 (plus common), 202,204,206 (minus common)               |                           |                                | Plus common   |  |   |
| Others             | External power supply connector and cable (length 2000 mm) included |                           | —                              | ● With address setting SW<br>● With output selection SW | ● With address setting SW<br>● With abnormal operation output selection SW | ● With address setting SW<br>● With output selection SW |

## Output Specifications (External Output)

| Item \ Basic model | PCV211 | PCV212 | PCV213   | PCV214 |
|--------------------|--------|--------|--|--------|
| Output type        | —      | —      | NPN open connector   |        |
| Rated load voltage | —      | —      | DC24V  |        |
| Output current     | —      | —      | Sink current Max. 50mA /1 point, sink current Max. 40mA (error output) |        |

## Transmission Specifications

| Item \ Basic model         | PCV211   | PCV212                                | PCV213   | PCV214    |
|----------------------------|--|---------------------------------------|--|-----------|
| Noise resistance           | 1,200Vp-p (pulse width 1μs)                        | —                                     | Noise level 1.5kV, pulse width 100ns, 1μs            |           |
| Transmission method        | Bidirectional time division multiplex transmission |                                       | Monodirectional time division multiplex transmission |           |
| Synchronous method         | Bit synchronous method                             |                                       | —  |           |
| Transmission procedure     | UNI-WIRE protocol                                  | S-LINK protocol                       | —  |           |
| Transmission speed         | 28.5kbps   |                                       | —  |           |
| Delay time of transmission | 10.7ms (Max.)                                      |                                       | Max. 31ms  | Max.5ms   |
| Connection method          | Multi drop connection                              | T-shaped branch multi drop connection | 1 to 1   |           |
| Transmission distance      | Max. 200m  |                                       | Max. 500m  | Max. 100m |

## Mass

### ● Package type mass

g

| Package model | Mass                  |             |                     |
|---------------|-----------------------|-------------|---------------------|
|               | PCV201, 202, 205, 206 | PCV203, 204 | PCV211,212, 213,214 |
| A             | 484                   | 489         | 508                 |
| B             | 492                   | 497         | 518                 |
| C             | 452                   | 457         | 478                 |
| D             | 420                   | 425         | 446                 |
| E             | 424                   | 429         | 450                 |
| F             | 488                   | 493         | 514                 |

### ● Additional mass of full choice type

g

| Model              | Unit basic mass | Additional mass of mounting valve |                            |                            |   | Additional mass of mounting base |                   |                        |                      | Power cable additional mass<br>PCV2-DC |
|--------------------|-----------------|-----------------------------------|----------------------------|----------------------------|---|----------------------------------|-------------------|------------------------|----------------------|--|
|                    |                 | Space block<br>PCZ2500            | Single solenoid<br>PCZ2510 | Double solenoid<br>PCZ2520 | 3-position<br>PCZ2530<br>PCZ2540<br>PCZ2550 | Flange type<br>-B1               | Angle type<br>-B2 | Long angle type<br>-B3 | DIN rail type<br>-B4 |  |
| PCV201Z<br>PCV202Z | 300             | 7                                 | 23                         | 48                         | 47  | 56                               | 44                | 167                    | 117                  | 19                                     |
| PCV203Z<br>PCV204Z | 305             |                                   |                            |                            |   |                                  |                   |                        |                      |  |
| PCV205Z<br>PCV206Z | 300             |                                   |                            |                            |   |                                  |                   |                        |                      |  |
| PCV211Z            | 326             |                                   |                            |                            |   |                                  |                   |                        |                      |  |
| PCV213Z<br>PCV214Z | 326             |                                   |                            |                            |   |                                  |                   |                        |                      |  |

Calculation example : For mounting 6 single solenoids, 1 double solenoid, with flange type mounting base to PCV201Z (PCV201Z-B1 stn.1~6 PCZ2510

stn.7 PCZ2520) ,

$300 + (23 \times 6 + 48) + 56 = 542\text{g}$

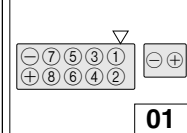


# Order Code

## Order Code

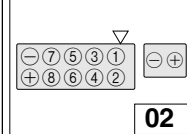
### Wiring

Flat cable connector 10-pin



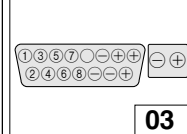
● Plus common, with power supply connector

Flat cable connector 10-pin



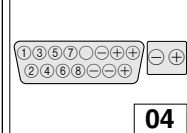
● Minus common, with power supply connector

D-sub connector 15-pin



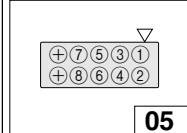
● Plus common, with power supply connector

D-sub connector 15-pin



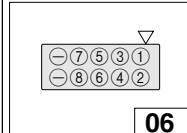
● Minus common, with power supply connector

Flat cable connector 10-pin



● Plus common, without power supply connector

Flat cable connector 10-pin

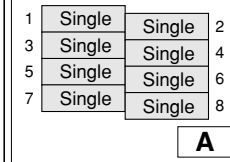


● Minus common, without power supply connector

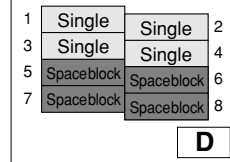
Unit basic model

### Mounted valve package

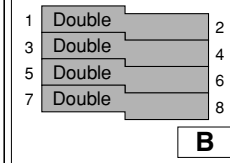
Single solenoid 8 stns.



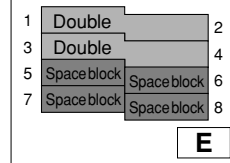
Single solenoid 4 stns.



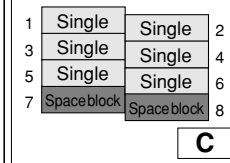
Double solenoid 4 stns.



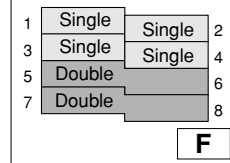
Double solenoid 2 stns.



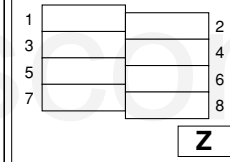
Single solenoid 6 stns.



Single 4 stns., Double 2 stns.



**Full choice type**  
This type is used when selecting mounting valves with a customized order other than the packages above. Be sure to indicate customized order code for stn.1~8.



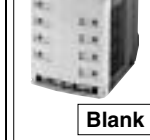
### Exhaust valve

**Blank** : Standard

**-EP** : Exhaust valve built-in type  
(For prevention of back pressure from main valve)

### Mounting base

Without mounting base



**Blank**

Flange type



**-B1**

Long angle type

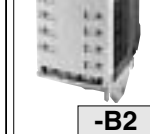


**-B3**

● With two mounting screws

● With four mounting screws

Angle type



**-B2**

● With two mounting screws

DIN rail type



**-B4**

● With two mounting screws

### Customized order code

(Indicate only when full choice type is selected.)

**PCZ2500**: Space block

**PCZ2510**: Single solenoid (2-position)

**PCZ2520**: Double solenoid (2-position)

**PCZ2530**: All port block (3-position)

**PCZ2540**: ABR connection (3-position)

**PCZ2550**: PAB connection (3-position)

**PCV2**

01 06  
02 11  
03 12  
04 13  
05 14

A D  
B E  
C F  
Z

**-EP**

-B1  
-B2  
-B3  
-B4

stn. 1  
:  
stn. 8

● The number of above wiring diagram show solenoid (station) number.

● When double solenoid valve is used, mount it on station 1, 3, 5 and 7. In this case, the next even numbered station cannot be designated.  
● When adding or replacing mounting valves, please contact us.

### Additional Parts (Sold Separately)

Mounting base

Flange type



**PCV2-B1**

● With two mounting screws

Angle type



**PCV2-B2**

● With two mounting screws

Long angle type



**PCV2-B3**

● With four mounting screws

DIN rail type



**PCV2-B4**

● With two mounting screws

Power supply cable  
(Cable length:2000mm)



**PCV2-DC**

● Attached to PCV201~204 as standard

Dedicated tool for removing tube



**PCV2-QJ**

● Attached as standard

Muffler



**KM-J6**

● For  $\phi 6$  quick fitting (1 set of 10 mufflers)

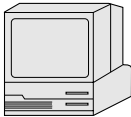
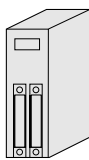
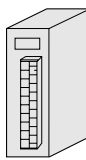
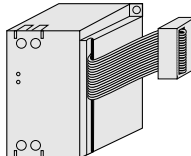
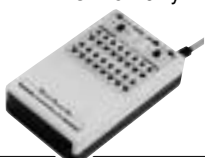



