Autonics

DISPLAY UNIT
D5Y/D5W SERIES
M A N U A L

D5Y D5W□

Thank you very much for selecting Autonics products.
For your safety, please read the following before using.

▣ Caution for your safety

※Please keep these instructions and review them before using this unit.

※Please observe the cautions that follow;

⚠**Warning** Serious injury may result if instructions are not followed.

⚠**Caution** Product may be damaged, or injury may result if instructions are not followed.

※The following is an explanation of the symbols used in the operation manual.
⚠caution:Injury or danger may occur under special conditions.

⚠Warning

1. **In case of using this unit with machineries(Nuclear power control, medical equipment, vehicle, train, airplane, combustion apparatus, entertainment or safety device etc), it requires installing fail-safe device, or contact us for information on type required.**
   It may result in serious damage, fire or human injury.
2. **This unit must be mounted on panel.**
   It may give an electric shock.
3. **Do not connect wire and maintenance when the power on.**
   It may give an electric shock and cause a fire.
4. **When supply the power to this unit, please check the number of terminal then connect wire.**
   It may cause a fire.
5. **Do not modify this unit, if needs, please contact us.**
   It may give an electric shock and cause a fire.

⚠Caution

1. **This unit shall not be used outdoors.**
   It might shorten the life cycle of the product or give an electric shock.
2. **When wire connection, please screw the bolt on terminal block with 0.74 to 0.90 N・m strength.**
   It may cause a fire by wrong connection.
3. **Please observe specification rating.**
   It may shorten the life cycle of the product or give an electric shock.
4. **In cleaning the unit, do not use water or an oil-based detergent.**
   It may cause a fire or give an electric shock.
5. **Please be sure to avoid using this unit where there are flammable gas, explosive gas, humidity, direct ray of the sun, vibration, radiant heat, impact.**
   It may cause a fire.
6. **Do not inflow dust or wire dregs into inside of this unit.**
   It may cause a fire or malfunction.
7. **Please connect wire properly after checking the polarity of power.**
   It may cause a fire or explosion.

▣ Ordering information

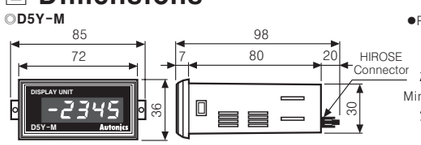
D 5 W — M X

※1		12-24VDC
※2	X	110/220VAC 50/60Hz
	M	Multi-input mode
	Y	DIN size W72×H36mm
	W	DIN size W96×H48mm
	5	5Digit
	D	Display Unit

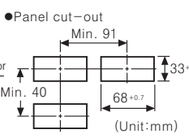
(※1)D5Y model is for DC power only.
(※2)AC power of D5W model is optional.

▣ Dimensions

◎D5Y-M

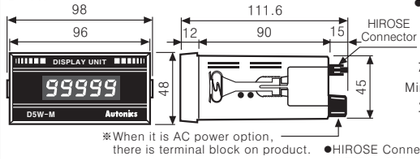


●Panel cut-out



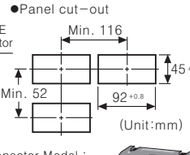
(Unit:mm)

◎D5W-M



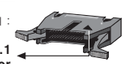
※When it is AC power option, there is terminal block on product.

●Panel cut-out



(Unit:mm)

●HIROSE Connector Model : HIF3BA-26PA-2.54DS
●"▲" mark indicates No.1 pin of HIROSE connector.

