

iR Series

Remote I/O Product Specification



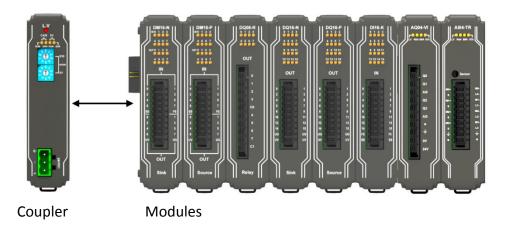
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1. Product Overview



1.1 Product List:

1.1.1 Coupler List:

Coupler	Fieldbus
iR-COP	CANopen Slave
iR-ETN	Modbus TCP/IP Server, EtherNet/IP Adapter
iR-ECAT	EtherCAT® Slave

1.1.2 Digital I/O List:

Part Number		iR-DI16-K	iR-DM16-P	iR-DM16-N	iR-DQ16-P	iR-DQ16-N	iR-DQ08-R
Innert Daint	Point	16	8	8	0	0	0
Input Point	Туре	Sink/Source	Sink/Source	Sink/Source	N/A	N/A	N/A
Outrot Deint	Point	0	8	8	16	16	8
Output Point	Туре	N/A	Source	Sink	Source	Sink	Relay

1.1.3 Analog I/O List:

Part Number	iR-AI04-VI	iR-AM06-VI	iR-AQ04-VI	iR-AI04_TR
Tuno		±10v	RTD	
Туре		±20mA	Thermocouple	
Input Point	4 4 0			4
Output Point	0 2 4			0

1.1.4 Motion List:

Part Number	iR-PU01-P
Differential Output	2 (A/B)
Differential Input	3 (A/B/Z)
Input Point	4
Output Point	4