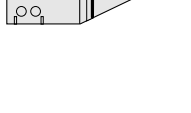

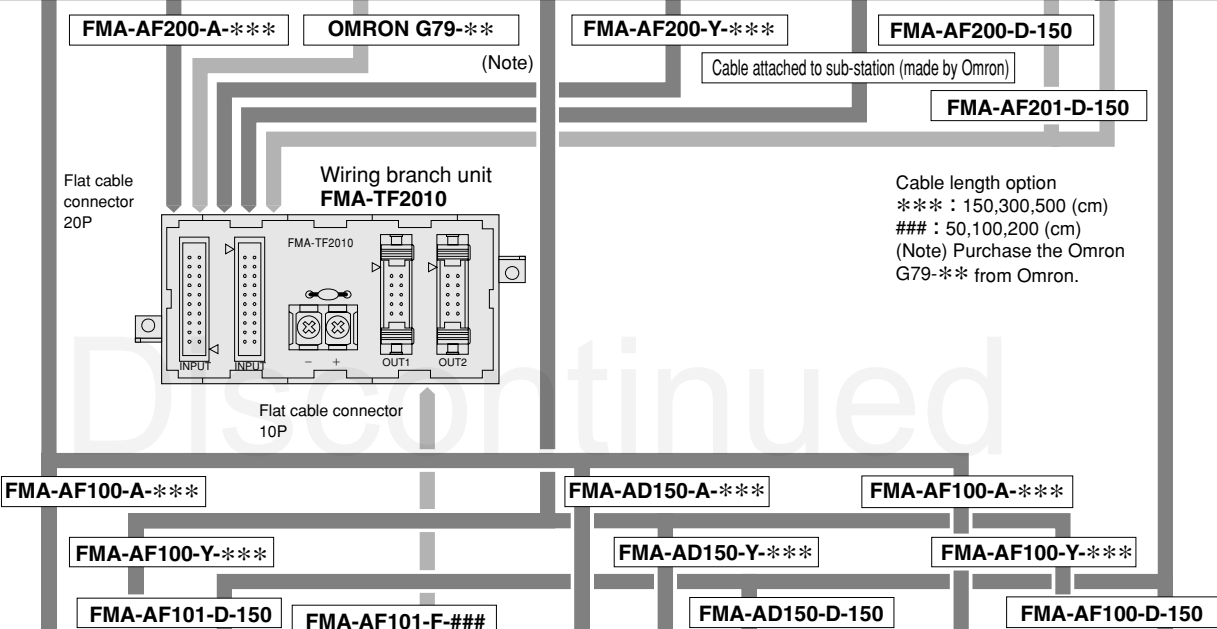



Dedicated cable for S-LINK



**YS151-KB2**

● Cable length:2000mm

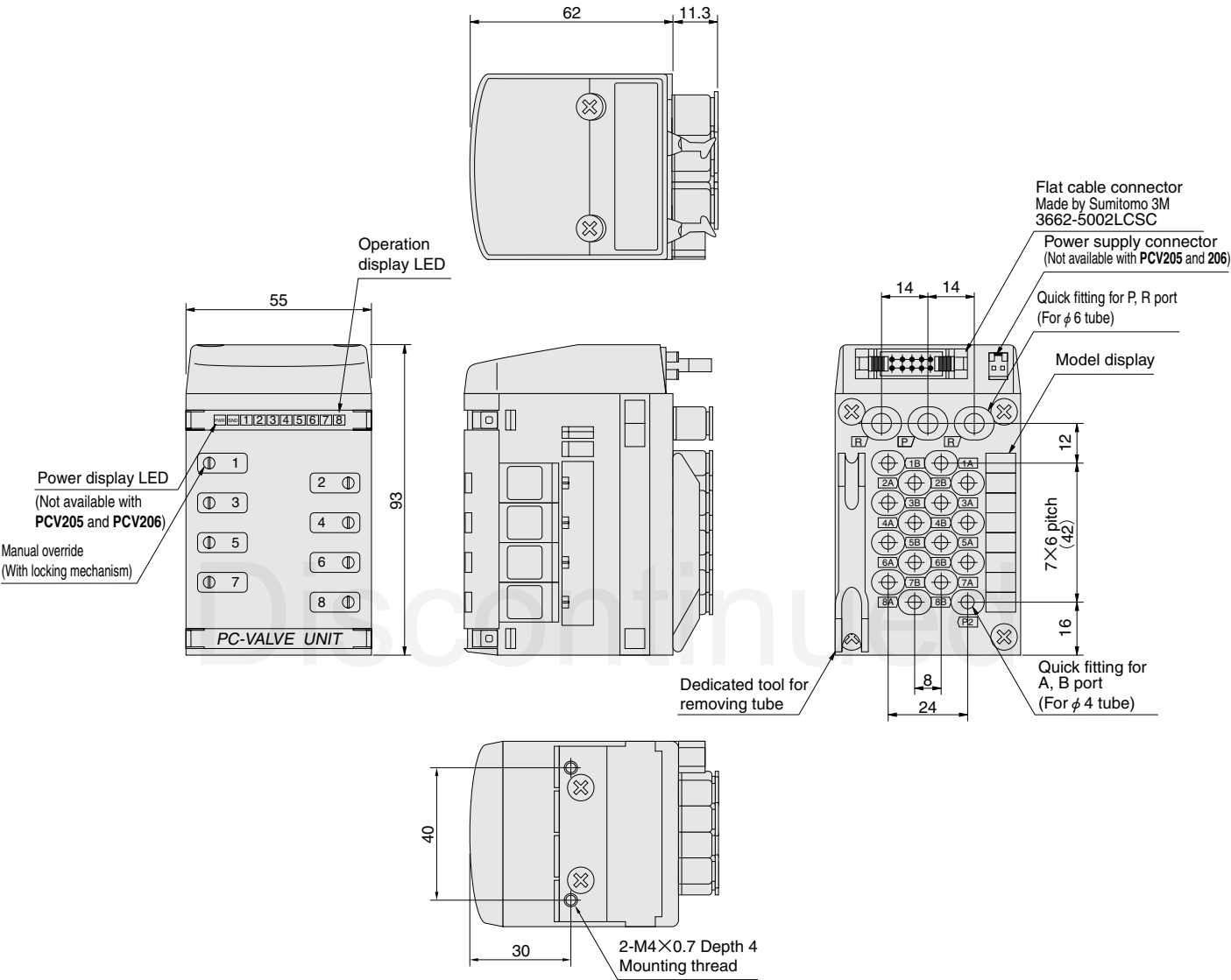
# Table of Cable Assemblies and Connector Cables

| Control side       |   |  |  |  |   |
|--------------------|---|--|--|--|---|
| Connection devices | <b>Connectors</b><br>                        | <b>Connector type output card</b><br>   | <b>Terminal block output card</b><br>                         | <b>Serial transmission sub-station</b><br>  | <b>Remote control box</b><br>For FMA-RCB16D only<br> |
| Connection type    | Output type<br>●AWG 28<br>With numbering<br> | ●Fujitsu 360 connector 24P<br>FCN361J-024-AU connector<br>FCN361C-024-B cover<br> | PC terminal type output<br>●M3.5 (Max.)<br>With numbering<br> | <br><br>A cable attached to sub-station (made by Omron) is connected to the body. | Connection cable<br>●D sub connector 25P<br>         |
|                    | 8-point    16-point   |  | 8-point    16-point  |  |   |
| Order code         |    |  |  |  |   |
|                    |   |  |  |  |   |
| Connection type    | <br>Flat cable connector 10P               | <br>D sub connector 15P   | <br>Flat cable connector 10P                              |  |   |
|                    | <b>PCV201/PCV202</b>  | <b>PCV203/PCV204</b>   | <b>PCV205/PCV206</b>   |  |   |
| Operation side     |   |  |  |  |   |
|                    | Flat cable connector 10P<br>(PCV201/PCV202/PCV205/PCV206)   |  | D sub connector 15P<br>(PCV203/PCV204)   |  |   |
| Connector          | ●Press hold type<br>Made by Sumitomo 3M<br>Socket : 7910-6500SC<br>Strain relief : 3448-7910<br><b>FMA-BF10SA</b>             |  | ●Press hold type<br>Made by Japan Aviation Electronics Industry<br>Socket : DASP-JB15S<br>Strain relief : DASP-SR<br><b>FMA-BD15SA</b>         |  | ●Solder type<br>Made by Japan Aviation Electronics Industry<br>Socket : DA-15S-N<br><b>FMA-BD15SH</b>                                   |
| Flat cable         | Flat cable 10 leads<br>UL-20012-ST10×28AWG Made by Hitachi Cable<br>Flat Ace<br>Cord type, 10m roll<br><b>FMA-CF10×10</b>     |  | Flat cable 20 leads<br>UL-20012-ST20×28AWG Made by Hitachi Cable<br>Flat Ace<br>Cord type, 10m roll<br><b>FMA-CF20×10</b>                      |  |   |
| Round cable        | Round cable 26 leads<br>UL-2464-SB (MA) -13P×28AWG Made by Hitachi Cable<br>MA cable, 10m roll<br><b>FMA-CR26×10</b>          |  |  |  |   |

# Dimensions of PC-VALVE UNIT

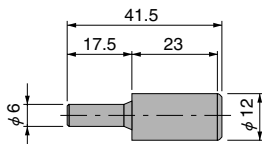
## Dimensions of Flat Cable Connector Type (Scale 1/2, Unit mm)

- PCV201/PCV202 (with power supply connector)
- PCV205/PCV206 (without power supply connector)



