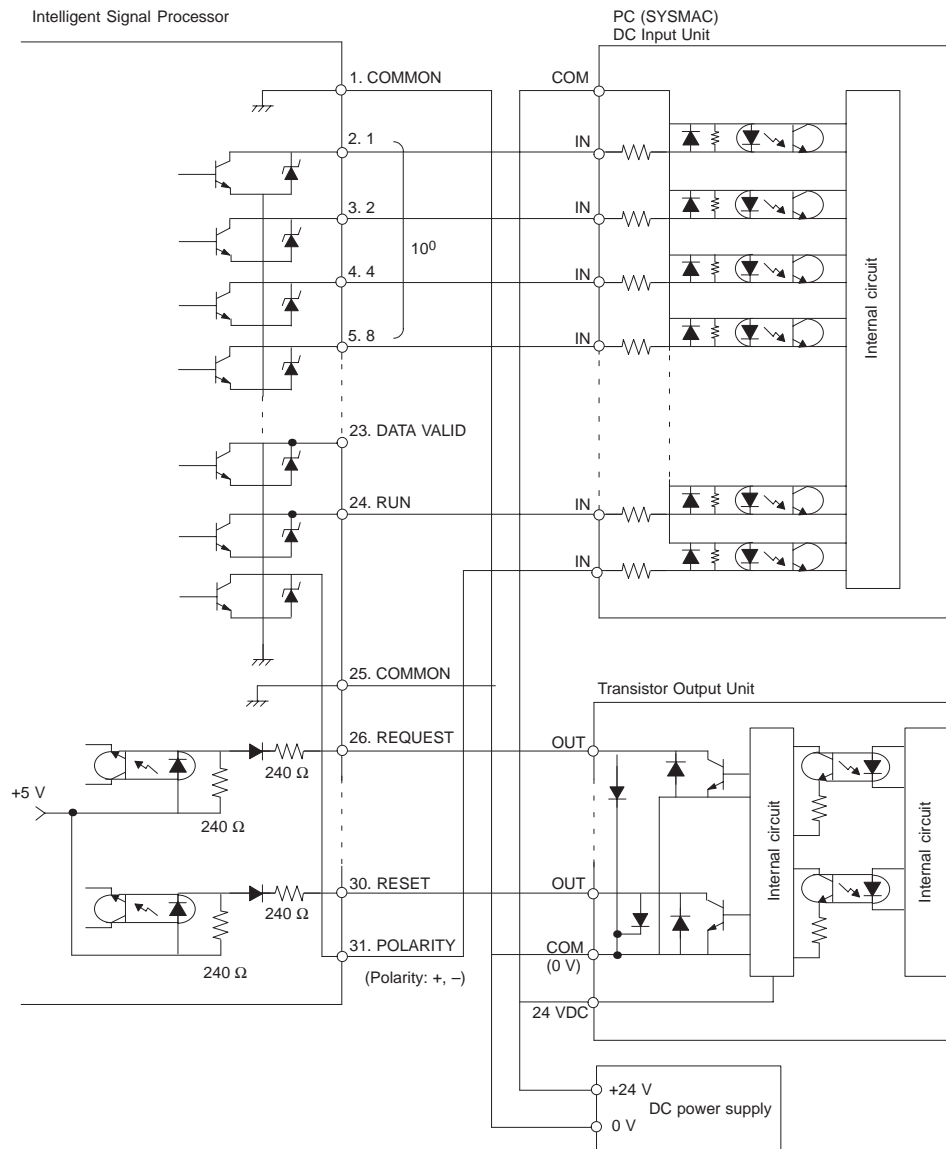


Connecting BCD Outputs

The BCD output type Processor is convenient when connecting directly with a PC or personal computer. Refer to the following connection example.



Operation

When a REQ signal is input to the Processor from a PC, the data is confirmed after an interval of approx. 30 ms, and a DATA VALID (D.V.) signal is output from the Processor. Read the data when the DATA VALID signal is ON.

Connection between PC and Processor should be performed with a rear panel transmission connector.

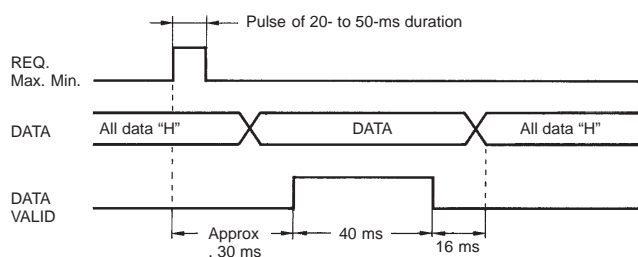
When one PC Unit is connected with several Processor Units, it is possible to achieve a wired OR connection between the DATA (including POL OVER) and DATA VALID signals.