2. Fieldbus Coupler

2.1 CANopen Specifications

2.1 CANopen S	•						
Communication I	nterface Sp	ecification	ns				
Model	iR-COP						
	No. of Bus Te	erminals	Depends on	Power Consu	mption		
Evnancion I/O	Digital Input	Point	Max. 256				
Expansion I/O	Digital Outpu	ıt Point	Max. 128				
Module	Analog Input Channel		Max. 64				
	Analog Output Channel		Max. 64				
	CAN RUN (Green)		CANopen St	atus Indicator			
	CAN ERR (Red)		CANopen Er	ror Indicator			
Indicators	L.V (Red)		Low Voltage	Status Indica	tor		
	IO RUN (Gree	en)	Module Stat	us Indicator			
	IO ERR (Red)	•	Module Erro	or Indicator			
Data Transfer Rate	1M 800k 500k 250k 125k 100k					100k	50k
Length of the Cable	20m	50m	100m	250m	500m	600m	1,000m
Node ID	1~99						<u> </u>
Number of PDOs							
(CANopen)	8 Transmit PDOs / 8 Receive PDOs						
Process Data							
Operating Modes	synchronous, event-driven ,event timer, polling						
Number of SDOs							
Available	1 Standard SDOs						
Bus Connection	1 x open style connector, 5-pole, plug included						
Additional CANopen	life/node gua	arding, heartk	oeat, emerger	ıcy object, var	iables mappir	ng, store/resto	re, output
Features	error mode.						
CAN bus							
Communication	Yes						
Isolation							
General Specifica	tion						
	Power Supply	У	24 VDC (-15				
	Power Dissip		- , -	%/+20%)			
Power	- :: :: = ::::p	ation	` ·	%/+20%) 0mA@24VDC			
. Ower	Current for Ir		` ·	0mA@24VDC			
	·	nternal Bus	Nominal 10	DmA@24VDC /DC			
	Current for Ir	nternal Bus sumption	Nominal 10 Max 2A@5\	DmA@24VDC /DC /DC			
	Current for Ir	nternal Bus sumption lation	Nominal 10 Max 2A@5\ 170mA@5\	OmA@24VDC /DC /DC ver : Yes			
	Current for Ir Current Cons Electrical Isol	nternal Bus sumption lation	Nominal 10 Max 2A@5\ 170mA@5\ Isolated Pov	OmA@24VDC /DC /DC ver : Yes			
	Current for Ir Current Cons Electrical Isol Back-up Fuse	nternal Bus sumption lation	Nominal 100 Max 2A@5\ 170mA@5\ Isolated Pov ≤ 1.6A Self-I	OmA@24VDC /DC /DC ver : Yes			
Specification	Current for Ir Current Cons Electrical Isol Back-up Fuse PCB Coating	nternal Bus sumption lation	Nominal 10 Max 2A@5\ 170mA@5\ Isolated Pov ≤ 1.6A Self-I	OmA@24VDC //DC //DC ver : Yes recovery			
Specification	Current for Ir Current Cons Electrical Isol Back-up Fuse PCB Coating Enclosure	nternal Bus sumption lation	Nominal 100 Max 2A@5\ 170mA@5\ Isolated Pov ≤ 1.6A Self-1 Yes Plastic	OmA@24VDC /DC /DC ver : Yes recovery			
Specification	Current for Ir Current Cons Electrical Isol Back-up Fuse PCB Coating Enclosure Dimensions \	nternal Bus sumption lation	Nominal 100 Max 2A@5V 170mA@5V Isolated Pov ≤ 1.6A Self-t Yes Plastic 27 x 109 x 8 Approx. 0.1	OmA@24VDC /DC /DC ver : Yes recovery			
Specification	Current for Ir Current Cons Electrical Isol Back-up Fuse PCB Coating Enclosure Dimensions \(\) Weight Mount Protection St	nternal Bus sumption lation e WxHxD	Nominal 100 Max 2A@5V 170mA@5V Isolated Pov ≤ 1.6A Self-t Yes Plastic 27 x 109 x 8 Approx. 0.1	OmA@24VDC /DC /DC ver : Yes recovery			
Specification	Current for Ir Current Cons Electrical Isol Back-up Fuse PCB Coating Enclosure Dimensions \ Weight Mount	nternal Bus sumption lation e WxHxD	Nominal 100 Max 2A@50 170mA@50 Isolated Pov ≤ 1.6A Self-1 Yes Plastic 27 x 109 x 8 Approx. 0.11 35mm DIN I	OmA@24VDC //DC //DC ver: Yes recovery 1 mm 5 kg rail mounting			
	Current for Ir Current Cons Electrical Isol Back-up Fuse PCB Coating Enclosure Dimensions \(\) Weight Mount Protection St	wxHxD cructure perature	Nominal 100 Max 2A@5\ 170mA@5\ Isolated Pov ≤ 1.6A Self-1 Yes Plastic 27 x 109 x 8 Approx. 0.10 35mm DIN II	DmA@24VDC /DC /DC ver: Yes recovery 1 mm 5 kg ail mounting (-4° ~ 158°F)			
Specification Environment	Current for Ir Current Cons Electrical Isol Back-up Fuse PCB Coating Enclosure Dimensions \(\) Weight Mount Protection St Storage Temp	wxHxD cructure perature mperature	Nominal 10 Max 2A@5V 170mA@5V Isolated Pov ≤ 1.6A Self- Yes Plastic 27 x 109 x 8 Approx. 0.1: 35mm DIN IIP20 -20° ~ 70°C 0° ~ 55°C (3	DmA@24VDC /DC /DC ver: Yes recovery 1 mm 5 kg ail mounting (-4° ~ 158°F)	ng)		
	Current for Ir Current Cons Electrical Isol Back-up Fuse PCB Coating Enclosure Dimensions \(\) Weight Mount Protection St Storage Temp	WxHxD cructure perature mperature midity	Nominal 100 Max 2A@50 170mA@50 Isolated Pov ≤ 1.6A Self-1 Yes Plastic 27 x 109 x 8 Approx. 0.11 35mm DIN I IP20 -20° ~ 70°C 0° ~ 55°C (3 10% ~ 90%	DmA@24VDC //DC //DC ver: Yes ecovery 1 mm 5 kg rail mounting (-4° ~ 158°F) 2° ~ 131°F)			
	Current for Ir Current Cons Electrical Isol Back-up Fuse PCB Coating Enclosure Dimensions \(\) Weight Mount Protection St Storage Temp Operating Te Relative Hum	wxHxD cructure perature mperature midity Pressure)	Nominal 100 Max 2A@5\ 170mA@5\ Isolated Pov ≤ 1.6A Self-1 Yes Plastic 27 x 109 x 8 Approx. 0.1\ 35mm DIN 1 IP20 -20° ~ 70°C 0° ~ 55°C (3 10% ~ 90% (8) Below 3,000	OmA@24VDC /DC /DC ver: Yes recovery 1 mm 5 kg rail mounting (-4° ~ 158°F) 2° ~ 131°F) non-condensi	kPa)	tes)	
	Current for Ir Current Cons Electrical Isol Back-up Fuse PCB Coating Enclosure Dimensions \(\) Weight Mount Protection St Storage Temp Operating Te Relative Hum Altitude (Air	WxHxD cructure perature mperature midity Pressure) durance	Nominal 100 Max 2A@50 170mA@50 Isolated Pov ≤ 1.6A Self-1 Yes Plastic 27 x 109 x 8 Approx. 0.1: 35mm DIN II IP20 -20° ~ 70°C 0° ~ 55°C (3 10% ~ 90% (10 to 25Hz)	OmA@24VDC //DC //DC ver: Yes recovery 1 mm 5 kg rail mounting (-4° ~ 158°F) 2° ~ 131°F) non-condensi 0 meters (70.1	kPa) on 2G 30 minu	•	2
Environment	Current for Ir Current Cons Electrical Isol Back-up Fuse PCB Coating Enclosure Dimensions \(\) Weight Mount Protection St Storage Temp Operating Te Relative Hum Altitude (Air Vibration Enc	WxHxD cructure perature mperature midity Pressure) durance	Nominal 100 Max 2A@50 170mA@50 Isolated Pov ≤ 1.6A Self-1 Yes Plastic 27 x 109 x 8 Approx. 0.1: 35mm DIN II IP20 -20° ~ 70°C 0° ~ 55°C (3 10% ~ 90% (10 to 25Hz)	DmA@24VDC //DC //DC ver: Yes recovery 1 mm 5 kg rail mounting (-4° ~ 158°F) 2° ~ 131°F) Inon-condensi 0 meters (70.1 X, Y, Z directic	kPa) on 2G 30 minu	•	2