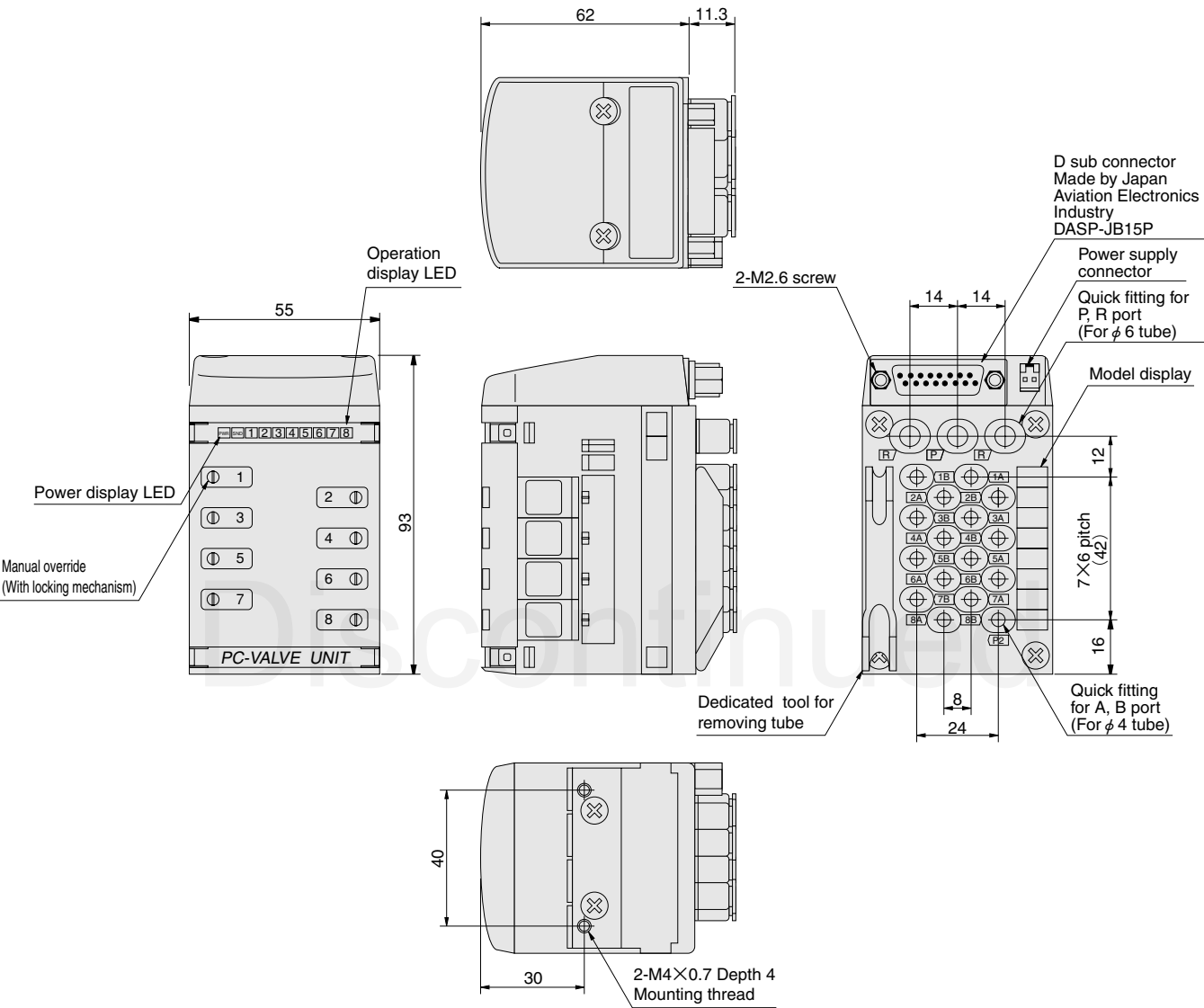
## Sold Separately

- Muffler : KM-J6



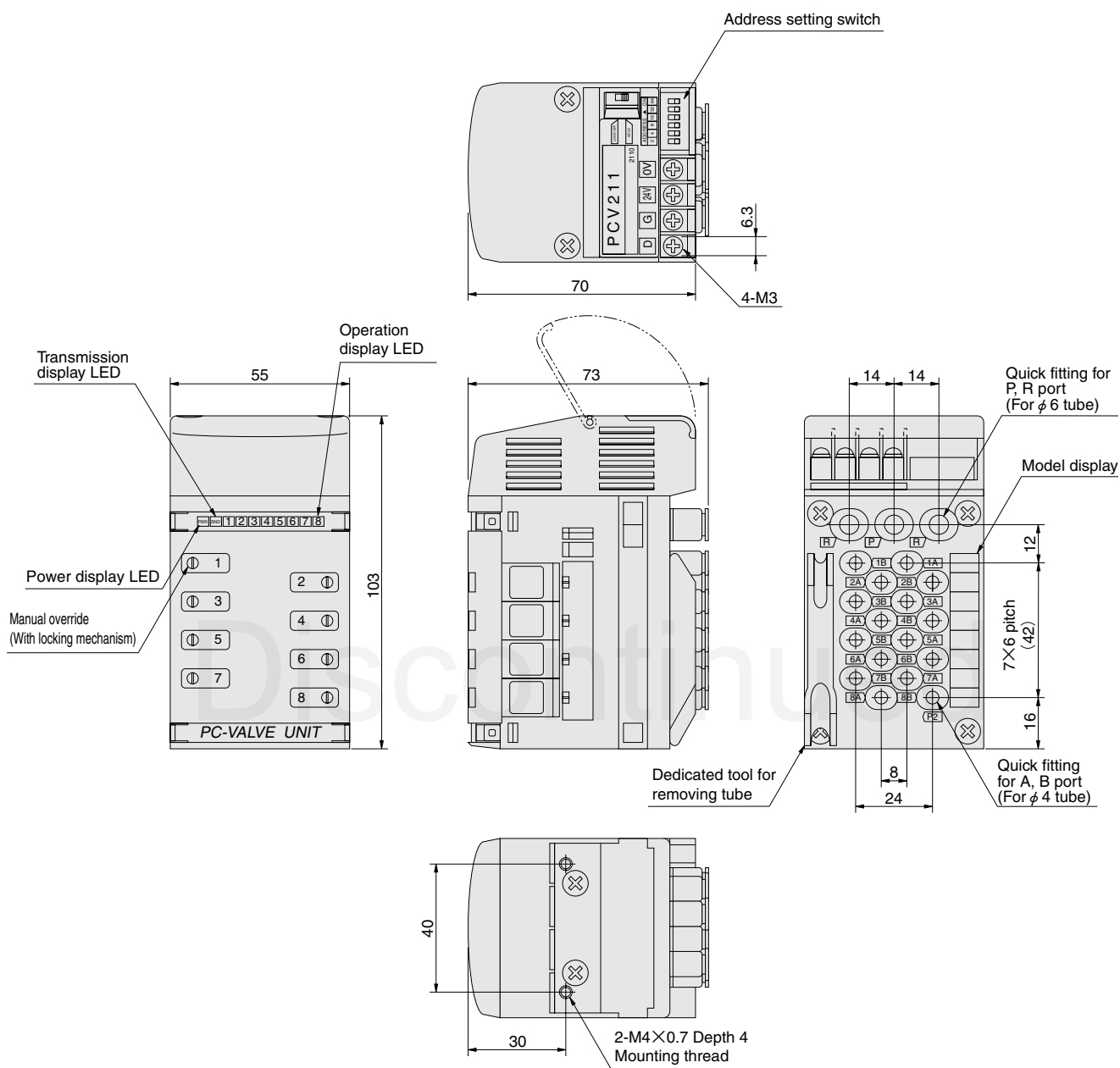
**Dimensions of D Sub Connector Type** (Scale 1/2, Unit mm)

●PCV203/PCV204 (with power supply connector)



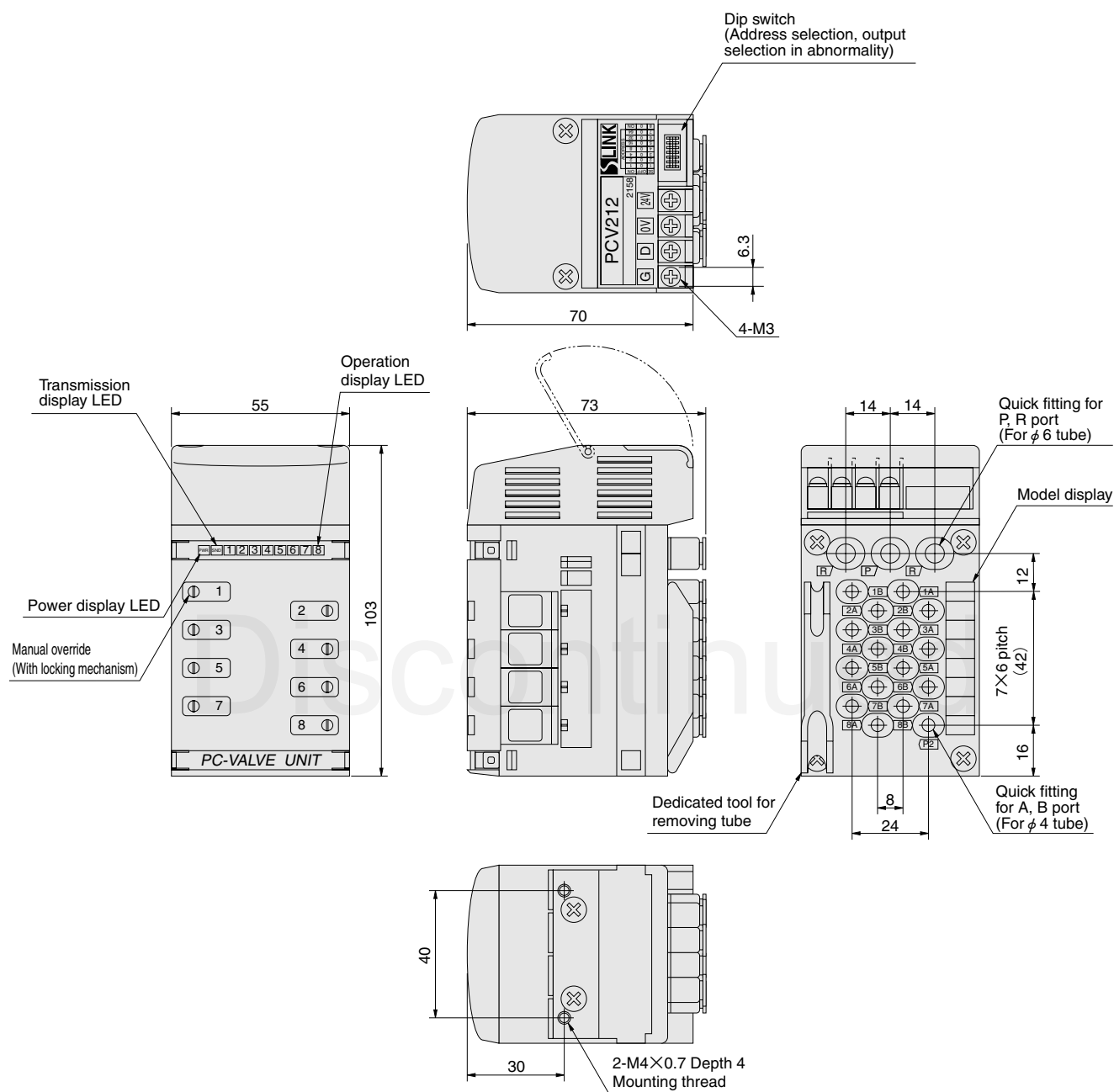
## Dimensions of Conforming to UNI-WIRE System Type (Scale 1/2, Unit mm)

