

# Instruction Manual

WX1□-VL (Voltage Input·Soft Variable Type)  
 WX2□-VL (Voltage Input·Soft Fixed Type)  
 WX3□-VL (mV Input·Soft Variable Type)  
 WX4□-VL (mV input·Soft Fixed Type)  
**Velocity Limiter**

JUXTA

## 1. INSPECTION

This instrument has been thoroughly tested at the factory before shipment. When you receive it, visually inspect it for damage and check the accessories.

- 1.1 Model number and specification check  
 Check to see the model number and specifications on the nameplate attached to the front cover of the unit are as ordered.
- 1.2 Contents of the instruction manual  
 This instruction manual provides instructions on mounting, external wiring and maintenance.

## 2. GENERAL

- 2.1 Soft variable type (WX1□, WX3□)  
 This unit receives voltage or mV signal from transmitter and outputs isolated current or voltage signal after making velocity control for input ascending and descending changes through velocity limit set by Handy Terminal.
- 2.2 Soft fixed type (WX2□, WX4□)  
 This unit receives voltage or mV signal from transmitter and outputs isolated current or voltage signal after making velocity control for input ascending and descending changes through velocity limit set by Trimmer.

### Accessories:

|                            |        |
|----------------------------|--------|
| Mounting block             | 2      |
| Tag number and range label | 1 each |
| Mounting screw M4          | 4      |

## 3. MOUNTING METHOD

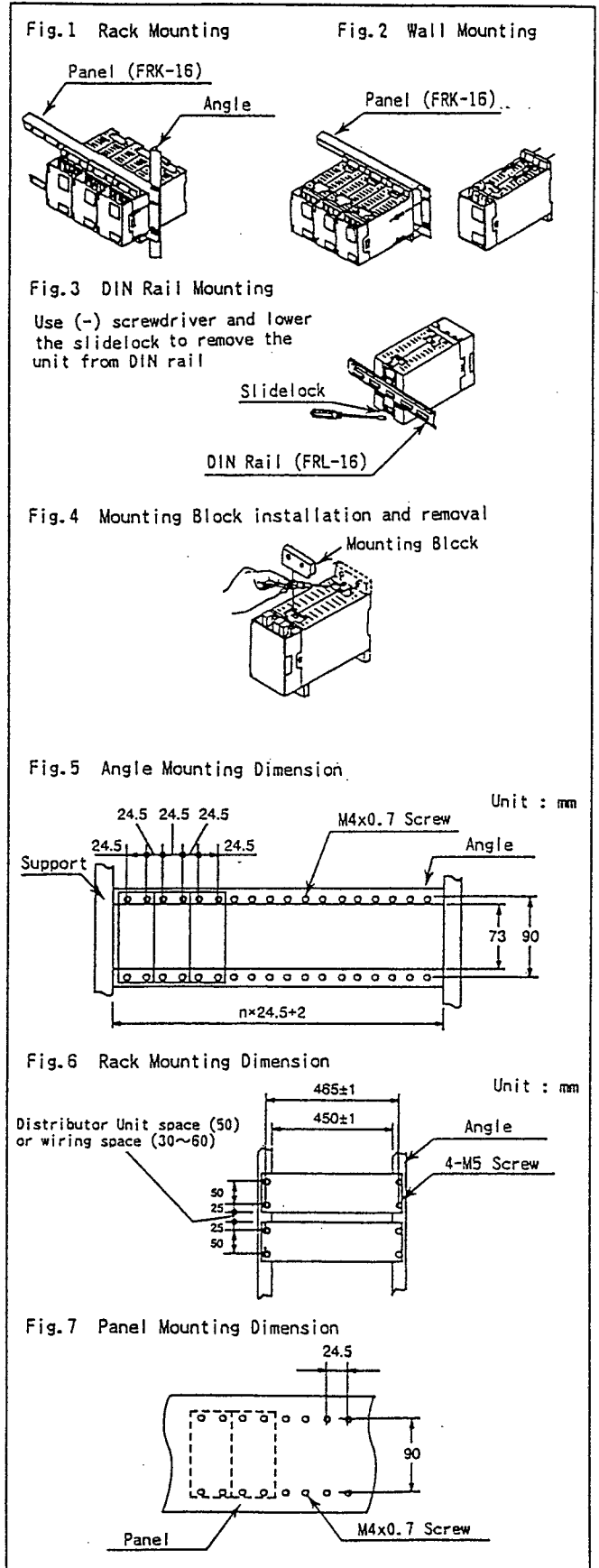
JUXTA signal conditioners can be mounted on rack, wall or DIN rail.