2.2 Ethernet TCP/IP Specifications

Communication Inte	rface Specifications	
	1	
Model	iR-ETN Number of Bus Terminals	Depends on Power Consumption
	Digital Input Point	Max. 256
Expansion I/O Module	Digital Output Point	Max. 128
Expansion 1/O Module		
	Analog Input Channel	Max. 64 Max. 64
	Analog Output Channel	
	ENET ACK (Green)	Device Status Indicator
la disetera	ENET ERR (Red)	Device Error Indicator
Indicators	L.V (Red)	Low Voltage Status Indicator
	IO RUN (Green)	Module Status Indicator
	IO ERR (Red)	Module Error Indicator
Data Transfer Rate	10/100 Mbps	
Data Transfer Medium	4 x 2 twisted pair copper ca	ble; category 3 (10 Mbps), category 5 (100 Mbps)
Distance Between Stations	100 m between hub/switch	and Bus Coupler or between Bus Coupler and Bus Coupler
Protocol	Modbus TCP/IP Server, Ethe	erNet/IP adapter
Max. Number of TCP/IP		
Connections	8 connections	
Topology	line or star wiring	
Network to Logic	.,	
Isolation	Yes	
General Specificatio	n	
	Power Supply	24 VDC (-15%/+20%)
	Power Dissipation	Nominal 100mA@24VDC
Danner	Current for-Internal Bus	Max 2A@5VDC
Power	Current Consumption	220mA@5VDC
	Electrical Isolation	Logic to Field Power Isolation: Yes
	Back-up Fuse	≤ 1.6A Self-recovery
	PCB Coating	Yes
	Enclosure	Plastic
Specification	Dimensions WxHxD	27 x 109 x 81 mm
	Weight	Approx. 0.15 kg
	Mount	35mm DIN rail mounting
	Protection Structure	IP20
	Storage Temperature	-20° ~ 70°C (-4° ~ 158°F)
Faringan	Operating Temperature	0° ~ 55°C (32° ~ 131°F)
Environment	Relative Humidity	10% ~ 90% (non-condensing)
	Altitude (Air Pressure)	Below 3,000 meters (70.1kPa)
	Vibration Endurance	10 to 25Hz (X, Y, Z direction 2G 30 minutes)
Constituent	CE	CE marked
Certification	UL	cULus Listed
	UL UL	COLU3 LISIEU