### ●PCV211



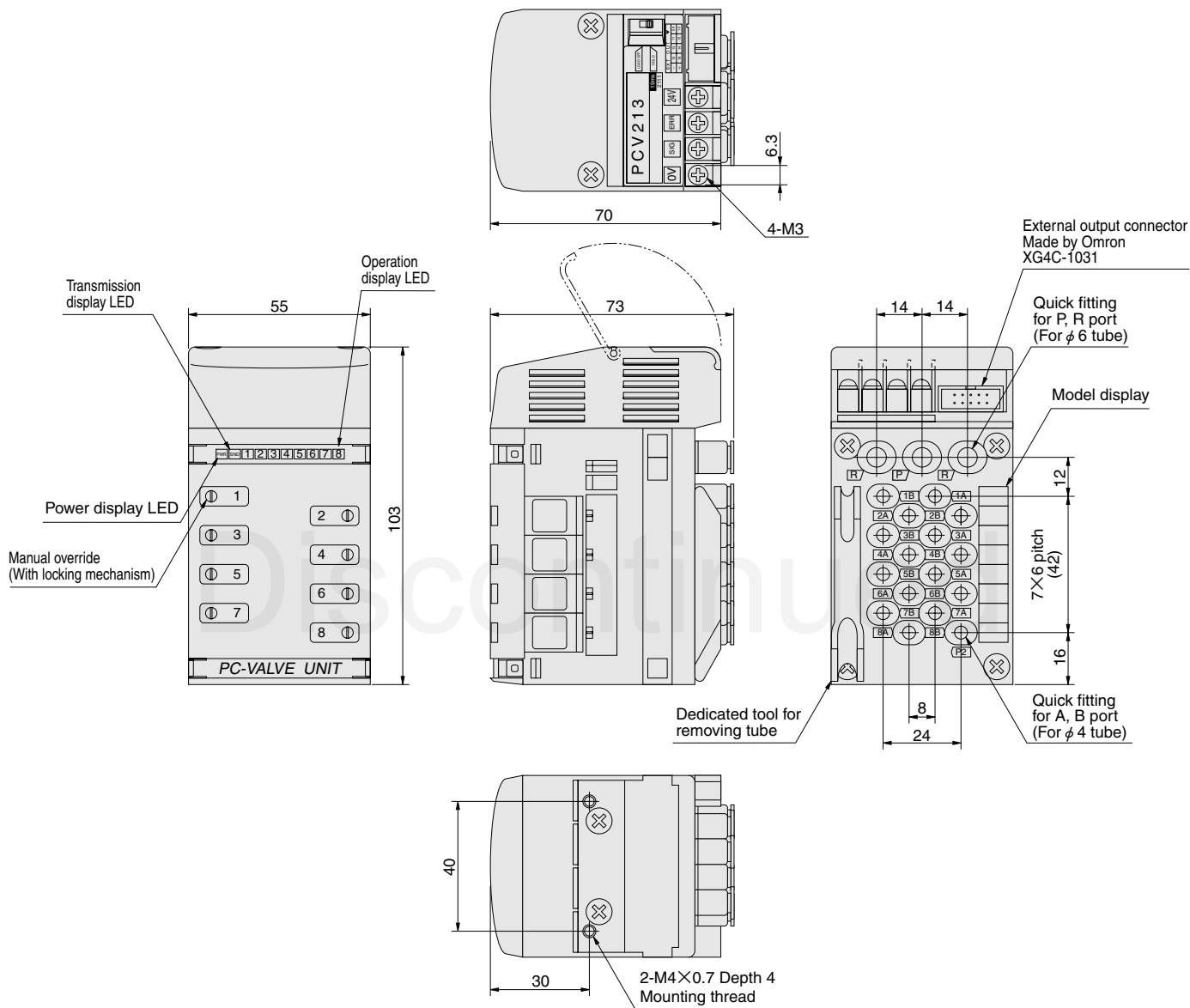
## Dimensions of Conforming to S-LINK Type (Scale 1/2, Unit mm)

### ●PCV212



Dimensions of Conforming to B7A Link Terminal Type (Scale 1/2, Unit mm)

- PCV213 (Standard : 19.2ms type)
- PCV214 (High speed : 3ms type)

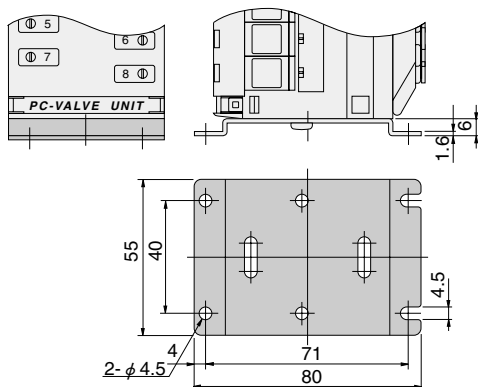


## Dimensions of Mounting Base (Scale 1/3, Unit mm)

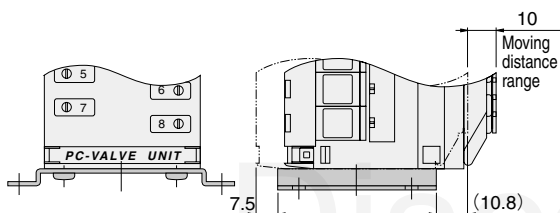
### ● Flange type : -B1



PCV-BASE



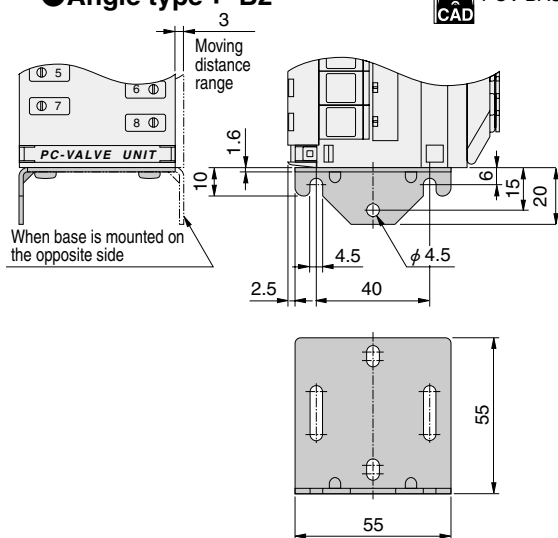
### ● When the base is rotated 90° for mounting



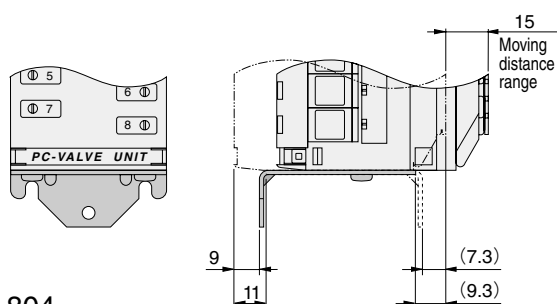
### ● Angle type : -B2



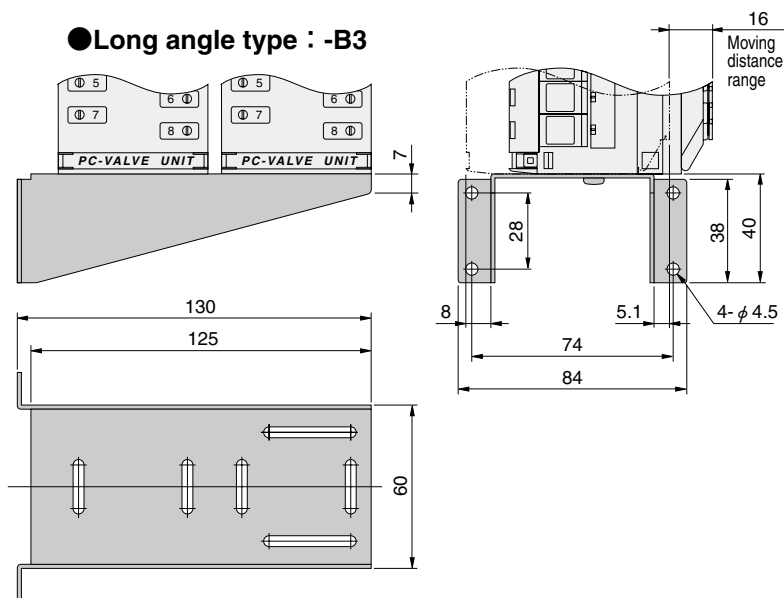
PCV-BASE



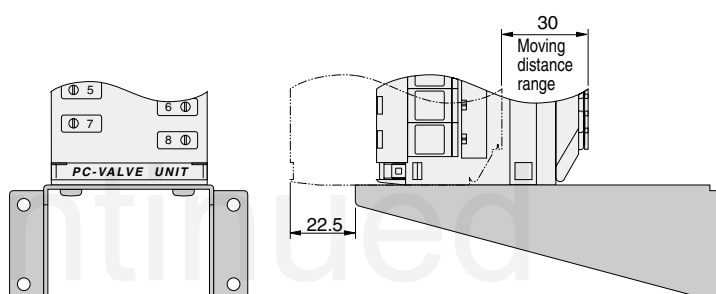
### ● When the base is rotated 90° for mounting



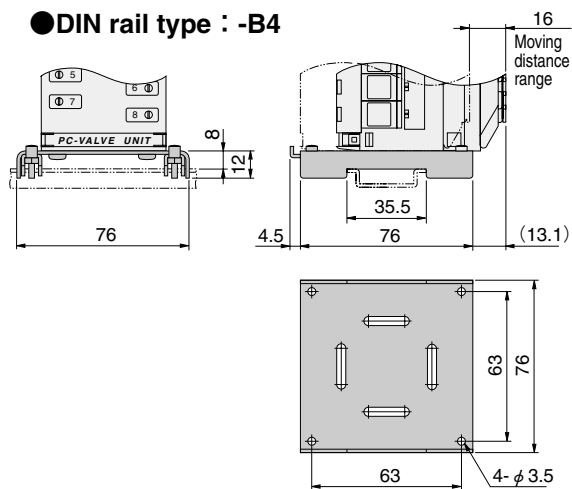
### ● Long angle type : -B3



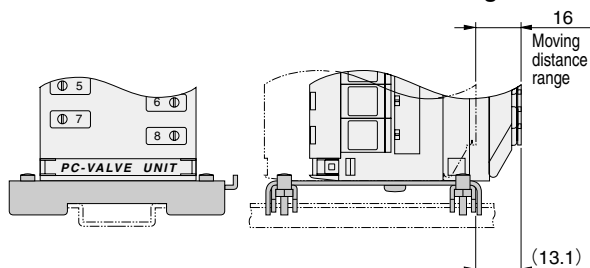
### ● When the base is rotated 90° for mounting



### ● DIN rail type : -B4



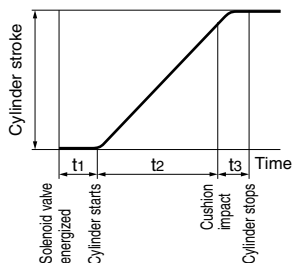
### ● When the base is rotated 90° for mounting





## Cylinder Operating Speed

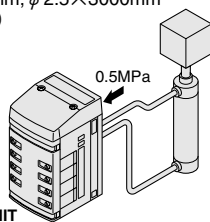
### Cylinder operating speed



To obtain the time required for the cylinder to complete 1 stroke, add cylinder's delay time  $t_1$  (time between energizing of solenoid valve and actual starting of cylinder), to the cylinder's max. operating speed time  $t_2$ . When a cushion is used, add the cushioning time  $t_3$ , to the above calculation. Standard cushioning time  $t_3$  is approximately 0.2 seconds.

