

6.3. Digital Modules

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• Selection Guide

Industrial I/O Modules

Digital Input Modules (Parallel Bus)										Table 6-3-1
Models	I-8040W	I-8040PW	I-8046W	I-8048W	I-8051W	I-8052W	I-8053W	I-8053PW	I-8058W	
Pictures										
Channel	32		16	8	16	8	16		8	
Contact	Wet		Dry	Dry + Wet	Dry	Wet	Wet		Wet	
Sink /Source (NPN /PNP)	Sink, Source		Source	Sink, Source	Source	Sink, Source	Sink, Source		Sink, Source	
on	Voltage Level	10 ~ 30 V _{DC}	19 ~ 30 V _{DC}	Close to GND.	Close to GND.	10 ~ 30 V _{DC}	10 ~ 30 V _{DC}	19 ~ 30 V _{DC}	80 ~ 250 V _{AC}	
				Isolated: 4 ~ 30 V Non-Isolated TTL: 0.8 V max.						
off	Voltage Level	4 V _{DC} max.	11 V _{DC} max.	Open	Open	4 V _{DC} max.	4 V _{DC} max.	11 V _{DC} max.	30 V _{AC} max.	
				Isolated: 1 V _{DC} max. Non-Isolated TTL: 2 ~ 5 V _{DC}						
Low Pass Filter	-	Yes	-	-	-	-	-	Yes	-	
Effective Distance for Dry Contact	-	-	500 m	100 m	100 m	-	-	-	-	
System										
Watchdog	-		-	-	-	-	-		-	
Isolation	3750 V _{rms}		3750 V _{rms}	1500 V _{rms}	-	5000 V _{rms}	3750 V _{rms}		5000 V _{rms}	
Power Consumption	0.65 W	1 W	1.3 W	1.75 W	1.1 W	0.3 W	0.4 W	0.45 W	0.6 W	
Connector	D-Sub 37		Terminal Block	Terminal Block	Terminal Block	Terminal Block	Terminal Block		Terminal Block	
Optional Accessories	DN-37-381-A		-	-	-	-	-	-	-	

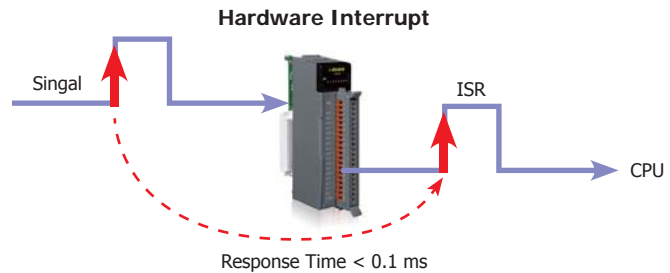
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Digital Modules



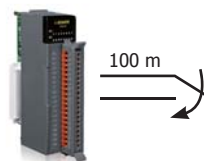
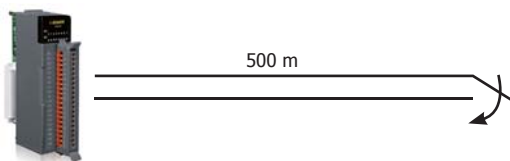
I/O module with DN-37-381-A

Note1. I-8048W supports hardware interrupt capturing. Each channel can be configured to capture either of rising edge or falling edge signal.



■ Effective distance for dry contact of DI/DIO module

In general, the effective distance for dry contact of DI module is 100m. With the enhanced circuit design, the distance can be extended up to 500m.