2.3 EtherCAT Specifications

Communication Interface Specifications					
Model iR-ECAT					
Number of Bus Terminals Depends on Power Consumption					
Digital Input Point Max. 256					
Expansion I/O Module Digital Output Point Max. 128					
Analog Input Channel Max. 64					
Analog Output Channel Max. 64					
ECAT Run (Green) Device Status Indicator					
ECAT ERR (Red) Device Error Indicator					
Indicators L.V (Red) Low Voltage Status Indicator					
IO RUN (Green) Module Status Indicator					
IO ERR (Red) Module Error Indicator					
Data Transfer Rate 100 Mbps					
Data Transfer Medium 4 x 2 twisted pair copper cable; category 5 (100 Mbps)					
Distance Between 100 m between hub/switch and Bus Coupler or between Bus Coupler and Bus Coupler and Bus Coupler or between Bus Coupler and B	ounler				
Stations Stations	oupiei				
Protocol EtherCat Slave					
MailBox COE -SDO requests, SDO responses.					
ETG Standards ETG 5001					
Network to Logic Yes					
Isolation					
General Specification					
Power Supply 24 VDC (-15%/+20%)					
Power Dissipation Nominal 100mA@24VDC					
Power Current for-Internal Bus Max 2A@5VDC					
Current Consumption 270mA@5VDC					
Electrical Isolation Logic to Field Power Isolation: Yes					
Back-up Fuse ≤ 1.6A Self-recovery					
PCB Coating Yes					
Enclosure Plastic					
Specification Dimensions WxHxD 27 x 109 x 81 mm					
Weight Approx. 0.15 kg					
Mount 35mm DIN rail mounting					
Protection Structure IP20					
Storage Temperature -20° ~ 70°C (-4° ~ 158°F)					
Environment Operating Temperature 0° ~ 55°C (32° ~ 131°F)					
Relative Humidity 10% ~ 90% (non-condensing)					
Altitude (Air Pressure) Below 3,000 meters (70.1kPa)					
Vibration Endurance 10 to 25Hz (X, Y, Z direction 2G 30 minutes)					
CE CE marked					
UL cULus Listed					



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3. Digital Input/Output

3.1 Digital Input / Output Modules

Module Nar	me	iR-DI16-K	iR-DM16-P	iR-DM16-N	iR-DQ16-P	iR-DQ16-N	iR-DQ08-R		
	PCB Coating	No							
Specification	Enclosure	Plastic	Plastic						
	Dimensions WxHxD	27 x 109 x 81	l mm						
	Weight	Approx. 0.12	kg				Approx. 0.13 kg		
	Mount	35mm DIN ra	35mm DIN rail mounting						
	Protection Structure	IP20							
	Storage Temperature	-20° ~ 70°C (
Environment	Operating Temperature	0° ~ 55°C (32	2° ~ 131°F)						
	Relative Humidity	10% ~ 90% (ı	non-condensin	g)					
	Altitude (Air Pressure)	Below 3,000							
	Vibration Endurance	10 to 25Hz ()	X, Y, Z direction	2G 30 minutes	s)				
Connection	Cross-section	AWG 28-16 AWG 24-16							
Certification	CE	CE marked							
Certification	UL	cULus Listed							

3.2 Digital Input Specifications

Module Name		iR-DI16-K	iR-DM16-P	iR-DM16-N			
Number of Inputs		16	8	8			
Input Logic		Sink or Source					
Current Consu	mption	83mA@5VDC	130mA@5VDC	130mA@5VDC			
HIGH Level Inp	out Voltage	15~28 VDC					
LOW Level Inp	ut Voltage	0~5 VDC	0~5 VDC				
Response	OFF->ON	5 ms	5 ms				
Time	ON->OFF	1 ms	1 ms				
Input Impedar	Input Impedance		5.6 ΚΩ				
System Indicators		Red LED Input State	Red LED Input State				
Isolation		Optical Isolation					

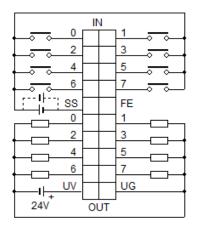
3.3 Digital Output Specifications

)								
Module Name		iR-DM16-P	iR-DQ16-P	iR-DM16-N	iR-DQ16-N	iR-DQ08-R		
Number of O	Number of Outputs		16	8	16	8		
Output Logic		Source		Sink		Relay		
Current Cons	Current Consumption		196mA@5VDC	130mA@5VDC	205mA@5VDC	220mA@5VDC		
Output Voltag	ge	11~28VDC		1 11~ 28//11/		250VAC/ 30VDC		
Output Curre	nt	0.5A per channel Max 4A) 0.5A per channel (Max 4A)		el (Max 4A)	2A per channel (Max 8A)			
Response	OFF→ON	200.00	200		200 -			
Time	ON→OFF	συυμς	- 300μs		300μs			
Isolation			Optical Isolation			Electromagnetic Isolation		