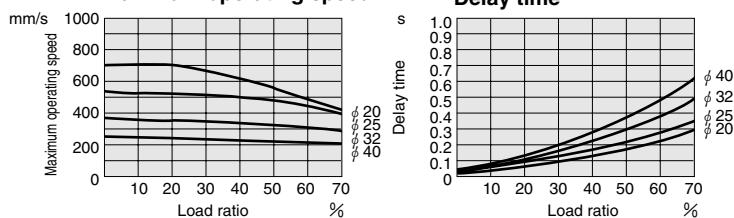
#### Measurement conditions

- Air pressure : 0.5MPa {5.1kgf/cm<sup>2</sup>}
- Piping inner diameter and length:  $\phi 2.5 \times 1000\text{mm}$ ,  $\phi 2.5 \times 3000\text{mm}$
- Fitting :  $\phi 4$  straight quick fitting (TSK4-M6M)
- Load ratio =  $\frac{\text{Load}}{\text{Cylinder theoretical thrust}} (\%)$
- Cylinder stroke : 150mm for  $\phi 20 \sim \phi 40$

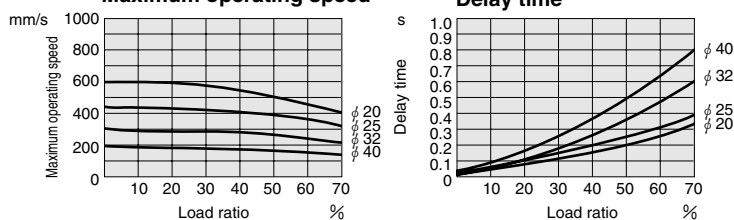


PC-VALVE UNIT

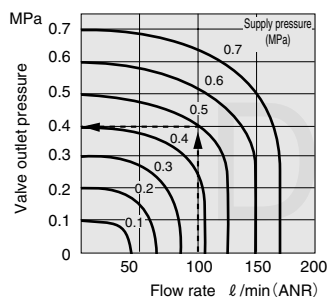
#### ● When tube length is 1000mm



#### ● When tube length is 3000mm



## Flow Rate



#### How to read the graph

If supply pressure is 0.5MPa and flow rate is 100 l/min (ANR), valve outlet pressure becomes 0.4MPa.

# FMA-TF2010 Wiring Branch Unit

Function : Converts the 16-point output on the control side to 8 units× 2 for compatibility with PC-VALVE UNIT.

Input : Two different wiring pattern. Select and wire according to the control side.

- Input 1 : Pin arrangement for Koganei F201, and for Omron's remote I/O sub-station G71-OD16
- Input 2 : Pin arrangement for Koganei F200

Power source : Equipped with terminal for external power source, and wrong polarity prevention diode. Using this power supply is also possible.

Output : Compatibility with PC-VALVE UNIT means simple connections with flat cable connector.

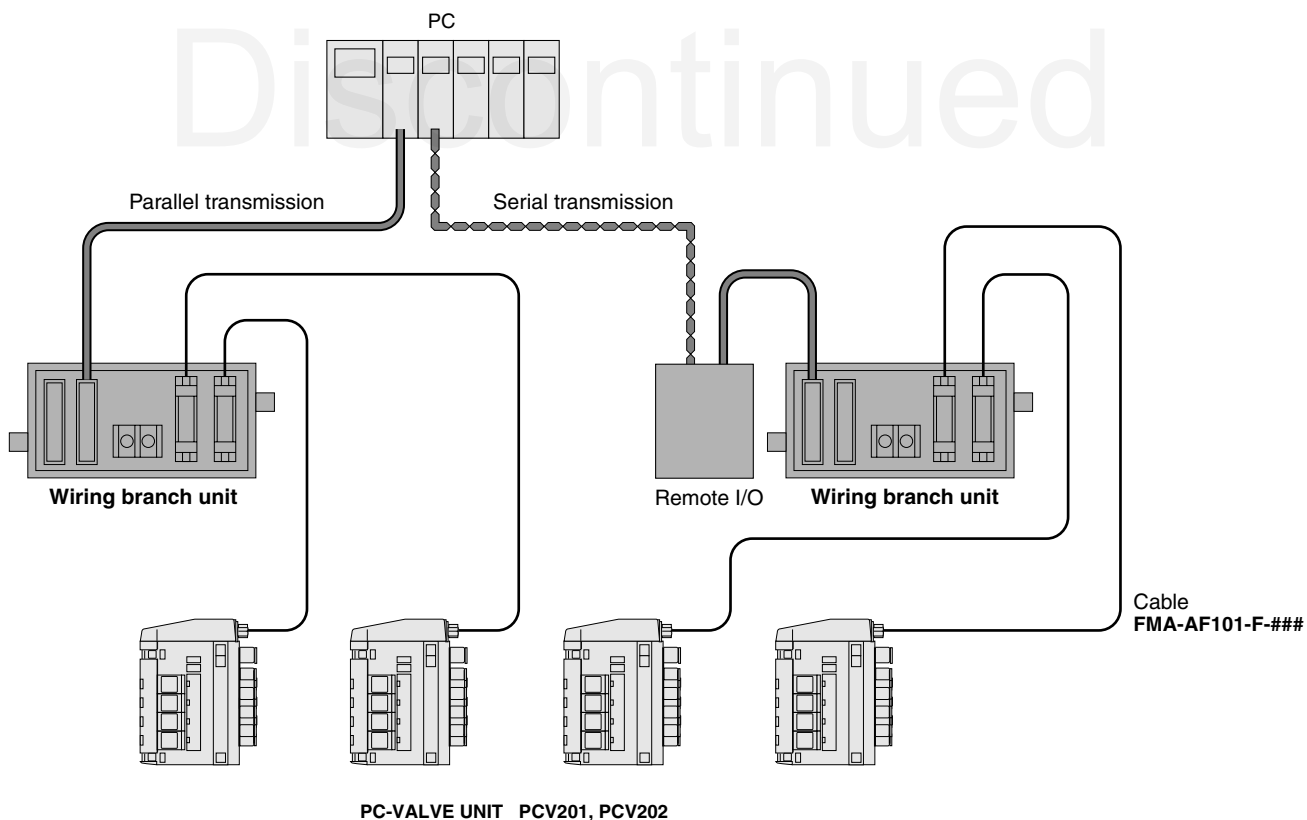
Mounting : Can be mounted on either DIN rail, or by direct mounting.

Other : Dedicated cables for PCV201 and PCV202 also available.

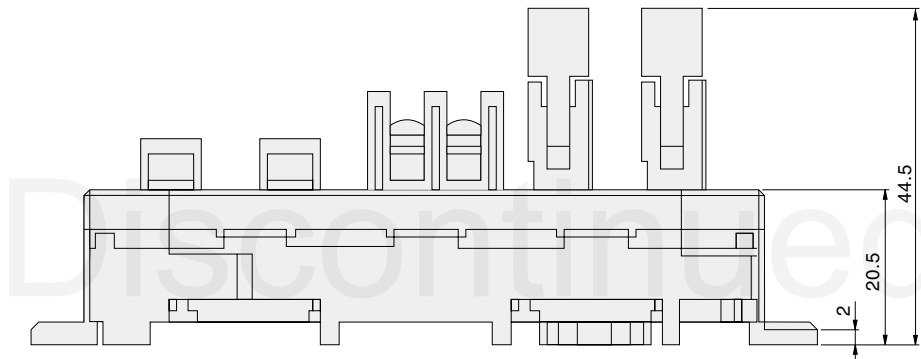
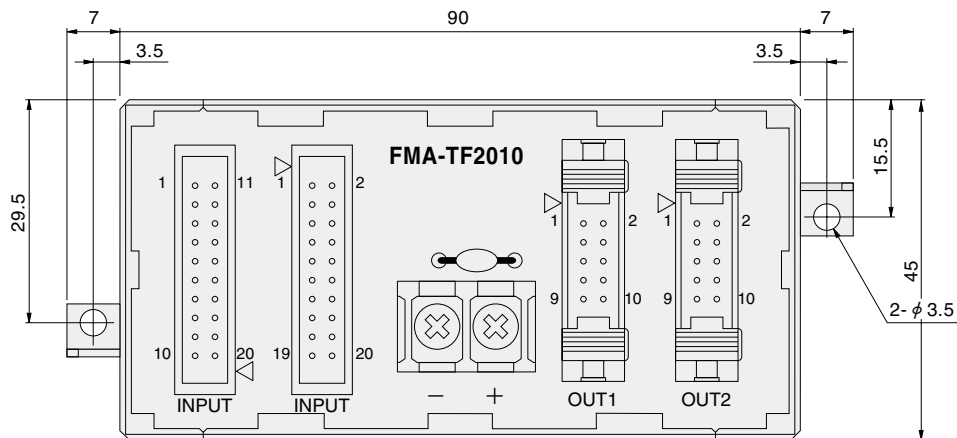
For details, see p. 798.



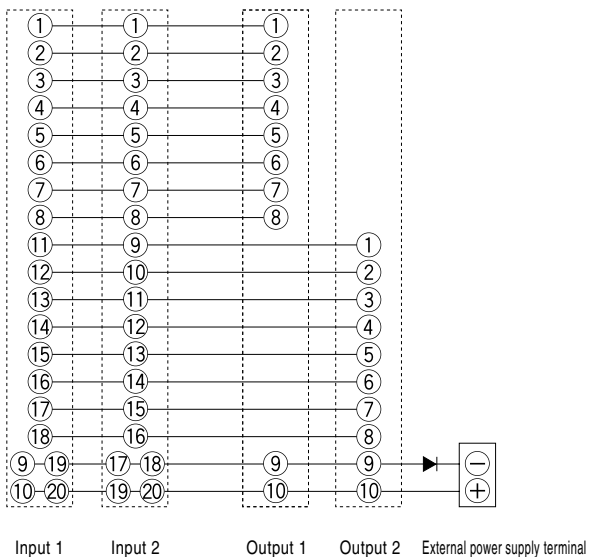
## Connecting example



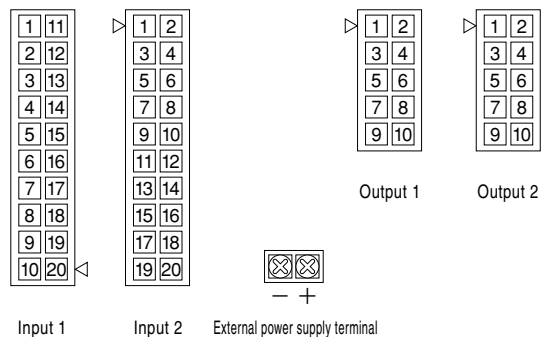
Dimensions of Wiring Branch Unit (Scale 1/1, Unit mm)



