

# *iR* Series

## iR-ETN40R Specifications



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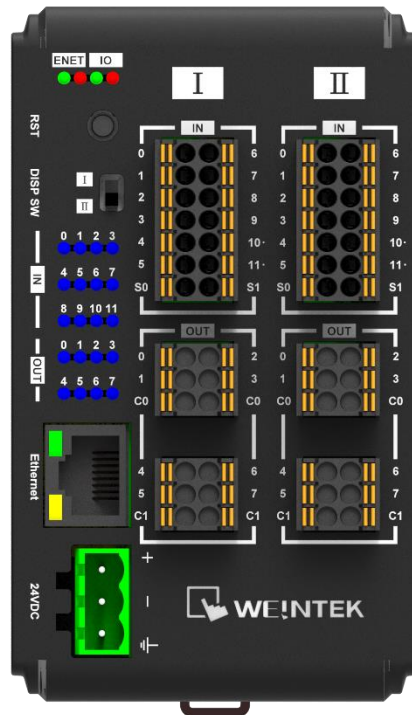
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## 1. Product Overview



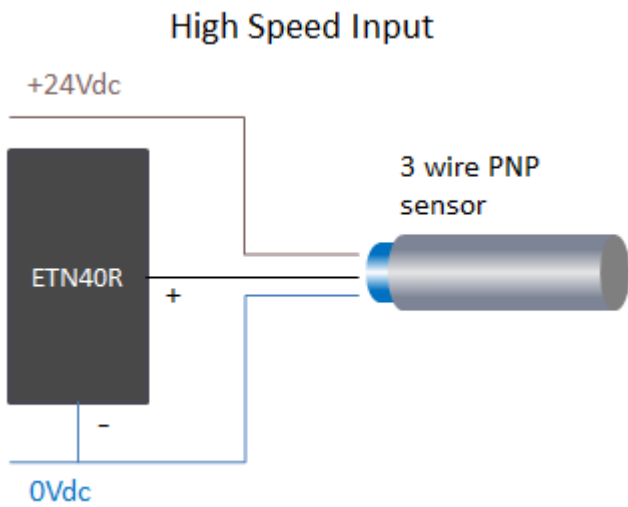
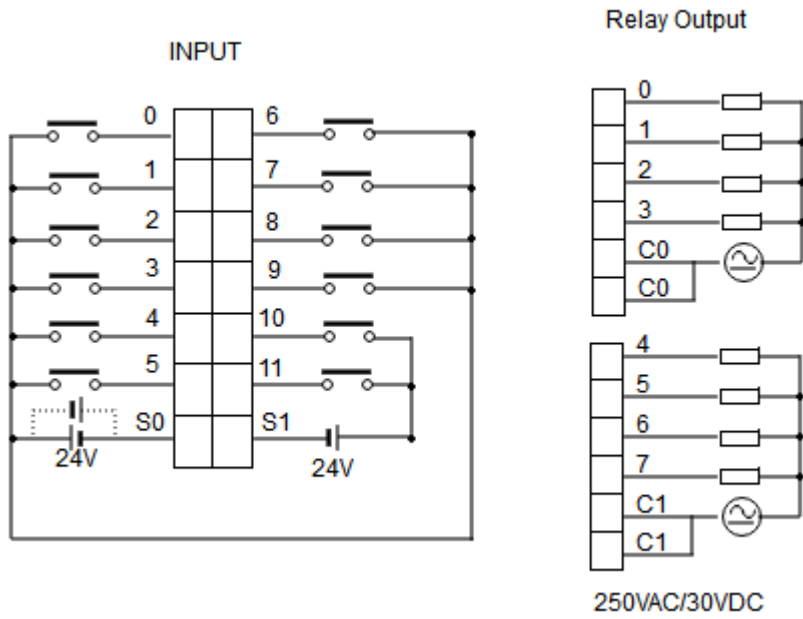
## 2. Specifications