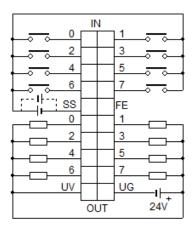


3.4 Wiring

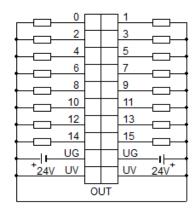
iR-DM16-P



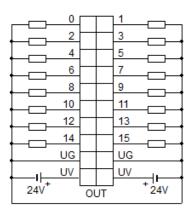
iR-DM16-N



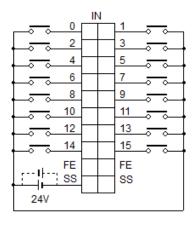
iR-DQ16-N



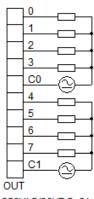
iR-DQ16-P



iR-DI16-K



iR-DQ08-R



250VAC/30VDC, 2A



4. Analog Input/Output

4.1 Analog Input / Output Modules

Module Nar	me	iR-AI04-VI	iR-AM06-VI	iR-AQ04-VI			
Number of Ana	alog Inputs	4 (±10V/ ±20mA)	4 (±10V/ ±20mA)	0			
Number of Ana	alog outputs	0	2 (±10V/ ±20mA)	4 (±10V/ ±20mA)			
Current Consur	mption	70mA@5VDC	70mA@5VDC	65mA@5VDC			
Analog Power	Supply	24 VDC (20.4 VDC~28.8 VI	OC) (-15%~+20%)				
	PCB Coating	Yes					
	Enclosure	Plastic					
Specification	Dimensions WxHxD	27 x 109 x 81 mm					
	Weight	Approx. 0.12 kg					
	Mount	35mm DIN rail mounting					
	Protection Structure	IP20					
	Storage Temperature	-20° ~ 70°C (-4° ~ 158°F)					
Environment	Operating Temperature	0° ~ 55°C (32° ~ 131°F)					
Environment	Relative Humidity	10% ~ 90% (non-condensing)					
	Altitude (Air Pressure)	Below 3,000 meters (70.1kPa)					
	Vibration Endurance	10 to 25Hz (X, Y, Z direction	2G 30 minutes)				
Connection	Cross-section	AWG 28-16		AWG 24-16			
Certification	CE	CE marked					
Certification	UL	cULus Listed					

4.2 Analog Input Specification

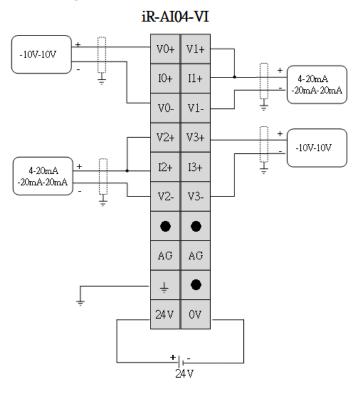
Input Range	-10V~10V \ -20mA~20mA				
Conversion Time	2ms/Channel				
Isolation	500 VDC: (Ana	llog / Digital)			
Data Format	-10~10V	-5V~5V	1~5V	-20~20mA	4~20mA
Data Format	±32000	±32000	0~32000	±32000	0~32000
Resolution	0.312mV	0.156mV	0.156mV	0.625uA	0.625uA
Resolution	16 bit	16 bit	15 bit	16 bit	15 bit
Input Impedance	1ΜΩ 250 Ω				
Diagnose	Supply Voltage Wire break (1~5V & 4~20mA) Overflow/underflow				
Accuracy	± 0.2 % Full Scale At 25°C ± 0.3 % Full Scale At 0° ~ 55°C				

4.3 Analog Output Specification

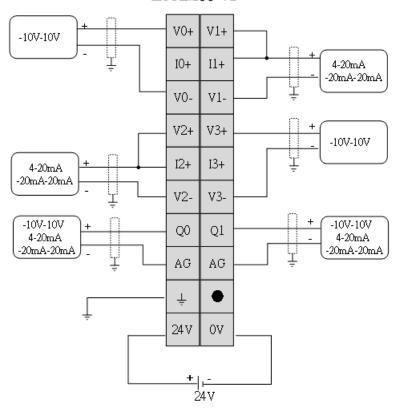
Output Range	-10V~10V \ -20	-10V~10V \ -20mA~20mA				
	1.6ms/4 channels					
Conversion Time	1.3ms/3 channe	els				
Conversion Time	1ms/2 channels	S				
	700us/1 channe	el				
Isolation	500 VDC: (Analog / Digital)					
Data Format	-10~10V	-5V~5V	1~5V	-20~20mA	4~20mA	
Data Format	±32000	±32000	0~32000	±32000	0~32000	
Resolution	5mV	5mV	5mV	10uA	10uA	
Resolution	12bit	11bit	10bit	12bit	11bit	
Output Impedance	$\geq 1k\Omega$ $\leq 500\Omega$					
Accuracy	± 0.2 % Full Scale At 25°C ± 0.3 % Full Scale At 0° ~ 55°C					