Internal circuit diagram



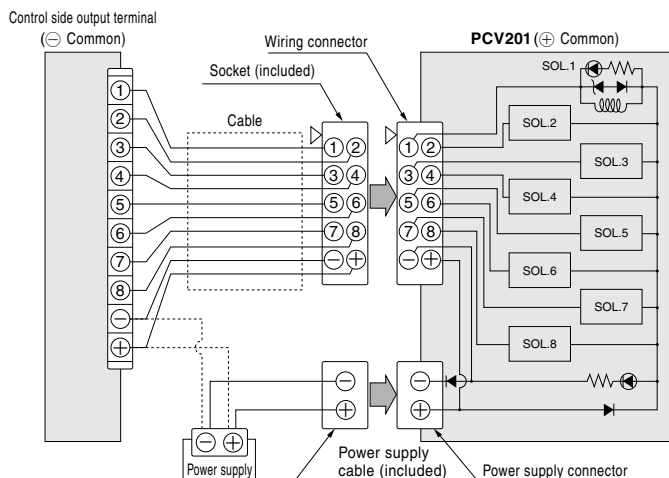
Pin locations diagram



## Internal Circuit and Wiring Connection Examples

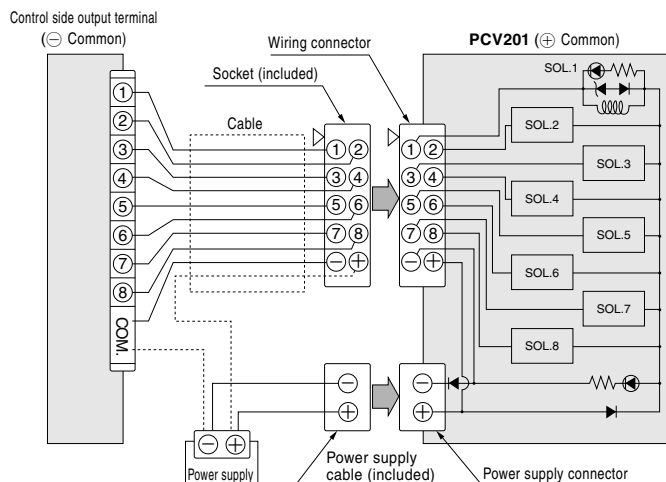
### ●PCV201

#### 1. When the control-side output terminals include power supply terminals $\oplus$ and $\ominus$ .



Though power is supplied from unit side, it can be supplied from control side as shown by dashed lines.

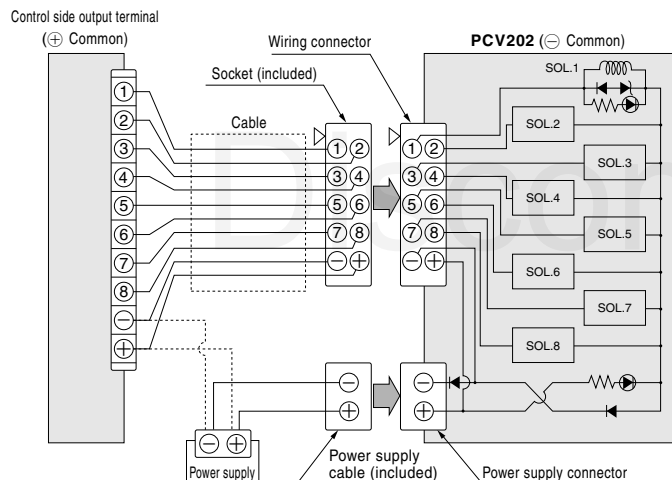
#### 2. When the control-side output terminals include "COMMON."



Though power is supplied from unit side, it can be supplied also from control side as shown by dashed lines.

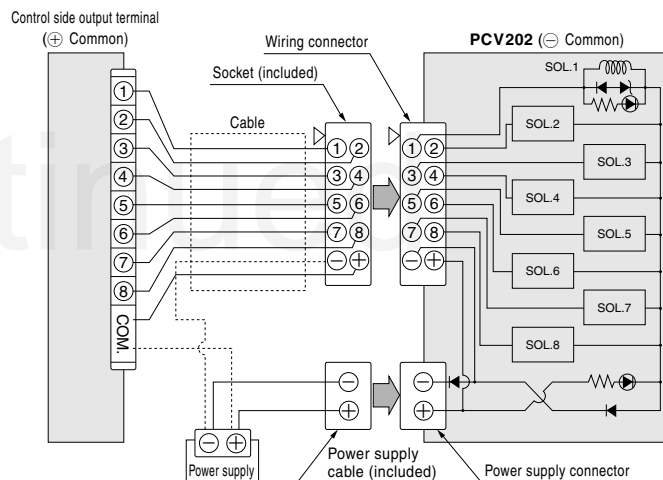
### ●PCV202

#### 1. When the control-side output terminals include power supply terminals $\oplus$ and $\ominus$ .



Though power is supplied from unit side, it can be supplied also from control side as shown by dashed lines.

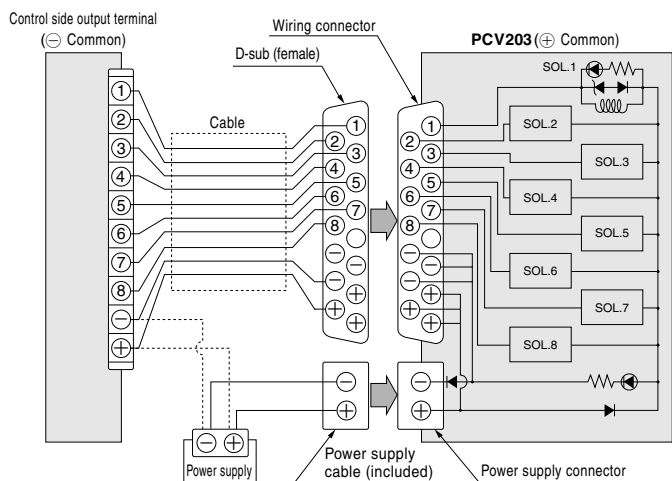
#### 2. When the control-side output terminals include "COMMON."



Though power is supplied from unit side, it can be supplied also from control side as shown by dashed lines.

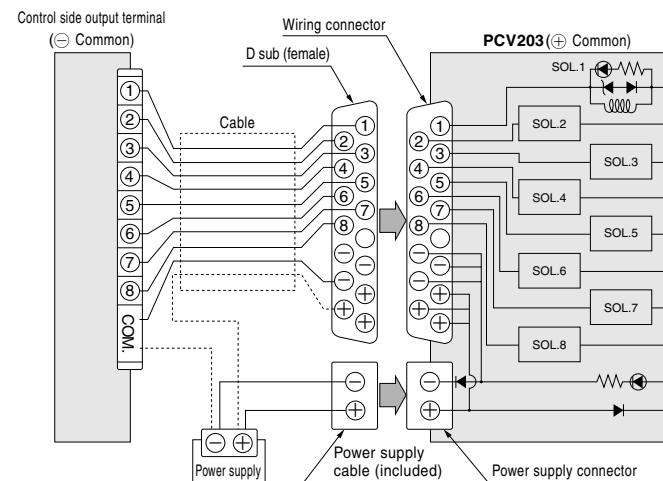
### ●PCV203

#### 1. When the control-side output terminals include power supply terminals $\oplus$ and $\ominus$ .



Though power is supplied from unit side, it can be supplied also from control side as shown by dashed lines.

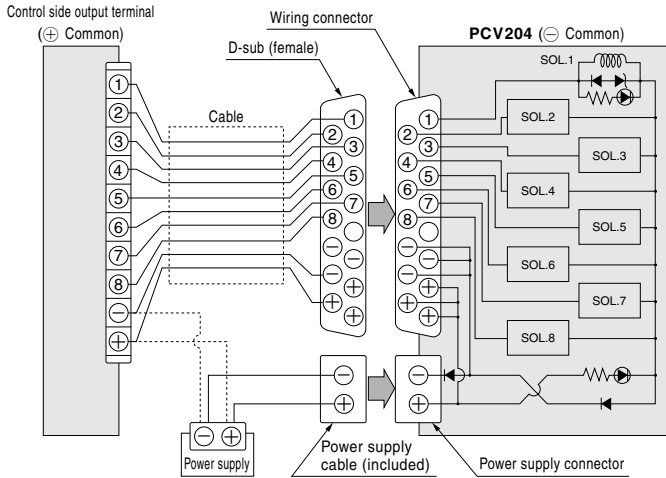
#### 2. When the control-side output terminals include "COMMON."



Though power is supplied from unit side, it can be supplied also from control side as shown by dashed lines.

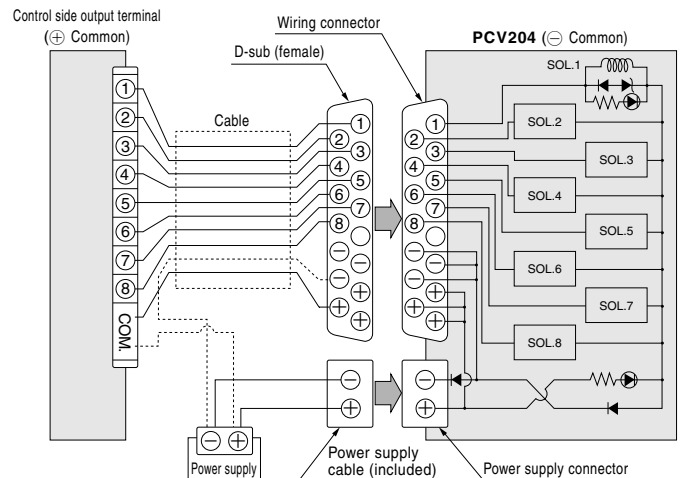
## ●PCV204

### 1. When the control-side output terminals include power supply terminals $\oplus$ and $\ominus$ .



Though power is supplied from unit side, it can be supplied also from control side as shown by dashed lines.

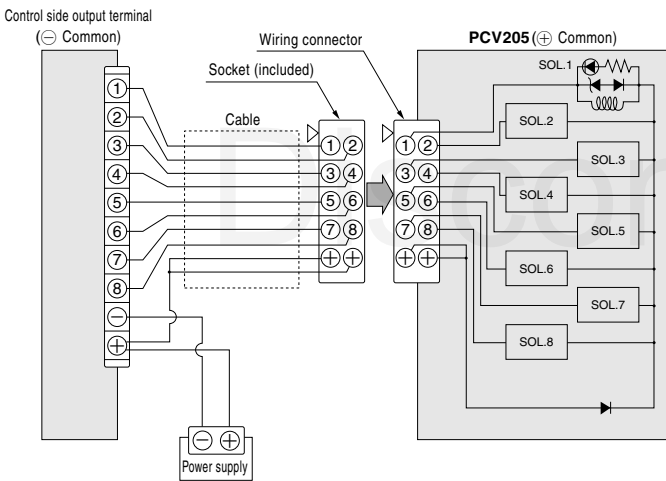
### 2. When the control-side output terminals include "COMMON."