Communication Interface Specifications		
No. of Ports	1	
Data Transfer Rate	10/100 Mbps	
Data Transfer Medium	4 x 2 twisted pair copper cable; 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 Server, EtherNet/IP adapter	
Max. Number of TCP/IP Connections	8 connections	
Network to Logic Isolation	Yes	
Digital Output		
Total Number of Outputs	16	
Output Logic	Relay	
Output Voltage	250VAC/30VDC	
Output Current	2A per channel (Max 8A)	
Response Time	10ms	
Isolation	Yes, electromagnetic isolation	
Digital Input		
Total Number of Inputs	24	
Isolation	Yes, optical isolation	
General Input	Number of Inputs	
		20

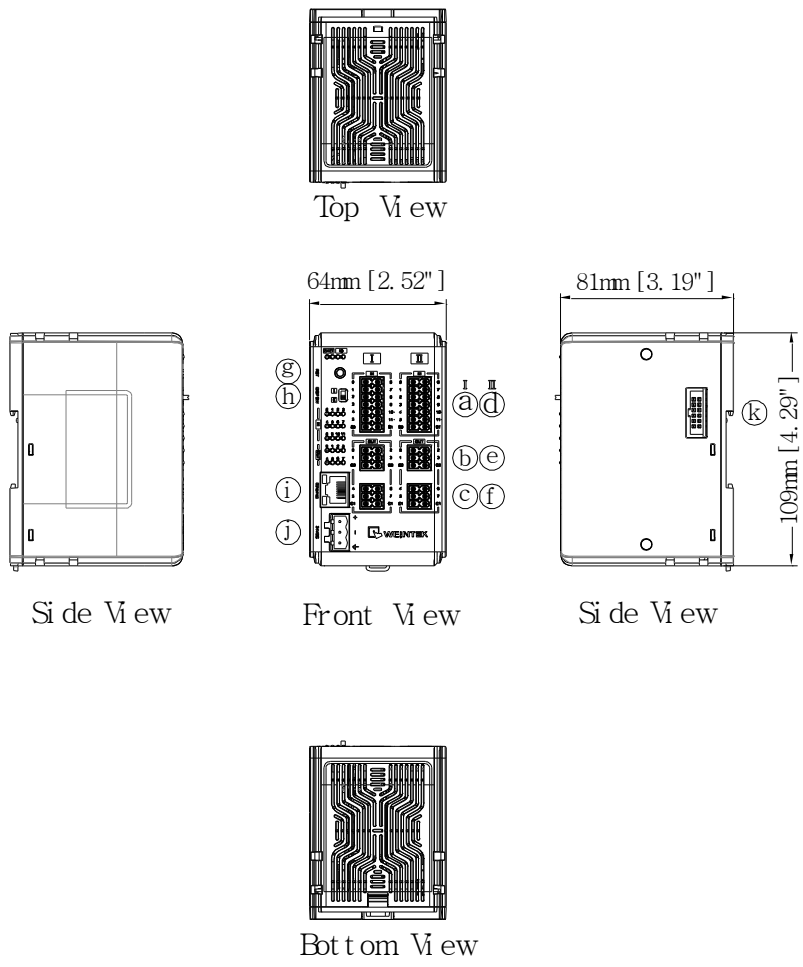
	Input Logic		Sink or Source
	Logic 1 Input Voltage		15~28 VDC
	Logic 0 Input Voltage		0~5 VDC
	Response Time	OFF->ON	5 ms
		ON->OFF	1 ms
Input Impedance		5.6 K $\Omega$	
<b>High-speed Input</b>	Number of Inputs		4
	Input Logic		SINK INPUT (PNP)*
	Logic 1 Input Voltage		15~28 VDC
	Logic 0 Input Voltage		0~5 VDC
	Max. Input Frequency		20KHz
	Input Impedance		3 K $\Omega$
<b>Expansion I/O Module</b>			
<b>Number of Bus Terminals</b>	Depends on Power Consumption (Please see section 5 in this datasheet) The maximum allowable number of iR modules is 16 modules.		
<b>Digital Input Point</b>	Max. 224 (Including 24 built-in points and the max. allowable number is 248 points.)		
<b>Digital Output Point</b>	Max. 112 (Including 16 built-in points and the max. allowable number is 128 points.)		
<b>Analog Input Channel</b>	Max. 64		
<b>Analog Output Channel</b>	Max. 64		
<b>Indicators</b>			
<b>ENET</b>	Green	Device Status Indicator	
	Red	Device Error Indicator	
<b>IO</b>	Green	Module Status Indicator	
	Red	Module Error Indicator	
<b>General Specification</b>			
<b>Power</b>	Power Supply		24 VDC (-15%/+20%)
	Power Dissipation		Nominal 255mA@24VDC
	Current for-Internal Bus		Max 2A@5VDC
	Current Consumption		520mA@5VDC
	Electrical Isolation		Logic to Field Power Isolation: Yes
	Back-up Fuse		$\leq$ 1.6A Self-recovery
<b>Specification</b>	PCB Coating		Yes
	Enclosure		Plastic
	Dimensions WxHxD		64 x 109 x 81 mm
	Weight		Approx. 0.27 kg
	Mount		35mm DIN rail mounting
<b>Environment</b>	Protection Structure		IP20
	Storage Temperature		-20° ~ 70°C (-4° ~ 158°F)
	Operating Temperature		-10° ~ 60°C (14° ~ 140°F)
	Relative Humidity		10% ~ 90% (non-condensing)
<b>Certification</b>	EMC Immunity	Conforms to EN 55032: 2012+AC: 2013, Class A EN 61000-6-4: 2007+A1:2011 EN 55024: 2010+A1: 2015 EN 61000-6-2:2005	