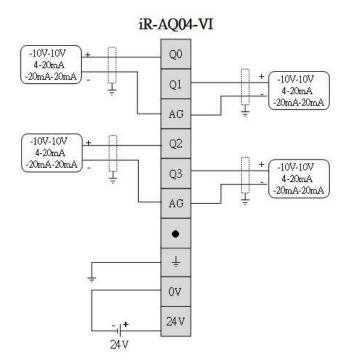
4.4 Wiring



iR-AM06-VI









5. Temperature

5.1 Temperature Module

Module Nar	ne	iR-AI04-TR			
Number of Inp	ut Channels	4 (RTD/Thermocouple)			
Current Consur	mption	65mA@5VDC			
Analog Power	Supply	24 VDC (20.4 VDC~28.8 VDC) (-15%~+20%)			
	PCB Coating	Yes			
	Enclosure	Plastic			
Specification	Dimensions WxHxD	27 x 109 x 81 mm			
	Weight	Approx. 0.12 kg			
	Mount	35mm DIN rail mounting			
	Protection Structure	IP20			
	Storage Temperature	-20° ~ 70°C (-4° ~ 158°F)			
Environment	Operating Temperature	0° ~ 55°C (32° ~ 131°F)			
Environment	Relative Humidity	10% ~ 90% (non-condensing)			
	Altitude (Air Pressure)	Below 3,000 meters (70.1kPa)			
	Vibration Endurance	10 to 25Hz (X, Y, Z direction 2G 30 minutes)			
Connection Cross-section		AWG 28-16			
Certification	CE	CE marked			
Certification	UL	cULus Listed			

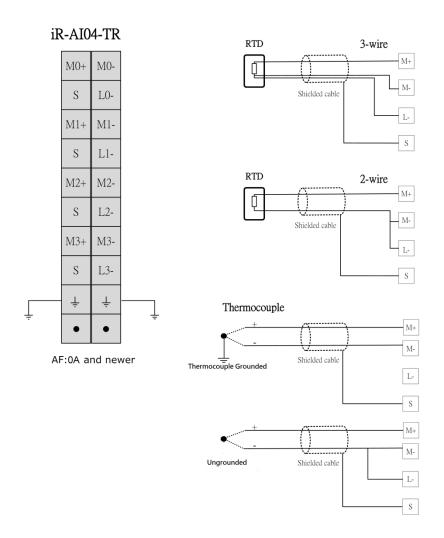
5.2 Temperature Specification

	Туре	Standard	Material	Temperature Range
	J		Fe-CuNi	-210 °C - 1200 °C
	K	1	NiCr-Ni	-270 °C - 1370 °C
	R	1	PtRh-Pt (Pt 13%)	-50 °C - 1760 °C
	S	1	PtRh-Pt (Pt 10%)	-50 °C - 1760 °C
	T	IEC 60584	Cu-CuNi	-270 °C - 400 °C
	E		NiCr-CuNi	-200 °C - 1000 °C
	N		NiCrSi-NiSi	-270 °C - 1300 °C
	В		PtRh-PtRh	200 °C - 1820 °C
	С		W-Re(IEC 584)	0 °C - 2320 °C
Thermocouple	L	DIN 4074.4	Fe-CuNi	0 °C - 900 °C
	U	DIN 43714	Cu-CuNi	-200 °C - 600 °C
	TXK/XK(L)		Ni-9.5%Cr/Cu-44%Ni-13% Rh	-200 °C800 °C
	TBP / BP(A)-1		W-5%Re/W-20%Re	0-2500
	TBP / BP(A)-2	P8.585-2001	W-5%Re/W-20%Re	0-1800
	TBP / BP(A)-3		W-5%Re/W-20%Re	0-1800
	M		Cu-CuNi	-200-100
	Conversion Time		100ms/channel	
	Resolution		0.1°C/0.1°F	
	Accuracy		± [0.4 % Full Scale + 3°C] At 25°C ± [0.6 % Full Scale + 3°C] At 0° ~	
	Туре		Temperature Coefficient	Temperature Range
	Pt100		α: 0.00385	-200°C ~850°C
			α: 0.00392	-200°C ~660°C
	jPt100		JIS C 1609	-200°C ~600°C
	PT200		α: 0.00385	-200°C ~850°C
RTD	PT500		α: 0.00385	-200°C ~850°C
KID	Pt1000		α: 0.00385	-200°C ~850°C
			α: 0.00392	-200°C ~660°C
	LG-Ni1000			- 60~250
	Ni100		0.00617	-100~180
	Ni120		0.00672	-80~260°C
	Ni1000		0.00617	-100~180