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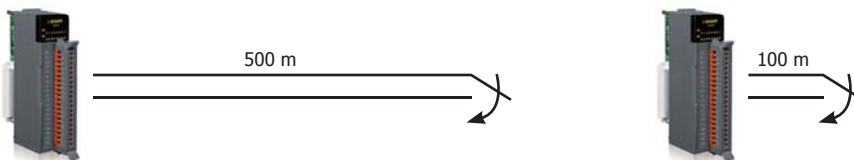
Digital Input Modules (Serial Bus) Table 6-3-2												
Models		I-87040W	I-87040PW	I-87040DW-A5	I-87046W	I-87051W	I-87052W	I-87053W	I-87053PW	I-87053W-A5	I-87058W	I-87059W
Pictures			NEW 						NEW 			
Channel		32			16	16	8	16			8	8
Type		Wet			Dry+Wet	Dry+Wet	Wet	Dry+Wet			Differential	Differential
Sink /Source (NPN /PNP)		Sink, Source			Source	Source	Sink, Source	Sink, Source			-	-
on	Voltage Level	3.5 ~ 30 V _{DC}	19 ~ 30 V _{DC}	3.5 ~ 30 V _{DC}	Dry Contact: Close to GND.	Dry Contact: Close to GND.	3.5 ~ 30 V _{DC}	Dry Contact: Close to GND.	Dry Contact: Close to GND.	Dry Contact: Close to GND.	80 ~ 250 V _{AC}	10 ~ 80 V _{AC}
					Wet contact: 1 V _{DC} max.	Wet contact: 1 V _{DC} max.		Wet contact: 3.5 ~ 30 V _{DC}	Wet contact: 19 ~ 30 V _{DC}	Wet contact: 68 ~ 150 V _{DC}		
off	Voltage Level	1 V _{DC} max.	11 V _{DC} max.	1 V _{DC} max.	Dry Contact: Open	Dry Contact: Open	1 V _{DC} max.	Dry Contact: Open	Dry Contact: Open	Dry Contact: Open	30 V _{AC} max.	3 V _{AC} max.
					Wet contact: 3.5 ~ 30 V _{DC}	Wet contact: 3.5 ~ 30 V _{DC}		Wet contact: 1 V _{DC} max.	Wet contact: 11 V _{DC} max.	Wet contact: 48 V _{DC} max.		
Counter (100 Hz, 16-bit)		Yes			Yes	Yes	Yes	Yes			Yes	Yes
Effective Distance for Dry Contact		-			500 m	100 m	-	500 m			-	-
4KV ESD Protection		Yes			Yes	Yes	Yes	Yes			Yes	Yes
Low Pass Filter		Yes			Yes	Yes	Yes	Yes			Yes	Yes
System												
Dual Watchdog		Yes			Yes	Yes	Yes	Yes			Yes	Yes
Isolation		3750 V _{rms}			-	-	5000 V _{rms}	3750 V _{rms}			5000 V _{rms}	3750 V _{rms}
Power Consumption		1.6 W			1 W	0.5 W	0.3 W	0.8 W	0.8 W	0.9 W	0.3 W	0.3 W
Connector		D-Sub 37			Terminal Block	Terminal Block	Terminal Block	Terminal Block			Terminal Block	Terminal Block
Optional Accessories		DN-37-381-A			-	-	-	-	-	-	-	-



I/O module with DN-37-381-A

■ Effective distance for dry contact of DI/DIO module












In general, the effective distance for dry contact of DI module is 100m. With the enhanced circuit design, the distance can be extended up to 500m.



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Digital Output Modules (Parallel Bus)													Table 6-3-3	
Models	I-8037W	I-8041W	I-8041RW	I-8041AW	I-8056W	I-8057W	I-8057RW	I-8057PW	I-8060W	I-8064W	I-8068W	I-8069W	I-8069RW	
Pictures			NEW 				Available soon 	NEW 					Available soon 	
Channel	16	32			16				6	8	8	8		
Type	Open Collector	Open Collector			Open Collector				Power Relay			PhotoMOS Relay		
Sink /Source (NPN /PNP)	Source	Sink	Sink	Source	Sink				Form C	Form A	Form A x 4 Form C x 4	Form A		
Load Voltage	5~30 V _{DC}	5~30 V _{DC}			5~30 V _{DC}		5~50 V _{DC}							
Max. Load Current	100 mA/channel	100 mA/channel			100 mA/channel		700 mA/channel		0.5 A @125 V _{AC} 0.25 A @250 V _{AC} 2A @30 V _{DC}	5 A @250 V _{AC} 5 A @30 V _{DC}	Form A : 5 A @250 V _{AC} 5 A @28 V _{DC} Form C : 5 A (NO) /3A (NC) @30 V _{DC} 5 A (NO) /3A (NC) @ 277 V _{AC}	60 V _{DC} /1.0 A		
Power on Value	-	-	Yes	-	-	-	Yes	-	-	-	-	-	Yes	
Safe Value	-	-	Yes	-	-	-	Yes	-	-	-	-	-	Yes	
System														
Watchdog	-	-	Yes	-	-									
Isolation	3750 V _{rms}	3750 V _{rms}			-	3750 V _{rms}	3750 V _{rms}	1500 V _{rms}	2000 V _{rms}	1500 V _{rms}	1500 V _{rms}	1500 V _{rms}		
Power Consumption	0.9 W	1.5 W			0.9 W	0.9 W	1.5 W	1 W	1.1 W	2.5 W	0.6 W			
Connector	Terminal Block	D-Sub 37			Terminal Block									
Optional Accessories	-	DN-8K32R, DN-37-381-A		DN-37-381-A	-	-	-	-	-	-	-	-	-	
<div style="display: flex; justify-content: space-around;"> I/O module with DN-8K32R I/O module with DN-37-381-A </div>														