\* Refer to wiring diagram - High Speed Input

### 3. Wiring



## 4. Dimensions



<i>a.d</i>	Input Terminal	<i>b.c.e.f</i>	Output Terminal
<i>g</i>	Reset Button	<i>h</i>	I/O Display Switch
<i>l</i>	Ethernet Port	<i>j</i>	Power Connector
<i>k</i>	Expansion Connector		

## 5. Power Consumption

Type	Device	Consumption(5V)	Power Supply(5V)	Power Consumption(24V)
Coupler	iR-ETN40R	520mA/2.6W	2A/10W	255mA/6.12W
Digital I/O	iR-DM16-P	130mA/0.65W	--	53mA/1.27W
	iR-DM16-N	130mA/0.65W	--	56mA/1.34W
	iR-DQ08-R	220mA/1.1W	--	84mA/2.02W
	iR-DQ16-N	205mA/1.02W	--	78mA/1.87W
	iR-DQ16-P	196mA/0.984W	--	75mA/1.80W
	iR-DI16-K	83mA/0.418W	--	31mA/0.74W
Analog I/O	iR-AQ04-VI	65mA/0.325W	--	25mA/0.60W
	iR-AI04-VI	70mA/0.35W	--	27mA/0.65W
	iR-AM06-VI	70mA/0.35W	--	27mA/0.65W
	iR-AI04-TR	65mA/0.325W	--	25mA/0.60W
Motion	iR-PU01-P	108mA/0.54W	--	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 Connecting six iR-DQ08-R, total number of points: 48+16(built-in) = 64 points, output logic: relay

Device	Name	Consumption (2A/5V)
Coupler	iR-ETN40R	520mA
Module	iR-DQ08-R *6	220mA*6=1.32A
System	Power consumption : 0.520A + 1.32A = 1.840 A Power supply: 2A > 1.840A	

ex.2 Connecting five iR-DI16-K and five iR-DQ16-P

Total number of Input points: 80+24(built-in) = 104 points

Total number of Output points: 80+16(built-in) = 96 points

Device	Name	Consumption (2A/5V)
Coupler	iR-ETN40R	520mA
Module	iR-DI16-K *5	83mA*5=415mA
	iR-DQ16-P *5	196mA*5= 980mA
System	Power consumption : 520 + 415 + 980 = 1915mA Power supply: 2A > 1.915A	