	CU50	0.00428	-50°C ~150°C	
	CU100	0.00428	-50°C ~150°C	
	Conversion Time	200ms/channel		
	Resolution	0.1°C/0.1°F		
	Accuracy	± 0.2 % Full Scale At 25°C ± 0.3 % Full Scale At 0° ~ 55°C	5°C	
	Туре	Conversion Time	Resolution	
	±2V	100ms/channel		
	±1V		16bit	
Voltage	±500mV			
Voltage	±250mV			
	±125mV			
	±62.5mV			
	±31.25mV			
	Туре	Conversion Time	Resolution	
Resistance	0-5000Ω (0-30000)	200ms /channel	0.167 Ω	
	0-500Ω (0-30000)		0.0167Ω	
Isolation	500 VDC: (Analog / Digital)			
Diagnose	Supply Voltage Wire break Overflow/underflow			

5.3 Wiring





6. Motion Control

6.1 Modules Specifications

Module Nar	me	iR-PU01-P
Number of Axi	s	1- Axis
	PCB Coating	Yes
	Enclosure	Plastic
Specification	Dimensions WxHxD	27 x 109 x 81 mm
	Weight	Approx. 0.12 kg
	Mount	35mm DIN rail mounting
	Protection Structure	IP20
	Storage Temperature	-20° ~ 70°C (-4° ~ 158°F)
Environment	Operating Temperature	0° ~ 55°C (32° ~ 131°F)
	Relative Humidity	10% ~ 90% (non-condensing)
	Altitude (Air Pressure)	Below 3,000 meters (70.1kPa)
	Vibration Endurance	10 to 25Hz (X, Y, Z direction 2G 30 minutes)
Connection Cross-section		AWG 28-16
Certification	CE	CE marked
Certification	UL	cULus Listed

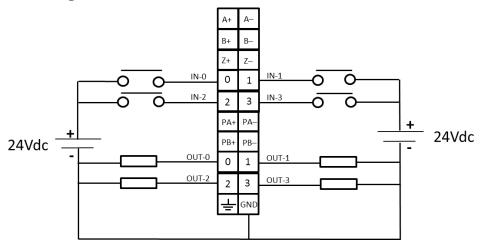
6.2 Digital Input Specifications

Item	Sink Input	Differential Input
Number of Inputs	4	3 (A/B/Z phase)
Input current	24 VDC, 5 mA	Meets the Requirements of ANSI Standards TIA/EIA-485-A
HIGH Level Input Voltage	15~28 VDC	-
LOW Level Input Voltage	0~5 VDC	-
Maximum input frequency	200KHz	2MHz
Input Impedance	3 ΚΩ	-
Indicators	Red LED Input State	

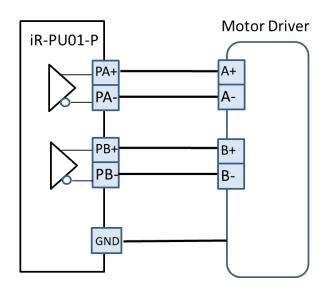
6.3 Digital Output Specifications

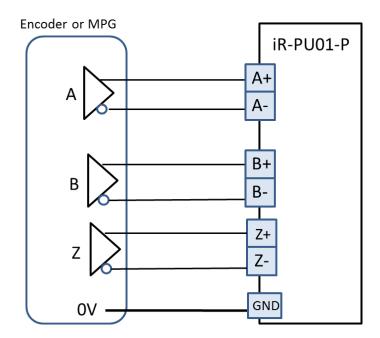
Item	Source Output	Differential Output
Number of Outputs	4	2(A/B phase)
Output Voltage	24VDC , 50 mA	Meets the Requirements of ANSI Standards TIA/EIA-485-A
Maximum Output frequency	40KHz	2MHz
Indicators	Red LED Input State	

6.4 Wiring









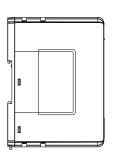


7. Dimensions

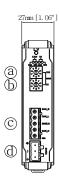
7.1 iR-COP



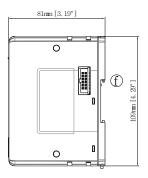
Top View



Side View



Front View



Side View

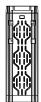


Bottom View

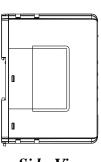
а	Node ID Rotary Switch x10	е	Baud Rate DIP Switch
b	Node ID Rotary Switch x1	f	Expansion Connector
С	CAN Bus Connector		
d	Power Connector		