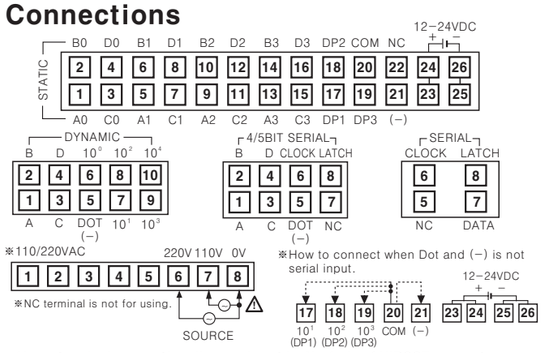


※**The above specification are changeable without notice anytime.**

▣ Specifications

Model		D5Y-M	D5W-M	D5W-MX(Option)
Power supply		12-24VDC	12-24VDC	110/220VAC 50/60Hz
Allowable operation voltage		90 to 110% of rating voltage		
Power consumption		1.1W		2VA
Display method		7Segment LED Display		
Display digit		4digit(or 4½ digit include symbol bit), 5digit		
Input level		HI : 5V-24V, LOW : 0-1.2V		
Input logic		Positive logic(PNP), Negative logic(NPN)		
Input mode		Static, Dynamic, 4/5Bit Serial, Serial(16/20/25Bit)		
Zero blanking function		ON('0' No display), OFF('0' Display)		
Insulation resistance		Min. 100MΩ(at 500VDC)		
Dielectric strength		2000VAC 50/60Hz for 1 minute		
Noise strength		The square wave noise(pulse width:1㎲) by the noise simulator		
		±300V		±2kV
Vibration	Mechanical	0.75mm amplitude at frequency of 10 to 55Hz in each of X, Y, Z directions for 1 hour		
	Malfunction	0.5mm amplitude at frequency of 10 to 55Hz in each of X, Y, Z directions for 10 minutes		
Shock	Mechanical	300m/s² (Approx. 30G) in X, Y, Z directions for 3 times		
	Malfunction	100m/s² (Approx. 10G) in X, Y, Z directions for 3 times		
Ambient temperature		-10 to 50℃(at non-freezing status)		
Storage temperature		-25 to 65℃(at non-freezing status)		
Ambient humidity		35 to 85%RH		
Weight		Approx. 75g	Approx. 165g	Approx. 267g

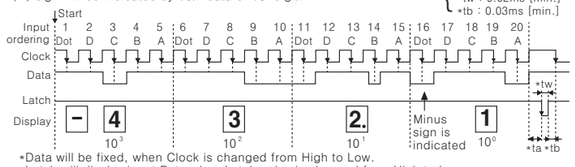
▣ Connections



※**Above terminal connection diagram is set by No.1 pin of HIROSE connector. Please note that "▲" mark indicates No.1 pin of HIROSE connector.**

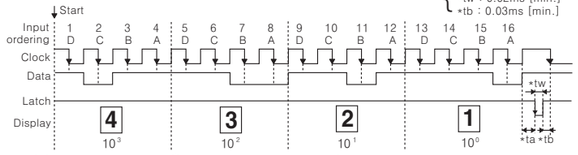
▣ Time chart(4Digit)

◎**20Bit data of serial connection**
• Input mode : Negative logic
• (-) sign will be indicated by 16th data of 10^5 digit.



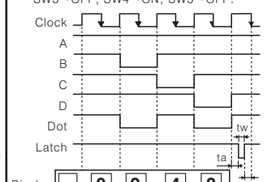
*Data will be fixed, when Clock is changed from High to Low.
*Latch will display input Data when Latch pulse is changed from High to Low.
*Hold time is before the next Latch pulse is changed from High to Low.

◎**16Bit data of serial connection**
• Input mode : Negative logic



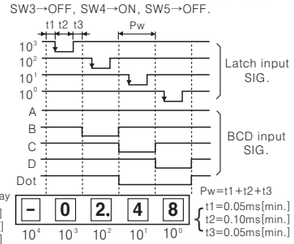
*Data will be fixed, when Clock is changed from High to Low.
*Latch will display input Data when Latch pulse is changed from High to Low.
*Hold time is before the next Latch pulse is changed from High to Low.

◎**4/5 Bit Serial(Series connection)**
:Inner selection switch SW1→ON, SW2→ON, SW3→OFF, SW4→ON, SW5→OFF.



※Above waveform is for active low and it is reversed for active high.
※In case of 5bit serial, "-" will be displayed on the 10^4 line when a Data is inputted at 10^0 with the external Dot terminal.
※Above example is for not using Zero blank function and when it is used, "0" at 10^3 is not displayed.

◎**Dynamic input(Parallel connection)**
:Inner selection switch SW1→ON, SW2→OFF, SW3→OFF, SW4→ON, SW5→OFF.

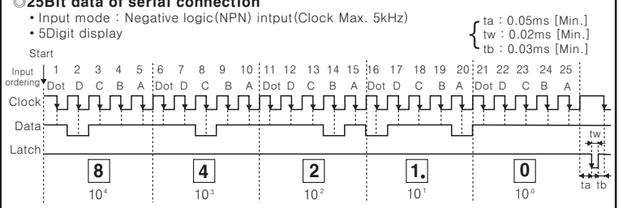


※Above waveform is for active low and it is reversed for active high.
※With the external Dot terminal, when a Dot Data is inputted on the 10^4 line at 10^0, "-" will be displayed.
※BCD input should be faster than Latch input. If it is not, a former Data is displayed.

