Pro-face
Human Machine Interface

Logic Relay
PRO-iO2

——— With Display ———

More than 20 input/output points   4 models

Model	Input			Output		
	Input points (Analog Input points)	Normal Input	Analog (Both Analog and Digital)	Output points	Output 8A	Output 5A
DR2-B201BD	12 (6)	I1~I6	IB~IG	8	Q1~Q8	—
DR3-B261BD	16 (6)	I1~IA	IB~IG	10	Q1~Q8	Q9,QA
DR2-B201FU	12	I1~IC	—	8	Q1~Q8	—
DR3-B261FU	16	I1~IG	—	10	Q1~Q8	Q9,QA

Less than 12 input/output points   4 models

Model	Input			Output		
	Input points (Analog Input points)	Normal Input	Analog (Both Analog and Digital)	Output points	Output 8A	Output 5A
DR2-B121BD	8 (4)	I1~4	IB~E	4	Q1~Q4	—
DR3-B101BD	6 (4)	I1~2	IB~E	4	Q1~Q4	—
DR2-B121FU	8	I1~8	—	4	Q1~Q4	—
DR3-B101FU	6	I1~6	—	4	Q1~Q4	—

·········· Without Display ··········

20 input/output points   2 models

Model	Input			Output		
	Input points (Analog Input points)	Normal Input	Analog (Both Analog and Digital)	Output points	Output 8A	Output 5A
DR2-D201BD	12 (2)	I1~A	IB,IC	8	Q1~Q8	—
DR2-D201FU	12	I1~IC	—	8	Q1~Q8	—

10 input/output points   2 models

Model	Input			Output		
	Input points (Analog Input points)	Normal Input	Analog (Both Analog and Digital)	Output points	Output 8A	Output 5A
DR2-D101BD	6	I1~6	—	4	Q1~Q4	—
DR2-D101FU	6	I1~6	—	4	Q1~Q4	—

——— Expansion Unit ———

Expansion Unit   4 models

Model	Input		Output		
	Input points	Normal Input	Output points	Output 8A	Output 5A
DR3-XT61BD	4	IH, J, K, L	2	QB,QC	—
DR3-XT141BD	8	H, J, K, L, N, P, Q, R	6	QB~QE	QF,QG
DR3-XT61FU	4	IH, J, K, L	2	QB,QC	—
DR3-XT141FU	8	H, J, K, L, N, P, Q, R	6	QB~QE	QF,QG

General Specifications

Electrical (Power)

■DR*-**BD (DC Power)**

Rated Voltage	24VDC
Allowable Voltage Range	19.2VDC to 30VDC
Allowable Voltage Drop	1ms or less
Power Consumption	DR2-*1*1BD 3W DR2-*201BD 6W DR3-B101BD 3W (With I/O Extension Module) 8W DR3-B261BD 6W (With I/O Extension Module) 10W
In-Rush Current	30A or less
Insulation Endurance	1500VAC 5mA for 1 minute (Between output terminals and DIN Rail)
Insulation Resistance	100MΩ or higher at 500VDC (Between output terminals and DIN Rail)

■DR*-**FU (AC Power)**

Rated Voltage	100VAC to 240VAC
Allowable Voltage Range	85VAC to 264VAC
Rated Frequency	50Hz / 60Hz
Allowable Frequency Range	47Hz to 63Hz
Allowable Voltage Drop	10ms or less
Power Consumption	DR2-*1*1FU 7VA DR2-*201FU 11VA DR3-B101FU 7VA (With I/O Extension Module) 12VA DR3-B261FU 12VA (With I/O Extension Module) 17VA
In-Rush Current	30A or less
Insulation Endurance	1500VAC 5mA for 1 minute (Between output terminals and DIN Rail)
Insulation Resistance	100MΩ or higher at 500VDC (Between output terminals and DIN Rail)

Environmental

Ambient Operating Temperature	0°C to 55°C
Storage Temperature	-25°C to +70°C
Ambient Operating Humidity	95%RH or less (No condensation) Wet bulb temperature: 39°C or less
Storage Humidity	95%RH or less (No condensation) Wet bulb temperature: 39°C or less
Pollution Level	Level 2
Atmospheric Pressure (Operating Altitude)	800hPa to 1114hPa (At 2000m or less)
Vibration Endurance	IEC60068-2-6 Compliant 10Hz to 57Hz 0.075mm 57Hz to 150Hz 9.8m/s² X, Y, Z directions 10 times each (80 minutes)
Shock Endurance	IEC60068-2-27 Compliant (147m/s², 3 times in X, Y, and Z directions)
Electrostatic Discharge Immunity	Contact discharge 6kV (IEC61000-4-2 level 3)
Electric Field Endurance	IEC61000-4-3 level 3
First Transient Endurance	IEC61000-4-4 level 3
Surge Endurance	IEC61000-4-5 level 3