- 3.1 Rack mounting  
 Use panel (FRK-16) and install it on an angle as shown in Fig.1. This is a convenient method for high density mounting of the unit on 19-inch rack panel. (See Fig. 6)
- 3.2 Wall mounting  
 Use panel (FRK-16) to mount the unit as shown in Fig. 2 or directly mount it on the wall (See Figs. 6 and 7 for mounting dimensions)
- 3.3 DIN rail mounting  
 Insert DIN rail into the upper of DIN rail groove on the rear of the unit and fix the rail with the slidelock at the lower of the unit as shown in Fig. 3.
- 3.4 Angle mounting  
 In case of single unit mounting, refer to Fig. 5 for its mounting.
- 3.5 Mounting block installation and removal  
 Insert mounting block into the groove of the unit as shown in Fig. 4 and slide it until it is locked with the stopper. To remove it, lift up the mounting block stopper with screwdriver (-) and slide it along the groove.

## 4. EXTERNAL WIRING

Open the terminal cover of the unit. Wire should connect to M4 screw terminal. Flexible twisted wires and durable round crimp-on terminals (JIS C2805) are recommended to be used.

- Signal cable having more than 0.5mm<sup>2</sup> and power cable having more than 1.25mm<sup>2</sup> of nominal cross-sectional area of conductor are recommended.



#### 4.1 Wiring

- ① See Fig. 8 for terminal arrangement.
- ② Connect input voltage signal cable of the unit to its terminals 7(+) and 8(-).
- ③ Connect output signal cable of the unit to its terminals 11(+) and 12(-).
- ④ In case of use AC power, connect AC power cable to terminals 14(L), 15(N), 16(G).  
In case of use DC power, connect DC power cable to terminals 14(+), 15(-).  
(See Fig. 9)

#### 5. ITEMS TO BE CHECKED BEFORE TURNING THE POWER SWITCH ON:

- ① Make sure that 24V DC power cable of the unit is connected to the correct polarities (+), (-).
  - ② Confirm that the external wiring to the terminal board is correct.
  - ③ Check that the mounting, ambient temperature, humidity, dust and vibration are normal.
- Confirm the above items before turning the power on. The unit needs 5 minutes warmup to meet its specified accuracy level.

#### 6. OPERATION CHECK

(Caution)

Carry out the following calibration after warming up the instruments for more than 5 minutes.

##### 6.1 Calibration equipment

- Voltage/Current Generator  
(Yokogawa Model 7651 or equivalent) 1
- Voltmeter  
(Yokogawa Model 7551 or equivalent) 1

##### 6.2 Check method

- ① Connect each equipment as shown in Figs. 10 and 11.
- ② Input/output characteristic check  
Use Voltage/Current Generator and apply input signal equivalent 0, 25, 50, 75 and 100% of input span to the unit. Check that corresponding outputs are within specified accuracy rating range for the respective output reference values.
- ③ Velocity limit check  
Make rapid change of input using Voltage/Current Generator. Check to see output is controlled by velocity limit.  
As for soft fixed type, setup velocity limit through trimmer. (Monitor setup value through CHECK terminal).  
Trimmer setup=0~1.000V corresponds to velocity limit of 0~1000% /minute.  
Setup range of velocity limit is 1~600%/minute (0.001~0.600V).  
If velocity limit is set at more than 700%/minute, input is output without control.  
● If output signal is out of tolerance in case of ②, adjust it with Handy Terminal (JHT-100 or JHT200). For adjustment, refer Instruction Manuals of Handy Terminal.  
(JHT200 : IM JF81-02E, JHT-100 : IM JF81-01E)

#### 7. SET VALUE INPUT THROUGH HANDY TERMINAL

As for soft variable type, input range, velocity limit can be changed through Handy Terminal. Ascending and descending velocity limits are set by fixed constants C11 and C12. C11=C12=0~100.0% corresponds to velocity limit of 0~100.0%/minute. Setup range of velocity limit is 0.1~600.0%/minute (C11=C12=0.1~600.0%)  
Input range is set by ZERO, SPAN (B10, B11). Set voltage corresponding 0% input on B10 and span voltage on B11.

Fig.8 Terminal Arrangement

| TML | WX1, WX3 | WX2, WX4 |
|-----|----------|----------|
| 3   | N.C.     | CHECK +  |
| 4   | N.C.     | CHECK -  |
| 5   |          |          |
| 6   |          |          |
| 7   | INPUT    | +        |
| 8   | INPUT    | -        |
| 9   |          |          |
| 10  |          |          |
| 11  | OUTPUT   | +        |
| 12  | OUTPUT   | -        |
| 13  |          |          |
| 14  | SUPPLY   | L+       |
| 15  | SUPPLY   | N-       |
| 16  | GND      |          |

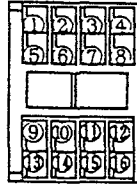


Fig.9 Wiring Diagram

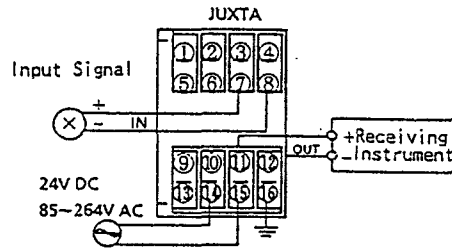


Fig.10 Wiring of Calibration Equipment (Soft Variable Type)