▣ Time chart(5Digit)

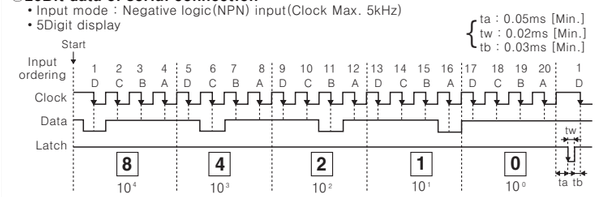
※**When use 5Digit, it cannot use (-) sign.**

◎**25Bit data of serial connection**
• Input mode : Negative logic(NPN) intput(Clock Max. 5kHz)
• 5Digit display



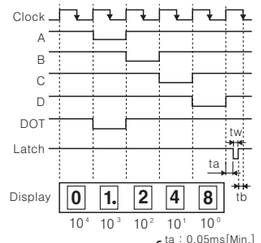
*Data will be fixed, when Clock is changed from High to Low.
*Latch will display input Data when Latch pulse is changed from High to Low.
*Hold time is before the next Latch pulse is changed from High to Low.

◎**20Bit data of serial connection**
• Input mode : Negative logic(NPN) input(Clock Max. 5kHz)
• 5Digit display



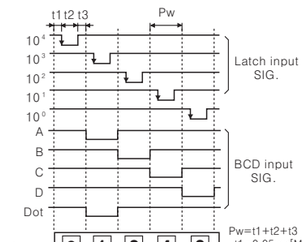
*Data will be fixed, when Clock is changed from High to Low.
*Latch will display input Data when Latch pulse is changed from High to Low.
*Hold time is before the next Latch pulse is changed from High to Low.

◎**4/5 Bit Serial input(Series connection)**
: Inner selection switch SW1→ON, SW2→ON, SW3→OFF, SW4→ON, SW5→ON.



※Above waveform is for active low and it is reversed for active high.
※It is impossible to display the "-" at 5Digit line.
※Above example is for not using Zero blank function and when it is used, "0" at 10^4 is not displayed.

◎**Dynamic input(Parallel connection)**
: Inner selection switch SW1→ON, SW2→OFF, SW3→OFF, SW4→ON, SW5→ON.

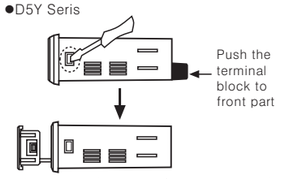


※Above waveform is for active low and it is reversed for active high.
※BCD input should be faster than Latch input. If it is not, a former Data is displayed.

▣ Case detachment

Please turn off the power before detaching the case.

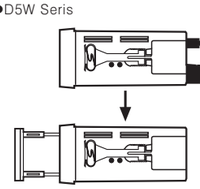
●D5Y Seris



Push the terminal block to front part

Widen the both inside of lock devices with a driver, and push the terminal block to the direction of front part.
※Be careful in order not to be wounded.

●D5W Seris

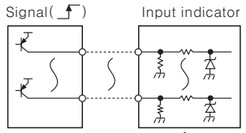


Push the lock part on the side to the direction ①, and then push the terminal block to the direction ②.

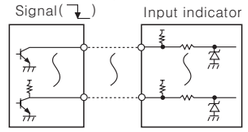
▣ Input mode and function

1. Input signal

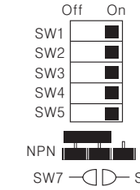
●Positive logic(PNP) input



●Negative logic(NPN) input



2. Input mode selection S/W



SW1	Select input mode
SW2	Select input mode
SW3	Select zero blanking
SW4	Select Dot serial
SW5	Selectable 4Digit or 5Digit

SW6	Selectable PNP/NPN
SW7	Selectable latch input(PNP/NPN)

3. Classification of input mode

	Static	Dynamic	4/5 Bit Serial	Serial
SW1	Off	On	On	Off
SW2	Off	Off	On	On
SW3	When it is ON, Zero blanking			
SW4(-/DP)	No function	ON/OFF	ON/OFF	ON/OFF
SW5(Digit)	4Digit disable	ON(5Digit) /OFF(4Digit)	ON(5Digit) /OFF(4Digit)	ON(5Digit) /OFF(4Digit)
SW6(Positive/Negative)	Selectable Positive logic(PNP)/Negative logic(NPN)			
SW7	Selectable for converting latch input signal (Conversion when SW7 is soldered)			
Clock frequency	———	Range of clock input frequency=100Hz to 5kHz		