Structural

Ratings	IP20
Cooling Method	Natural air circulation
Weight	DR2-B121** : 0.25kg(0.55lb) or less DR2-B201** : 0.38kg(0.836lb) or less DR2-D101** : 0.22kg(0.484lb) or less DR2-D201** : 0.35kg(0.77lb) or less DR3-B101** : 0.25kg(0.55lb) or less DR3-B261** : 0.40kg(0.88lb) or less DR3-XT61** : 0.125kg(0.275lb) or less DR3-XT141**: 0.22kg(0.484lb) or less
External Dimensions	DR*-*1*1** W71.2[2.80] × D90.0[3.54] × H57.4[2.26] mm[in.] DR*-*2*1** W124.6[4.91] × D90.0[3.54] × H57.4[2.26] mm[in.] DR3-XT61** W35.5[1.40] × D90.0[3.54] × H54.0[2.13] mm[in.] DR3-XT141** W72.0[2.83] × D90.0[3.54] × H54.0[2.13] mm[in.]

DC Input (DR*-****BD)

Model Number	I1 to IA, IH to IR		IB to IG
Input Voltage	24VDC		
Rated Current	4mA		
Input Impedance	7.4kΩ (at ON)		12kΩ (at ON)
No. of Input Points	6 Points (DR*-*101BD)		
	8 Points (DR2-B121BD)		
	12 Points (DR2-*201BD)		
	16 Points (DR3-B261BD)		
	4 Points (DR3-XT61BD)		
	8 Points (DR3-XT141BD)		
Operating Voltage	ON Voltage	15VDC or more (2.20mA or more)	15VDC or more (1.20mA or more)
	OFF Voltage	5VDC or less (0.75mA or less)	5VDC or less (0.45mA or less)
Input Delay (Letters in parentheses indicate filter setting)	OFF → ON	0.3ms (FAST) / 3ms (SLOW)*1	3ms (Fixed)
	ON → OFF	0.5ms (FAST) / 5ms (SLOW)*1	5ms (Fixed)
Maximum Frequency*2		1kHz	–
Input Signal Display		via LCD (Models DR*-B***** only)	
Insulation Method		No insulation between input points, and between input points and power supply	

*1 The delay time varies depending on the input filter setting. This setting is common for all points.
*2 The terminals used for the high-speed counter are I1 (up counter) and I2 (down counter).

AC Input (DR*-****FU)

Input Voltage	100VAC to 240VAC	
Allowable Frequency Range	47Hz to 63Hz	
Rated Current	0.6mA	
Input Impedance	350kΩ	
No. of Input Points	6 Points (DR*-*101FU)	
	8 Points (DR2-B121FU)	
	12 Points (DR2-*201FU)	
	16 Points (DR3-B261FU)	
	4 Points (DR3-XT61FU)	
	8 Points (DR3-XT141FU)	
Operating Voltage	ON Voltage	79VAC or more (0.175mA or more)
	OFF Voltage	40VAC or less (0.05mA or less)
Input Delay	OFF → ON	50ms
	ON → OFF	50ms
Input Signal Display	via LCD (Models DR*-B***** only)	
Insulation Method	No insulation between input points, and between input points and power supply	

Analog Comparator Input

No. of Input Channels	DR2-D201BD 2 (IB,IC)	
	DR*-B1*1BD 4 (IB,IC,ID,IE)	
	DR*-B2*1BD 6 (IB,IC,ID,IE,IF,IG)	
Input Voltage Range	0V to 10V	
Resolution	8 bits	
Accuracy	Full-scale value ±5% (at 25°C) Full-scale value ±6.2% (at 55°C)*1	
Absolute Max Input	30VDC (Voltage)	
Input Filter	None	
Conversion Time	Unit cycle time	
Input Impedance	12kΩ	
Insulation Method	No insulation between analog input points, and between analog input section and power supply	
Cable Length	10 m max. (Shielded cable)	

*1 This accuracy may not be possible if there is a large amount of noise.

Relay Output

Output	Q1 to Q8, QB to QE	Q9, QA, QF, QG
Rated Output Voltage	5VDC to 30VDC, 24VAC to 250VAC	
No. of Output Points	4 Points (DR*-*1*1**)	
	8 Points (DR2-*201**)	
	10 Points (DR3-B261**)	
	2 Points (DR3-XT61**)	
	6 Points (DR3-XT141**)	
Load Current	8A/1 Point	5A/1 Point
Common	Independent Common*1	
Mechanical Lifetime	10 million operations	
Electrical Lifetime	100,000 operations at contact rated load	
Min. Open/Close Load	12V, 10mA	
Built-in Fuse	None	
Voltage Endurance	4kV (IEC60947-1, IEC60664-1)	
Output Signal Display	via LCD (Models DR*-B***** only)	
Short Circuit Protection	None	
Overvoltage and Overcurrent Protection	None	
Output Delay	OFF → ON	10ms or less
	ON → OFF	5ms or less

*1 For DR3-B261**, Q8, Q9, and QA share a single common terminal.
For DR3-XT141**,QB-QC, QD-QE, and QF-QG each uses a single common terminal respectively.

