



FR-2053T/HT/TA/HTA/iT

16-channel Isolated Digital Input Distributed I/O Module

Features

- Built-in Wire-saving FRnet DI/DO control
- Simple synchronization mechanism
- No software overhead on protocol processing
- Supporting broadcasting (1:n data transmission)
- Duplicating output easily
- Fixed I/O scan-time and I/O synchronization
- DIN-Rail mountable
- High-speed transmission reliability (only for FR-2053HT and FR-2053HTA)



Introduction

The FR-2053T/HT/TA/HTA/iT series I/O module has an FRnet interface. The users can daisy chain several FR-2053T/HT/TA/HTA/iT modules together. Via FRnet, the FR-2053T/HT/TA/HTA/iT modules can extend the remote I/O control of PC, PAC and PLC easily. Further information about the networking of FR-2053T/HT/TA/HTA/iT; refer to literature related to I-8172W, FRB-100U/200U. According to different applications, the users can choose suitable modules.

The FR-2053T/FR-2053HT has 16-channel isolated photo coupler input.
 The FR-2053TA/FR-2053HTA has 16-channel isolated Sink/Source input.
 The FR-2053iT has 16-channel isolated Sink/Source input.

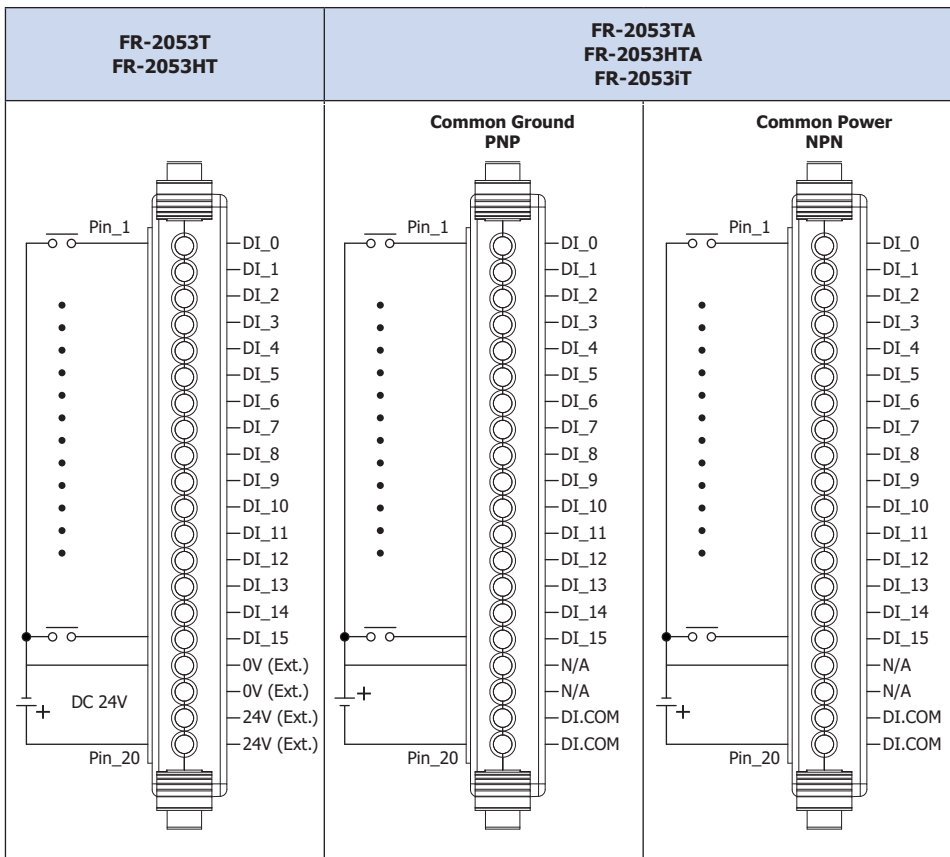
System Specifications

Models	FR-2053T	FR-2053HT	FR-2053TA	FR-2053HTA	FR-2053iT
Interface					
Isolation Voltage	-				3000 Vrms
Wire Cable	2-wire cabling Belden 9841 (2P twisted-pair cable), When different cables are used, the transmission distance may change				
Transfer Speed	250 kbps	1 Mbps	250 kbps	1 Mbps	250 kbps and 1Mbps (Default); DIP Switch Settings
Transfer Distance	Max. 400 m	Max. 100 m	Max. 400 m	Max. 100 m	Max. 400 m for speed 250 kbps; Max. 100 m for speed 1M (Default)
Cyclic Scan Time	2.88 ms	0.72 ms	2.88 ms	0.72 ms	2.88 ms for speed 250 K; 0.72 ms for speed 1M (Default)
LED Indicators					
Power LED Indicator	Yes				
I/O LED Indicator	Yes				
Isolation					
Intra-module Isolation, Field-to-Logic	3000 Vrms				
EMS Protection					
ESD (IEC 61000-4-2)	Yes				
EFT (IEC 61000-4-4)	Yes				
Surge (IEC 61000-4-5)	Yes				
Power					
Input Range	+10 VDC ~ +24 VDC (Non-isolated)		+10 ~ +30 VDC (Non-isolation)		
Consumption	2 W Max.		2.4 W Max.		
Reverse Polarity Protection	Yes				
Connector	5-Pin Removable Terminal Block				
Mechanical					
Casing	Plastic				
Flammability	UL 94V-0 materials				
Dimensions (W x L x H)	33 mm x 102 mm x 107 mm				
Installation	DIN-Rail Mounting				
Environment					
Operating Temperature	-25 to +75°C				
Storage Temperature	-30 to +85°C				
Humidity	10 to 90% RH, Non-condensing				

I/O Specifications

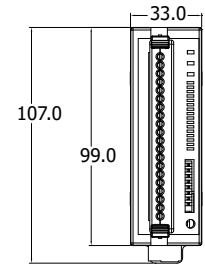
Models	FR-2053T	FR-2053HT	FR-2053TA	FR-2053HTA	FR-2053iT
Digital Input					
Channels	16				
Type	Wet Contact				
Sink/Source (NPN/PNP)	Sink (NPN)		Sink/Source (NPN/PNP)		
Input Impedance	4.7 K Ω		3 K Ω		3.25 K Ω , 0.25 W
Isolation	1500 Vrms		3750 Vrms		
Wet Contact	OFF Voltage Level	+3 VDC Max.		+1 VDC Max.	+11 VDC Max.
	ON Voltage Level	+20 ~ 240 VDC		+3.5 ~ +30 VDC	+19 ~ +30 VDC
Connection	20-Pin Removable Terminal Block				

Pin Assignments and Wire Connections

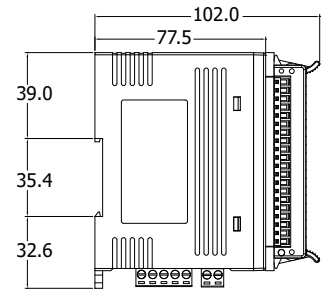


Dimensions (Units: mm)

FR-2053T/FR-2053HT
FR-2053TA/FR-2053HTA
FR-2053iT



Front View



Left View

Ordering Information

FR-2053T CR	16-channel isolated digital input module with 20-pin screw terminal connector (RoHS)
FR-2053HT CR	High-speed 16-channel isolated digital input module with 20-pin screw terminal connector (RoHS)
FR-2053TA CR	16-channel isolated sink/source input module (RoHS)
FR-2053HTA CR	High-speed 16-channel isolated sink/source input module (RoHS)
FR-2053iT CR	16-channel Sink/Source Type Isolated Digital Input Module With Isolated Communication line (RoHS)