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Digital Output Modules (Serial Bus) Table 6-3-4									
Models	I-87041W	I-87057W	I-87057PW	I-87061W	I-87064W	I-87065W	I-87066W	I-87068W	I-87069W
Pictures									
Channel	32	16		16	8	8	8	8	8
Type	Open Collector	Open Collector		Power Relay		AC SSR	DC SSR	Power Relays	PhotoMOS Relay
Sink /Source (NPN /PNP)	Sink	Sink		Form A		Form A	Form A	Form A × 4 Form C × 4	Form A
Load Voltage	5 ~ 30 Vdc	5 ~ 30 Vdc	5 ~ 50 Vdc	Relay Contact: 0 ~ 250 V _{AC} 0 ~ 30 Vdc		24 ~ 265 Vrms	3 ~ 30 Vdc	Form A: 0 ~ 250 V _{AC} 0 ~ 28 Vdc Form C: 0 ~ 277 V _{AC} 0 ~ 30 Vdc	350 V max. at DC/AC
Max. Load Current	100 mA/ channel	100 mA/ channel	700 mA/ channel	5.0 Arms		1.0 Arms	1.0 Arms	Form A: 8 A Form C: 3 A (NC) 5 A (NO)	0.13 A
Short Circuit Protection	-	-	Yes	-		-	-	-	-
4KV ESD Protection	Yes	Yes		Yes		Yes	Yes	Yes	Yes
Power on Value	Yes	Yes		Yes		Yes	Yes	Yes	Yes
Safe Value	Yes	Yes		Yes		Yes	Yes	Yes	Yes
System									
Dual Watchdog	Yes	Yes		Yes		Yes	Yes	Yes	Yes
Isolation	3750 Vrms	3750 Vrms		3000 Vrms	2000 Vrms	2500 Vrms	2500 Vrms	4000 Vrms	5000 Vrms
Power Consumption	0.7 W	1 W		1.7 W	1.5 W	0.6 W	0.6 W	2.5 W	0.5 W
Connector	D-Sub 37	Terminal Block		Terminal Block		Terminal Block	Terminal Block	Terminal Block	Terminal Block
Optional Accessories	DN-8K32R, DN-37-381-A	-		-	-	-	-	-	-
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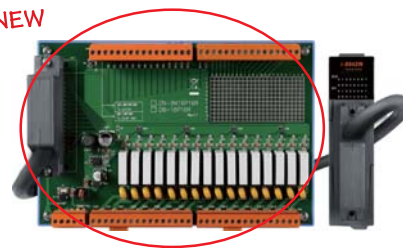
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Digital Input & Output Modules (Parallel Bus)							Table 6-3-5
Models	I-8042W	I-8050W	I-8054W	I-8054RW	I-8055W	I-8063W	
Pictures		Note1 		Available soon 			
Digital Input							
Channel	16	16	8		8	4	
Type	Wet	Wet	Wet		Dry	Wet	
Sink /Source (NPN /PNP)	Sink, Source	Sink	Sink, Source		Source	Sink, Source	
on Voltage Level	10 ~ 30 V _{dc}	10 ~ 30 V _{dc}	10 ~ 50 V _{dc}		Close to GND.	10 ~ 30 V _{dc}	
off Voltage Level	4 V _{dc} max.	4 V _{dc} max.	4 V _{dc} max.		Open	4 V _{dc} max.	
Low Pass Filter	-	-	-	Yes	-	-	
Effective Distance for Dry Contact	-	-	-	-	100 m	-	
Digital Output							
Channel	16	16	8		8	4	
Type	Open Collector	Open Collector	Open Collector		Open Collector	Power Relay	
Sink /Source (NPN /PNP)	Sink	Sink	Sink		Sink	Form C	
Load Voltage	5 ~ 30 V _{dc}	5 ~ 30 V _{dc}	5 ~ 50 V _{dc}		5 ~ 30 V _{dc}	5 A (NO)/3 A (NC) @ 30 V _{dc} 5 A (NO)/3 A (NC) @ 277 V _{ac} 5 A (NO)/3 A (NC) at 65°C	
Max. Load Current	100 mA/channel	100 mA/channel	700 mA/channel		100 mA/channel		
Power on Value	-	-	-	Yes	-	-	
Safe Value	-	-	-	Yes	-	-	
System							
Watchdog	-	-	-		-	-	
Isolation	3750 V _{rms}	3750 V _{rms}	3750 V _{rms}		-	3750 V _{rms}	
Power Consumption	1.5 W	1 W	0.55 W		1 W	2 W	
Connector	D-Sub 37	Terminal Block	Terminal Block		Terminal Block	Terminal Block	
Optional Accessories	DN-37-381-A, DN-8K16P16R	-	-		-	-	