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PRO-iO2

Great Features of PRO-iO2

POINT 1

Large display!
High visibility, Easy operation

Plus

Self-Editing
With the LCD model, logic programs can be created, monitored and modified even without tools.


```
I1-I2-I3-I4-I5-CC1
Z1---J I
Z2-C1-i1-------(Q1
Z3-           -RC1
```

Up to 40 points!

POINT 2

Expandable!
Increased number of I/O points allows much more freedom.

Plus

Easy DIN rail installation
One touch installation, or slide type installation with screws for easy expansion.

POINT 3

Easy to maintain
Backup time greatly expanded: From 150 hours to 10 years.

Plus

Memory Pack or PC connection
Easily copy and transfer logic programs (optional products)

Valuable Functions

Relay Sequence Function
Basic ON/OFF control of a lamp, pump, etc. After receiving an input (a contact, b contact) such as a button or switch, complex input conditions can also be made by combining AND circuits, OR circuits, etc.

Timer Function
After receiving an incoming signal, unit waits a pre-set amount of time, then sends output.
Example: A washing machine switch is pushed, washing is started, and is stopped after 40 seconds.

Counter Function
With this function an incoming signal is counted and made a pre-set value.
Example: On a product manufacturing line defective products can be detected and counted by a sensor.

Analog ※1
This function inputs the analog signals of two points, temperature, pressure, etc., and outputs a result of the comparison of the two points and a set value.
Example: If temperatures rise too high in a greenhouse, a window will be opened automatically.

Calendar function ※2
This output function allow scheduling of regular events, such as weekly or daily.
Example: Equipment can be prepared for operation, such as having pre-heating every day at 6:00am.

※1 Supported only by DC type power units,except D101BD.
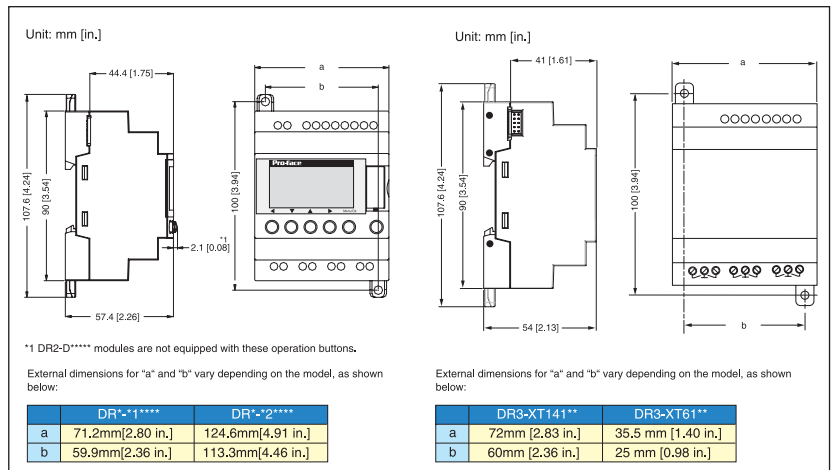※2 Supported only by units with display (B type only).

● **Editor Software**

Name	Model	Description
PRO-iO2 Editor	DR2-SFT01	Logic program development editor

● **Options**

Name	Model Number	Description
PRO-iO2 Data Transfer Cable	DR2-CBL01	Connects a PRO-iO2 module to a PC to transfer logic programs.
PRO-iO2 Memory Pack	DR2-MEM01	Used with DR*-B***** models to backup (save) logic programs. Can copy logic programs to other DR*-B*****-type PRO-iO2 modules.

External View and Dimensions

Unit: mm [in.]

*1 DR2-D***** modules are not equipped with these operation buttons.

External dimensions for "a" and "b" vary depending on the model, as shown below:

	DR*-*1****	DR*-*2****
a	71.2mm[2.80 in.]	124.6mm[4.91 in.]
b	59.9mm[2.36 in.]	113.3mm[4.46 in.]

External dimensions for "a" and "b" vary depending on the model, as shown below:

	DR3-XT141**	DR3-XT61**
a	72mm [2.83 in.]	35.5 mm [1.40 in.]
b	60mm [2.36 in.]	25 mm [0.98 in.]

PRO-iO (Previous Model) and PRO-iO2's key differences

Hardware	1. Previous transfer cable cannot be used because connector shape has changed. 2. Previous memory pack cannot be used because the connector shape is different. 3. Switch arrangement on the unit is different. 4. Terminal numbers changed because the number of analog input points for the DC type increased. 5. View mode (VISU menu) in the display setting of the unit eliminated. 6. Backup time is expanded from 150 hours to 10 years. 7. Back light is added.	**Software**	1. The number of lines for program creation increased from 80 to 120 lines. 2. The number of internal coils increased from 15 to 28. 3. Backlight Control command added. 4. High-speed counter input (Max=1kHz) added. 5. PRO-iO2 editor cannot edit and transfer a program to PRO-iO (previous model).