4. Factory default

	SW1	SW2	SW3	SW4	SW5	SW6	SW7
Negative logic, Static input	Off	Off	On	Off	Off	NPN	Off

5. Input mode

1)SW1, SW2 are for selecting input mode.
2)SW3 is for Zero Blanking function. '0' of high digit is not indicated when SW3 is ON.
3)SW4 is for Dot and (-)sign inputs. They are input by No.5 pin of HIROSE connector in Dynamic mode or 4/5Bit serial mode when SW4 is ON and they are input by No.7 pin of HIROSE connector in Serial mode.
※(Note)When SW4 is ON pin No.17, 18, 19, 20, 21 of HIROSE connector don't work.
4)SW5 is for display digit. 5digit display is selected when it is ON, 4digit display is selected when it is OFF. SW5 is ON : 5Digit, SW5 is OFF: 4Digit
※(Note)When (-) sign is input after selecting 5digit display (-)sign input is not indicated and 5digit Data is indicated.
5)SW6 is for PNP(Positive logic), NPN(Negative logic).
6)Latch input will be converted against input logic of SW6 when SW7 is soldered. Please, use it by SW7 soldered in case of connecting it to BCD or Serial option of our MT4W/MP5W series.
7)The other specification
①Latch input
• PNP(Positive logic) : It will latch the data when it is UP-Edge
• NPN(Negative logic) : It will latch the data when it is Down-Edge
※(Note)Latch input will be converted against input logic of SW6 when SW7 is soldered.
②When changing the setting of SW1 to SW7 the setting will be changed completely with turning power OFF and ON after setting the switches.

▣ Indication number per input

●Negative logic(NPN) input

Display	A	B	C	D	Latch
0	H	H	H	H	L
1	L	H	H	H	L
2	H	L	H	H	L
3	L	L	H	H	L
4	H	H	L	H	L
5	L	H	L	H	L
6	H	L	L	H	L
7	L	L	L	H	L
8	H	H	H	L	L
9	L	H	H	L	L
Hold	X	X	X	X	H

▣ How to select decimal point

1. Dot and symbol(-) input is not serial input[SW5=OFF]

Terminal 17 ~ 20 : 8888.8
18 ~ 20 : 888.88
19 ~ 20 : 88.888
21-20 : - 8888
OPEN : 88888

※Dot of 10^4 cannot be used by hardware structure.

2. Dot and symbol(-) input is serial input[SW4=ON]

①When it is Dynamic mode or 4/5Bit serial mode they are input by No.5 pin of HIROSE connector.
②When it is serial input mode, 1 bit of serial data is used for Dot and symbol. (See Time chart)

▣ Caution for using

1. The model is designed to use under the following environment conditions;
   ①It shall be used indoor. ②Altitude Max. 2000m.
   ③Pollution Degree 2. ④Installation Category Ⅱ.
2. The connection wire of this unit should be separated from the power line and high voltage line in order to prevent from inductive noise.
3. Power switch or circuit breaker should be installed in order to cut off the power supply.
4. Please install the switch or circuit breaker near by operator in order to use it easily.
5. In case of making power line and input signal line close, please install Line filter at AC power line.
6. Please avoid using this unit in place where machineries with strong high frequency noise occurred. (Welding machine, big capacity SCR controller etc.)
7. It is difficult to install the noise protection device in this small unit, therefore please install the filter, varistor or noise absorber at external line when the equipment has high frequency such as power relay or magnet SW is operating or it is effected by spark with high voltage and lightning stroke.
8. Please use a isolation transformer for the DC power supply.

※**It may cause malfunction if above instructions are not followed.**

▣ Main products

■ COUNTER
■ TIMER
■ TEMPERATURE CONTROLLER
■ PANEL METER
■ TACHO/LINE SPEED/PULSE METER
■ DISPLAY UNIT
■ PROXIMITY SENSOR
■ PHOTOELECTRIC SENSOR
■ FIBER OPTIC SENSOR
■ PRESSURE SENSOR
■ ROTARY ENCODER
■ SENSOR CONTROLLER
■ POWER CONTROLLER
■ STEPPING MOTOR & DRIVER & CONTROLLER
■ LASER MARKING SYSTEM(CO_2, Nd:YAG)

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