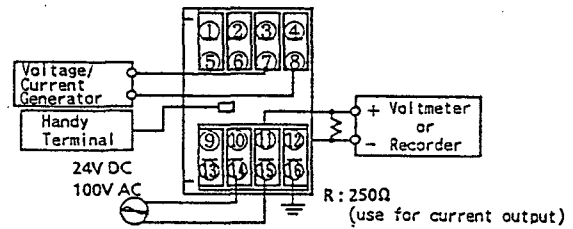


Fig.11 Wiring of Calibration Equipment (Soft Fixed Type)

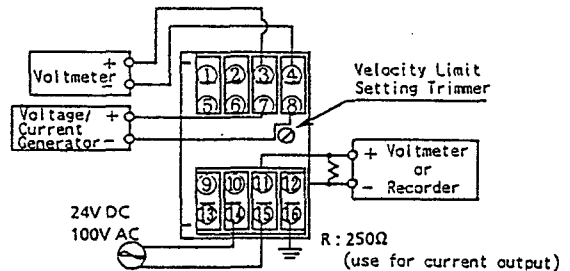
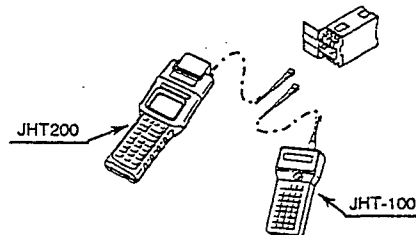


Fig.12 Connection to Handy Terminal



PARAMETER LIST

| NO. | ITEM                        | TITLE DISPLAY | DATA DISPLAY                                       |
|-----|-----------------------------|---------------|--|
| 01  | Model                       | MODEL         | □□□□*□   |
| 02  | Tag No.                     | TAG NO        | 16 Alphanumerics                                   |
| 03  | Self Check                  | SELF CHK      | Good or Error                                      |
| A00 | Display Item                | DISPLAY       |  |
| A01 | Input 1                     | INPUT 1       | □□□□.□V/mV   |
| A02 | Output                      | OUTPUT        | □□□.□%   |
| A03 | Status                      | STATUS        | FF (Hexagonal 2 digits)                            |
| A04 | Rev No.                     | REV NO        | n.nnn (n : Rev No.)                                |
| A05 | Load                        | LOAD          | □□□.□%   |
| A06 | Input 2                     | INPUT 2       | □□□□.□V/mV   |
| A07 | Buffer 1                    | BUFFER 1      | □□□.□%   |
| A08 | Buffer 2                    | BUFFER 2      | □□□.□%   |
| A09 | Buffer 3                    | BUFFER 3      | □□□.□%   |
| B00 | Set Item                    | SET           |  |
| B01 | Tag No.1                    | TAG NO.1      | 8 Alphanumerics (1st half 8 characters of Tag No.) |
| B02 | Tag No.2                    | TAG NO.2      | 8 Alphanumerics (2nd half 8 characters of Tag No.) |
| B03 | Comment 1                   | COMMENT 1     | 8 Alphanumerics                                    |
| B04 | Comment 2                   | COMMENT 2     | 8 Alphanumerics                                    |
| B07 | Input Type *1               | INP TYPE      | Select from LL/L/H/HH                              |
| B10 | Zero Point                  | ZERO          | Numeric Data                                       |
| B11 | Span                        | SPAN          | Numeric Data                                       |
| B12 | Burnout *1                  | BURN          | Select from OFF/ON                                 |
| B13 | Setup Error                 | SET ERR       | GOOD/ERROR   |
| B20 | Program *2                  | PROGRAM       | [Inter-company Setup Item]                         |
| B21 | Program *2                  | PROGRAM       | [Inter-company Setup Item]                         |
| ≡   | ≡                           | ≡             | ≡  |
| B48 | Program *2                  | PROGRAM       | [Inter-company Setup Item]                         |
| B49 | Program *2                  | PROGRAM       | [Inter-company Setup Item]                         |
| C00 | Adjust Item                 | ADJUST        |  |
| C01 | 0% Output Adjust            | OUT 0%        | Numeric Data (±10.00)                              |
| C02 | 100% Output Adjust          | OUT 100%      | Numeric Data (±10.00)                              |
| C03 | Wiring Resistance Adjust *1 | WIRING R      | RESET/EXECUTE                                      |
| C04 | 0% input Adjust *2          | IN 0%         |  |
| C05 | 100% input Adjust *2        | IN 100%       |  |
| C11 | Fixed Constant              | CONST         | Numeric Data                                       |
| C12 | Fixed Constant              | CONST         | Numeric Data                                       |
| ≡   | ≡                           | ≡             | ≡  |
| C40 | Fixed Constant              | CONST         | Numeric Data                                       |
| C41 | Fixed Constant              | CONST         | Numeric Data                                       |

\*1 Display only WX3□-VL

\*2 Display only. Don't use

(Note) C17~C19 are display only

Subject to change without notice for grade up quality and performance.

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