7.2 iR-ETN



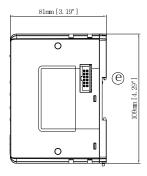
Top View







Front View



Side View

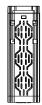


Bottom View

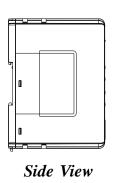
а	Reset Button	е	Expansion Connector
b	LAN 1		
С	LAN 2		
d	Power Connector		

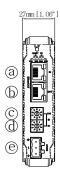


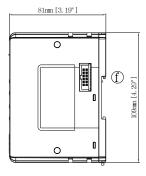
7.3 iR-ECAT



Top View







Front View

Side View



Bottom View

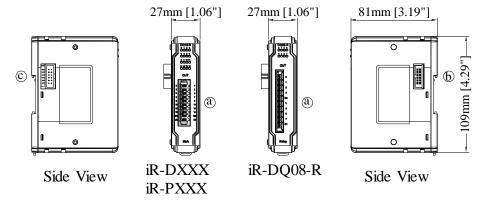
а	X1-EtherCAT IN	е	Power Connector
b	X2-EtherCAT Out	f	Expansion Connector
С	Node ID Rotary Switch x10		
d	Node ID Rotary Switch x1		



7.4 iR-DM16-N & P, iR-DQ16-N&P, iR-DI16-K, iR-DQ08-R, iR-PU01-P



Top View



Front View



Bottom View

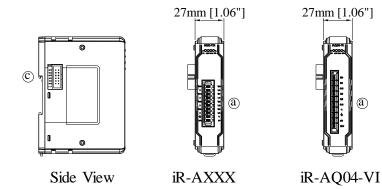
а	Terminal	b.c	Expansion Connector
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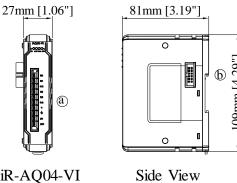


7.5 iR-AI04-VI, iR-AM06-VI, iR-AQ04-VI, iR-AI04-TR



Top View







Bottom View

a Terminal b.c Expansion Connector



8. Power Consumption

Туре	Device	Consumption(5V)	Power Supply(5V)	Power Consumption(24V)
Coupler	iR-ETN	220mA/1.1 W	2A/10w	100mA/2.40W
	iR-COP	170mA/0.85 W	2A/10w	100mA/2.40W
	iR-ECAT	270mA/1.35 W	2A/10w	100mA/2.40W
Digital I/O	iR-DM16-P	130mA/0.65 W		53mA/1.27W
	iR-DM16-N	130mA/0.65 W		56mA/1.34W
	iR-DQ08-R	220mA/1.1 W		84mA/2.02W
	iR-DQ16-N	205mA/1.02 W		78mA/1.87W
	iR-DQ16-P	196mA/0.984 W		75mA/1.80W
	iR-DI16-K	83mA/0.418 W		31mA/0.74W
Analog I/O	iR-AQ04-VI	65mA/0.325 W		25mA/0.60W
	iR-AI04-VI	70mA/0.35 W		27mA/0.65W
	iR-AM06-VI	70mA/0.35 W		27mA/0.65W
	iR-AI04-TR	65mA/0.325 W		25mA/0.60W
Motion	iR-PU01-P	108mA/0.54 W		85mA/2.04W

Note:

The coupler is the only power supply for the modules in this system. Please consider power requirements when connecting multiple modules.

ex.1

Device	Name	Consumption	Power Supply
Coupler	iR-COP	170mA/0.85w	2A/10w
Module	iR-DQ08-R *8	220mA*8=1.76A	Х
System	Power consumption : $170\text{mA} + 1.76\text{A} = 1.93\text{ A}$		
	Power supply: 2A > 1.93A		

Device	Name	Power Consumption	
Coupler	iR-COP	100mA	
Module	iR-DQ08-R *8	84mA*8=672mA	
System	Power consumption : $100\text{mA} + 672\text{mA} = 772\text{mA}$		
	24V Power supply should be greater than: 772mA/18.5W		

ex.2

Device	Name	Consumption	Power Supply
Coupler	iR-ETN	220mA/1.1w	2A/10w
Module	iR-DM16-P *13	130mA*13=1.69A	Χ
System	Power consumption : $220\text{mA} + 1.69\text{A} = 1.91\text{ A}$		
	Power supply: 2A > 1.91A		

Device	Name	Power Consumption
Coupler	iR-ETN	100mA
Module	iR-DM16-P *13	53mA*13=689mA
System	Power consumption : $100\text{mA} + 689\text{mA} = 789\text{mA}$	
	24V Power supply should be greater than: 789mA/18.9W	