Data cannot be written from a PC to a Processor.

Timing Charts

Sampling Data Output (at Each Sample)

Data is confirmed after approx. 30 ms from the REQ signal rising time, and DATA VALID signal is output. Read data while DATA VALID signal ON. The DATA VALID signal is turned OFF after an interval of 40 ms, then data is turned OFF after an interval of 16 ms.

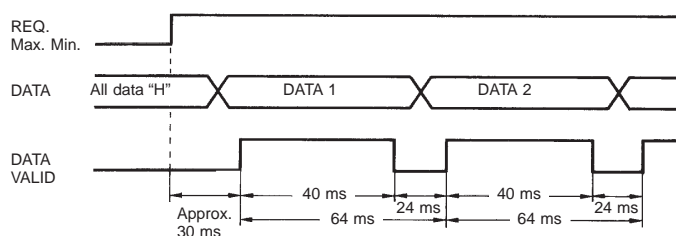


Note The above Max. and Min. are not effective in the K3NC.

Continuous Data Output

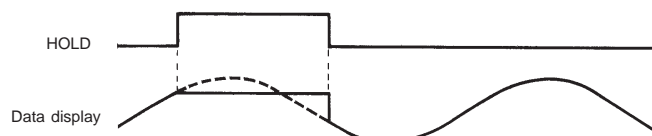
When the REQ signal remains ON, measurement data is output at intervals of 64 ms. When a hold operation or another operation is performed during the change from DATA 1 to DATA 2, the BCD data output is either DATA 1 or DATA 2 at the hold signal timing. Read maximum or minimum data when DATA VALID signal turns ON, after a 30 ms interval from maximum or minimum signal ON time to confirm measurement data.

The RUN signal is ON during RUN mode or TEST mode. (Note that the RUN signal is turned OFF when an error other than overflow or under-flow occurs.)

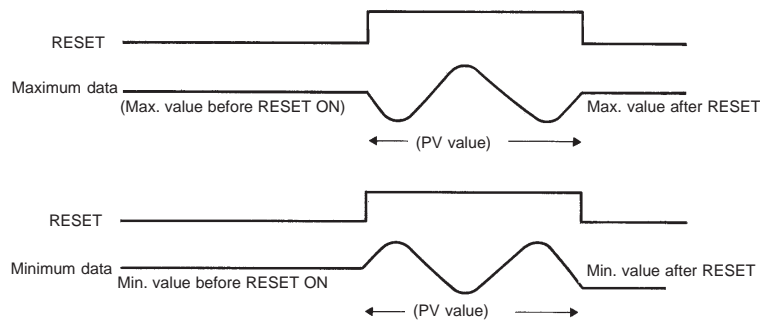


Note The above Max. and Min. are not effective in the K3NC.

When a HOLD signal is input, the Processor stops accepting input and the data received just before the HOLD signal is retained and displayed. The same function is available in (5)-(7) terminal ON.



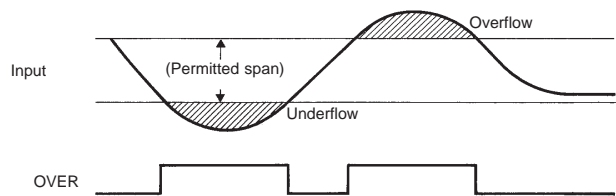
When RESET signal is input (ON), the maximum or minimum value becomes the current PV value.



POL output becomes L at positive (+) pole or H at negative (–) pole.



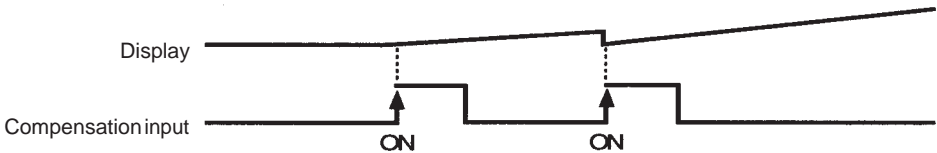
OVER output is formed when BCD output data becomes overflow or underflow data.



In set value mode or scaling mode, no BCD output is formed (all outputs become “H”). In TEST mode, the test PV value currently input is output in both REQ maximum and REQ minimum signals. When two or more input signals are input simultaneously, or when a signal is input during another input, all the output data is turned OFF. Do not turn ON two or more input signals at the same time (except for the HOLD signal).

COMPENSATION is available only in the K3NC.

The compensation input changes the display to a value (the compensation value) set in advance. The compensation input operates on the leading edge of the signal.