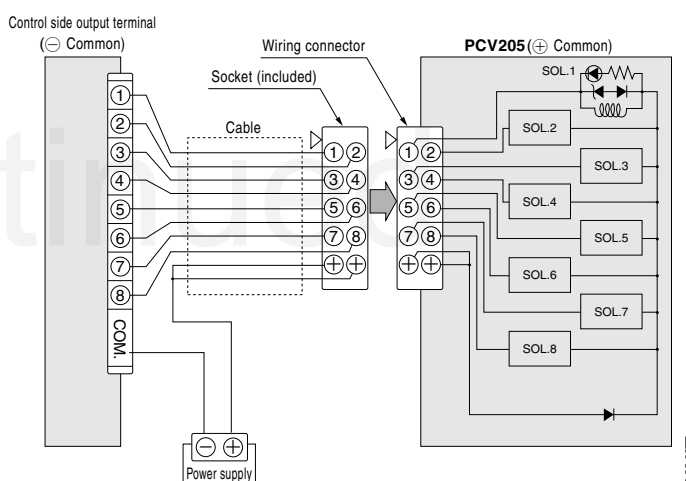
Though power is supplied from unit side, it can be supplied also from control side as shown by dashed lines.

## ●PCV205

### 1. When the control-side output terminals include power supply terminals $\oplus$ and $\ominus$ .

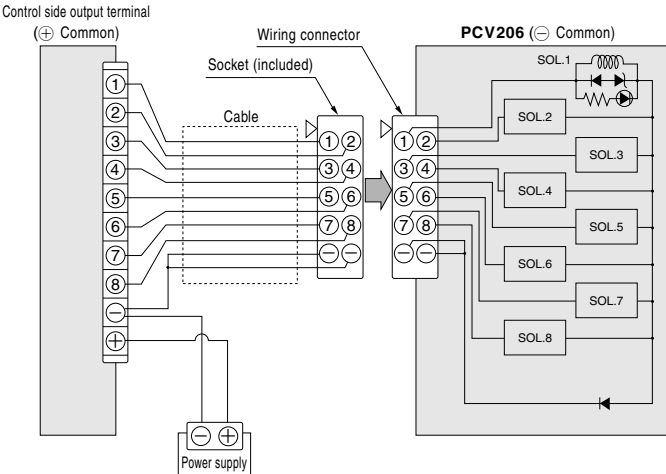


### 2. When the control-side output terminals include "COMMON."

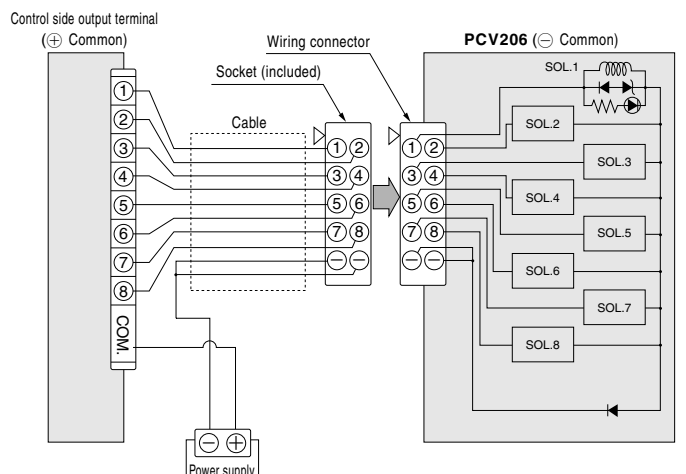


## ●PCV206

### 1. When the control-side output terminals include power supply terminals $\oplus$ and $\ominus$ .

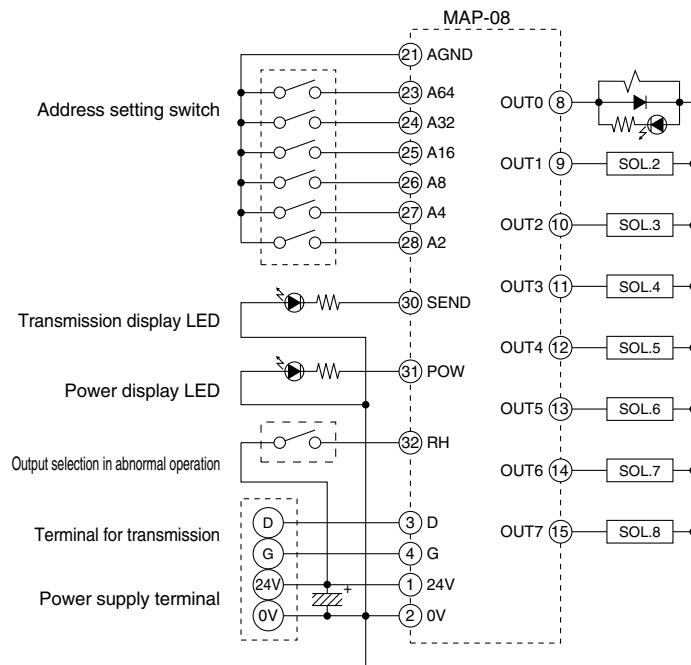


### 2. When the control-side output terminals include "COMMON."

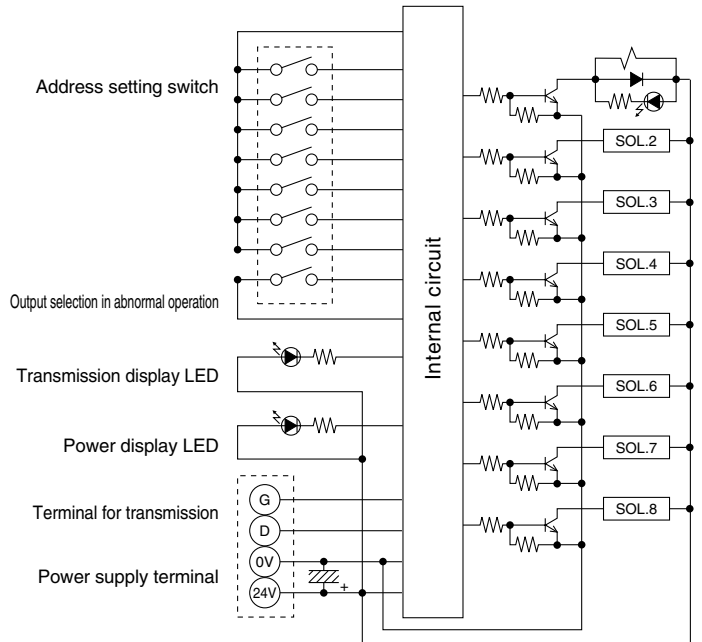


# Internal Circuit

## ●PCV211 For UNI-WIRE System

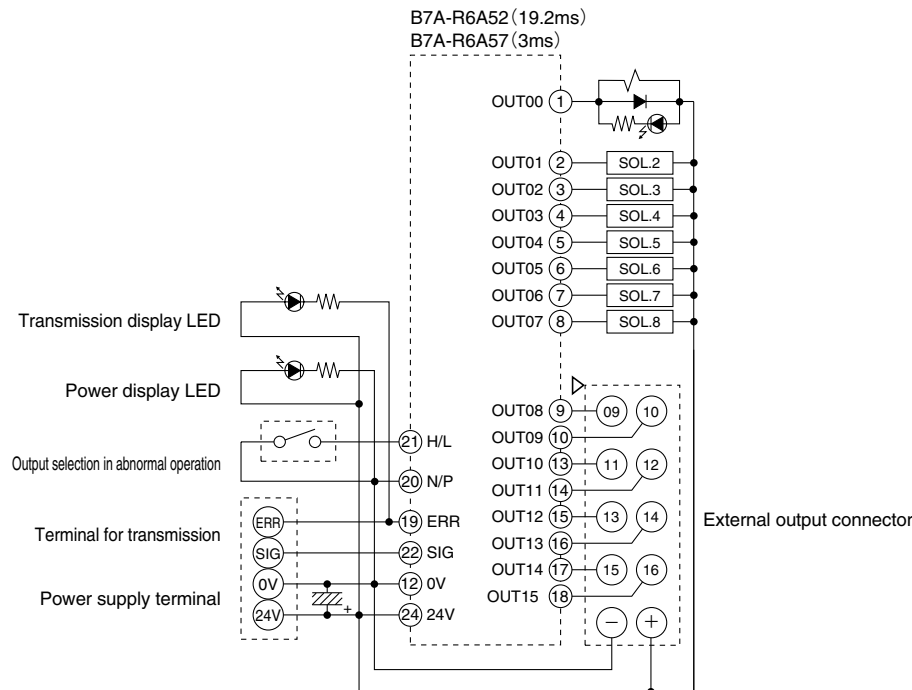


## ●PCV212 For S-LINK



## ●PCV213 For B7A Link Terminal

## ●PCV214





## General precautions

### Mounting

1. Before piping with peripheral equipment, always thoroughly flush out (blow by compressed air) the piping interior. Intrusion of metal chips or sealing tape, rust, etc., generated during plumbing could result in air leaks and other defective operations.
2. When mounting a valve unit inside the control panels or when the operation requires long energizing periods, provide heat radiation measures.
3. The valve unit cannot be used with the A and B ports open.

### Atmosphere

Avoid use in the locations and environment listed below, as it may result in failure of the valve.

If use in such conditions is unavoidable, always provide a cover or other appropriate protective measures.

- ① Location affected by strong vibration or impact.
- ② Location with temperature exceeding the specification range.
- ③ Location with large variation in temperature and dew condensation.
- ④ Location exposed to direct sunlight.
- ⑤ Location with atmosphere containing organic solvents, phosphorus acid ester type hydraulic oil, sulfurous acid gas, chlorine gas, or other acids etc.
- ⑥ Location directly exposed to water drops and oil drops.
- ⑦ Environment where valve unit is subject to dew condensation.
- ⑧ Location where valve unit is directly exposed to metal chips, dust, etc.

### Media

1. Use air as the media. When using other media, consult us.
2. Use air containing no deteriorated compressor oil, etc. Install an air filter (filtration of 40μm) close to the valve unit and remove collected liquid and dust. Periodically remove the collected liquid and clean the filter element.
3. As much as possible, use with no lubrication. When the actuator requires lubrication, use turbine oil Class 1 (ISO VG32) or equivalents. Avoid using spindle oil, or machine oil.

### Piping

When installing piping or mufflers to the R port, ensure there is minimum exhaust resistance.