I/O module with DN-37-381-A

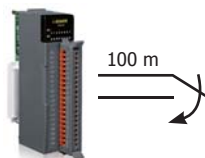
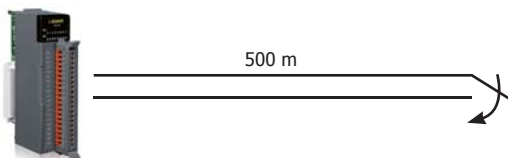
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I/O module with DN-8K16P16R



■ Effective distance for dry contact of DI/DIO module

In general, the effective distance for dry contact of DI module is 100m. With the enhanced circuit design, the distance can be extended up to 500m.



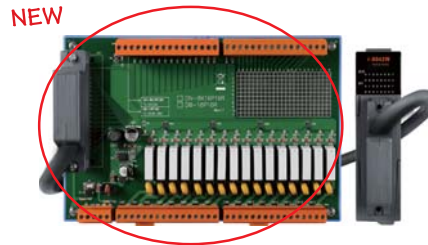
Note1. I-8050W is 16-ch universal digital I/O module. Each channel can be independently configured to be an input or an output channel by software setting.

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Digital Input & Output Modules (Serial Bus)		Table 6-3-6			
Models	I-87042W	I-87054W	I-87055W	I-87063W	
Pictures					
Digital Input					
Channel	16	8	8	4	
Contact	Wet	Wet	Dry+Wet	Wet	
Sink /Source (NPN /PNP)	Sink, Source	Sink, Source	Sink	Sink, Source	
on	Voltage Level	+3.5 ~ +30 V _{DC}	+3.5 ~ +50 V _{DC}	+3.5 ~ +30 V _{DC}	
off	Voltage Level	1 V _{DC} max.	1 V _{DC} max.	1 V _{DC} max.	
Counter (100 Hz, 16-bit)	Yes	Yes	Yes	Yes	
Low Pass Filter	Yes	Yes	Yes	Yes	
Effective Distance for Dry Contact	-	-	100 m	-	
Digital Output					
Channel	16	8	8	4	
Type	Open Collector	Open Collector	Open Collector	Power Relay	
Sink /Source (NPN /PNP)	Sink	Sink	Sink	Form C	
Load Voltage	+5 ~ +30 V _{DC}	+5 ~ +50 V _{DC}	+5 ~ +30 V _{DC}	+5 ~ +24 V _{DC} 0 ~ +250 V _{AC}	
Max. Load Current	100 mA/channel	700 mA/channel	100 mA/channel	5 A (NO)/3 A (NC) @ 30 V _{DC} 5 A (NO)/3 A (NC) @ 277 V _{AC}	
Short Circuit Protection	-	Yes	-	-	
4KV ESD Protection	Yes	Yes	Yes	Yes	
Power on Value	Yes	Yes	Yes	Yes	
Safe Value	Yes	Yes	Yes	Yes	
System					
Dual Watchdog	Yes	Yes	Yes	Yes	
Isolation	3750 V _{rms}	3750 V _{rms}	-	4000 V _{rms}	
Power Consumption	1.5 W	0.7 W	0.6 W	1.5 W	
Connector	D-Sub 37	Terminal Block	Terminal Block	Terminal Block	
Optional Accessories	DN-37-381-A, DN-8K16P16R	-	-	-	



I/O module with DN-37-381-A



I/O module with DN-8K16P16R

■ Effective distance for dry contact of DI/DIO module

In general, the effective distance for dry contact of DI module is 100m. With the enhanced circuit design, the distance can be extended up to 500m.