The display is changed to the preset value when the compensation input goes from OFF to ON.

K3NX/K3NV/K3NH/K3NR/K3NP I/O Ratings

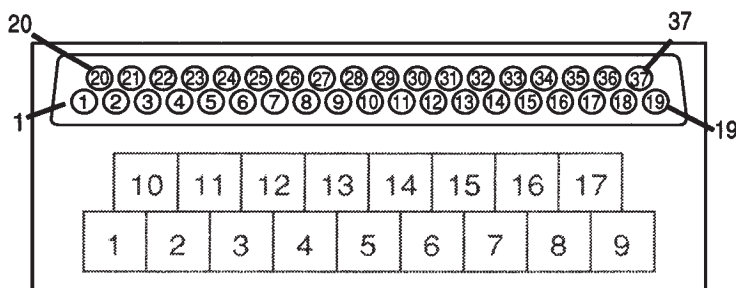
I/O signal name		Item		Rating
Input	REQ HOLD Max. Min. RESET	Input voltage		No-voltage contact input
		Input current		10 mA (max.)
		Signal level voltage	High (When OFF)	3 V min.
			Low (When ON)	1.5 V max.
Output	DATA POL OVER DATA VALID RUN	Rated load voltage		12 to 24 VDC ^{+10/-15%}
		Maximum load current		10 mA
		Leakage current		100 μA

K3NC I/O Ratings

I/O signal name		Item		Rating
Input	REQUEST COMPENSATION RESET	Input voltage		No-voltage contact input
		Input current		10 mA
		Operating voltage	OFF	3 V min.
			ON	1.5 V max.
Output	DATA POLARITY OVERFLOW DATA VALID RUN	Rated load voltage		12 to 24 VDC ^{+10/-15%}
		Maximum load current		10 mA
		Leakage current		100 μ A max.

Note Logic method: negative logic

Terminal Numbers



Terminal number	Signal name	Signal direction	Use
1	COM	---	GND: VO (See Note 1)
2	RD1-1	Output	1 Read data: 10 ⁰ digit
3	RD1-2	Output	2 Read data: 10 ⁰ digit
4	RD1-4	Output	4 Read data: 10 ⁰ digit
5	RD1-8	Output	8 Read data: 10 ⁰ digit
6	RD2-1	Output	1 Read data: 10 ¹ digit
7	RD2-2	Output	2 Read data: 10 ¹ digit
8	RD2-4	Output	4 Read data: 10 ¹ digit
9	RD2-8	Output	8 Read data: 10 ¹ digit
10	RD3-1	Output	1 Read data: 10 ² digit
11	RD3-2	Output	2 Read data: 10 ² digit
12	RD3-4	Output	4 Read data: 10 ² digit
13	RD3-8	Output	8 Read data: 10 ² digit
14	RD4-1	Output	1 Read data: 10 ³ digit
15	RD4-2	Output	2 Read data: 10 ³ digit
16	RD4-4	Output	4 Read data: 10 ³ digit
17	RD4-8	Output	8 Read data: 10 ³ digit
18	RD5-1	Output	1 Read data: 10 ⁴ digit
19	RD5-2	Output	2 Read data: 10 ⁴ digit
20	RD5-4	Output	4 Read data: 10 ⁴ digit
21	RD5-8	Output	8 Read data: 10 ⁴ digit
22	OVER	Output	Output when input value is not within the display range.
23	D - V	Output	Data confirmation signal
24	RUN	Output	Operation signal
25	COM	---	GND: VO (See Note 1)
26	REQ	Input	PV output request

Terminal number	Signal name	Signal direction	Use
27	MAX REQ	Input	Maximum value output request (See Note 2)
28	MIN REQ	Input	Minimum value output request (See Note 2)
29	HOLD	Input	Hold input (See Note 3)
30	RESET	Input	Reset input
31	POL	Output	Positive/negative polarity signal
32	HH	Output	HH output (See Note 4)
33	H	Output	H output (See Note 4)
34	PASS	Output	PASS output (See Note 4)
35	L	Output	L output (See Note 4)
36	LL	Output	LL output (See Note 4)
37	COM	Output	GND: VO (See Note 1)

- Note:**
1. Terminals No. 1, 25, and, 37 have the same COM.
 2. The above Max. and Min. are not effective in the K3NC.
 3. HOLD is effective only in the K3NH, K3NR, K3NP, and K3NX and is not effective in the K3NC. COMPENSATION is effective only in the K3NC.
 4. OUT1 to OUT5 are effective only in the K3NC.

Applicable Connectors

Plug: XM2A-3701 (OMRON) or equivalent
Hood: XM2S-3711 (OMRON) or equivalent