Models of quick fitting

A, B port : **TSK4-M6M**

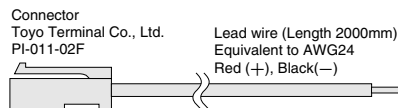
P, R port : **TSK6-M8M**

Muffler models : **KM-J6**

### Wiring

1. Confirm plus common or minus common.
2. Confirm polarity of power and pin locations, and connect correctly.

### Power cable



Included as standard on PCV201, PCV202, PCV203, and PCV204. (Model : **PCV2-DC**)

### Other application methods

#### ●When using as 3 port valve

When using with the A port plugged and the B port as output, it becomes a NO type 3 port valve.

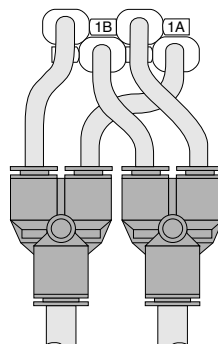
When using with the B port plugged and the A port as output, it becomes a NC type 3 port valve.

In either case, we recommend the exhaust valve built-in type (-EP), to prevent erroneous operations due to back pressure.

#### ●When more flow rate is required.

Combines the two outputs. Uses a different-diameter union Y (**UYD6-4**) to combine. One connects with the A port, and the other with the B port.

(After combining, use 6mm tube)

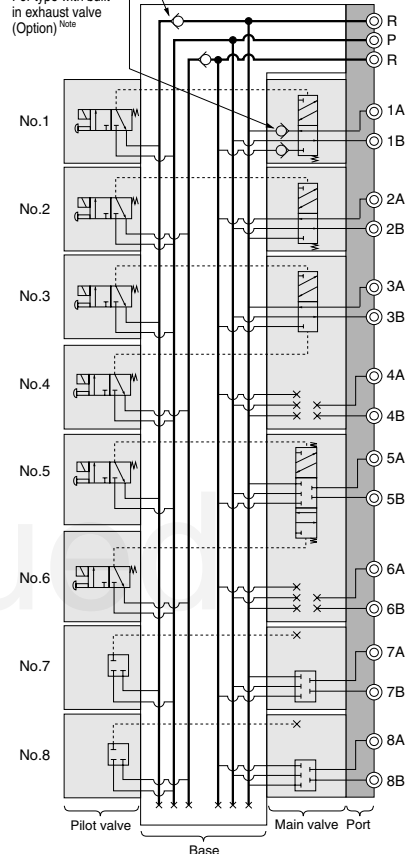


### Pneumatic circuit diagrams

#### ● Unit configuration example

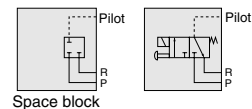
PCV2□□Z stn.1, 2 PCZ2510  
stn.3 PCZ2520  
stn.5 PCZ2530  
stn.7, 8 PCZ2500

Check valve:  
Prevents main  
exhaust from  
interfering with pilot  
valve.  
For type with built-  
in exhaust valve  
(Option) <sup>Note</sup>



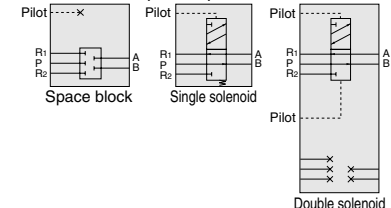
Note: This exhaust valve is not built into each main valve, but is instead built in on the unit side.  
All main exhausts, therefore, are protected against exhaust pressure.

#### ●Pilot valve

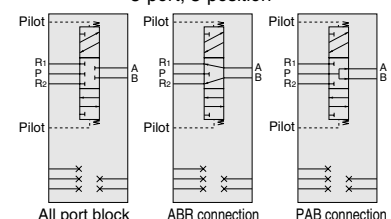


#### ●Main valve

##### 5-port, 2-position

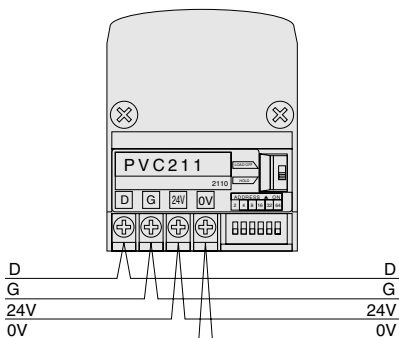


##### 5-port, 3-position

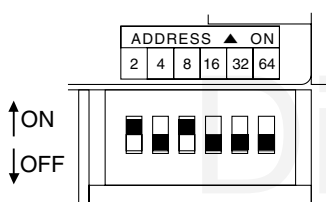


## PCV211 (For UNI-WIRE System)

### ●Wiring procedure



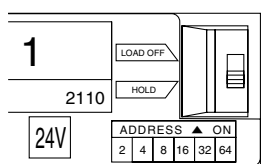
### ●Address setting



The total sum of values set on the ON side is the leading address.

Example :The leading address for the above setting is 10. (2+8=10)

### ●Output selection in abnormal operation

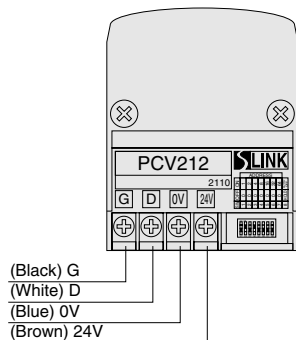


**HOLD :** When transmission is abnormal, output is held. (held in immediately previous state)

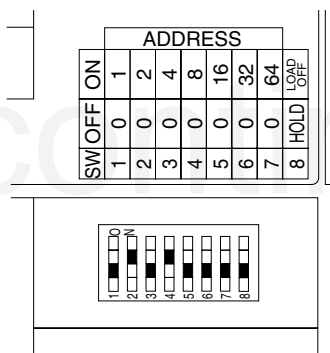
**LOAD OFF :** When transmission is abnormal, output is turned off. (All of 8 points)

## PCV212 (For S-LINK)

### ●Wiring procedure



### ●Dip switch setting



#### ※ Address setting

Set by switch numbers 1 to 7

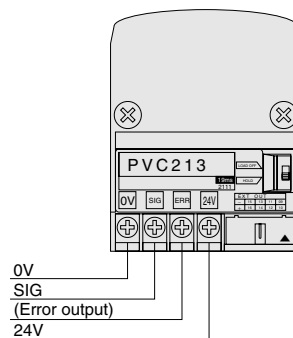
#### ※ Output selection in abnormal operation

**HOLD :** When transmission is abnormal, output is held. (held in immediately previous state)

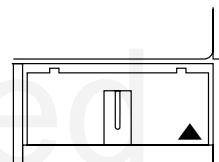
**LOAD OFF :** When transmission is abnormal, output is turned off. (All of 8 points)

## PCV213, 214 (For B7A Link Terminal)

### ●Wiring procedure

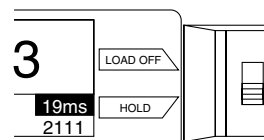


### ●External connector



|   | EXT | OUT |       |
|---|-----|-----|-------|
| - | 15  | 13  | 11 09 |
| + | 16  | 14  | 12 10 |

### ●Output selection in abnormal operation



**HOLD :** When transmission is abnormal, output is held. (held in immediately previous state)

**LOAD OFF :** When transmission is abnormal, output is turned off. (All of 8 points)



PC-VALVE UNIT Specifications Confirmation Form

No. \_\_\_\_\_  
Date: \_\_\_\_\_

| Wiring |   |
|--------|---|
| 01     | ● Flat cable connector 10-pin<br>Plus common, with power supply connector<br>     |
| 02     | ● Flat cable connector 10-pin<br>Minus common, with power supply connector<br>    |
| 03     | ● D sub connector 15-pin<br>Plus common, with power supply connector<br>          |
| 04     | ● D sub connector 15-pin<br>Minus common, with power supply connector<br>         |
| 05     | ● Flat cable connector 10-pin<br>Plus common, without power supply connector<br>  |
| 06     | ● Flat cable connector 10-pin<br>Minus common, without power supply connector<br> |
| 11     | ● For UNI-WIRE System<br>   |
| 12     | ● For S-LINK<br>  |
| 13     | ● For Omron B7A (Standard type)<br>   |
| 14     | ● For Omron B7A (High speed type)<br>   |

| stn.No.<br>Package type                | 1  | 2      | 3      | 4      | 5      | 6      | 7      | 8      |
|--|--|--------|--------|--------|--------|--------|--------|--------|
| A                                      | Single   | Single | Single | Single | Single | Single | Single | Single |
| B                                      | Double   |        | Double |        | Double |        | Double |        |
| C                                      | Single   | Single | Single | Single | Single | Single | —      | —      |
| D                                      | Single   | Single | Single | Single | —      | —      | —      | —      |
| E                                      | Double   |        | Double |        | —      | —      | —      | —      |
| F                                      | Single   | Single | Single | Single | Double |        | Double |        |
| Select the package type from the above | — : Space block<br>Single : Single solenoid<br>Double : 2-position double solenoid |        |        |        |        |        |        |        |

| stn.No.   | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Unit  |   |   |   |   |   |   |   |   |
| PCZ2500<br>Space block  |   |   |   |   |   |   |   |   |
| PCZ2510<br>2-position<br>single solenoid  |   |   |   |   |   |   |   |   |
| PCZ2520<br>2-position<br>double solenoid  |   |   |   |   |   |   |   |   |
| PCZ2530<br>3-position<br>all port block   |   |   |   |   |   |   |   |   |
| PCZ2540<br>3-position<br>ABR connection   |   |   |   |   |   |   |   |   |
| PCZ2550<br>3-position<br>PAB connection   |   |   |   |   |   |   |   |   |
| When Z is selected, it is required to specify every station from 1 to 8.<br>Select required unit and enter ○ in the column. |   |   |   |   |   |   |   |   |

Wiring  
01~06,11~14

Package type  
(A~F)

Full choice type  
(Z)

Mounting valve pattern

Basic model

PCV2

(DC24V)

Mounting base

Blank: Without mounting base  
B1 : Flange type  
B2 : Angle type  
B3 : Long angle type  
B4 : DIN rail type

Exhaust valve

Blank : Standard  
EP : Exhaust valve built-in type

|                                |     |                  |            |         |  |        |  |
|--------------------------------|-----|------------------|------------|---------|--|--------|--|
| Company name                   |     | Our entry column |            | PCV2    |  | Remark |  |
| Department                     |     |                  |            | stn.No. |  |        |  |
| Name                           |     | Checked by       | Written by | No.     |  |        |  |
|                                |     |                  |            | No.     |  |        |  |
|                                |     |                  |            | No.     |  |        |  |
| Quantity of sets to be ordered | set |                  |            | No.     |  |        |  |