

5 Door Cabinet 1000523



Power Supply: CN 10

24 Vac/dc (+/- 10%) 50/60 Hz
Max power consumption: 21 VA

Analog Input: CN 5 & CN 13

AIL 1 : Freezer Temp
AIL 2 : Refrigerate Temp
AIL 3 : -----
AIL 4 : -----
AIL 5 : Door Sensor 01
AIL 6 : Door Sensor 02
AIL 7 : Door Sensor 03

Digital Input: CN 3

DIL 1 : Door Sensor 04
DIL 2 : Door Sensor 05

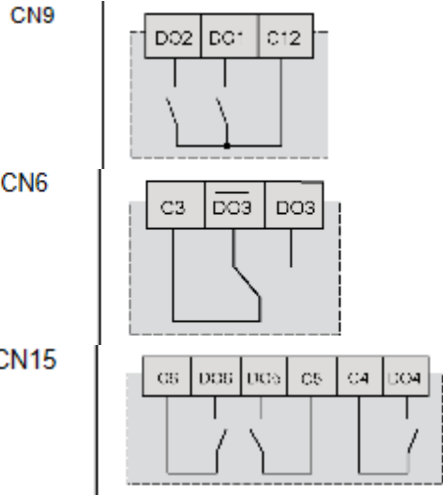
Digital Output: CN 9 & CN 6 & CN 15

DOL 1 : Freezer Solenoid
DOL 2 : Refrigerate Solenoid
DOL 3 : -----
DOL 4 : Buzzer Out
DOL 5 : Compressor Out

5 Door Cabinet 100523

CN 9 Terminal
Digital Output

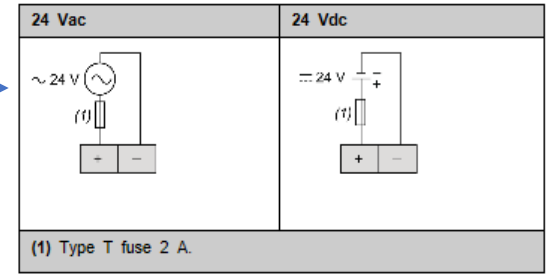
CN 6 Terminal
Digital Output



CN 15 Terminal
Digital Output



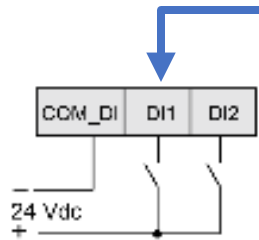
Power supply wiring diagram:



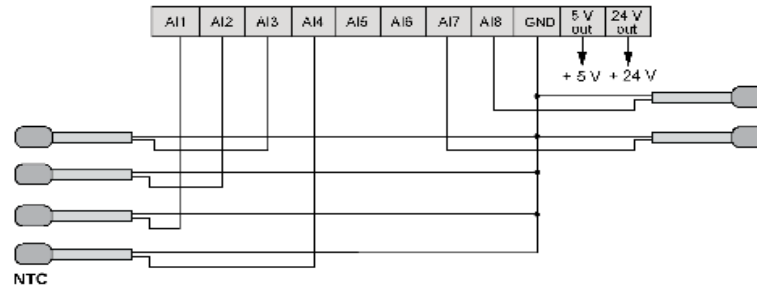
CN 10 Terminal
Power Supply

***USE External Power Supply
for Digital Input**

CN 3 Terminal
Digital Input Fast



CN 5 Terminal
Analog Input



CN 13 Terminal
Analog Input as Digital
Input

**The use of an external power supply
with the dry contact digital inputs can
result in equipment damage.**

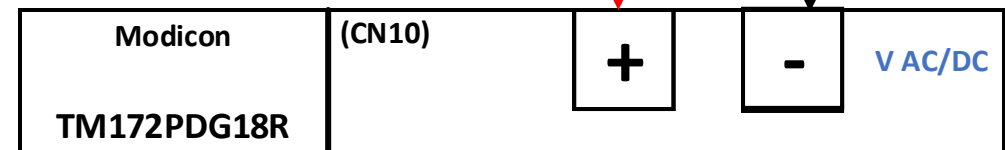
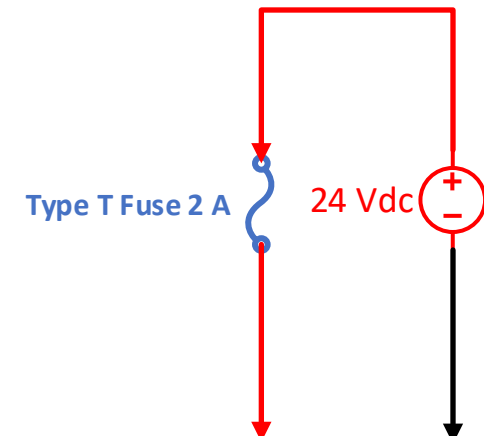
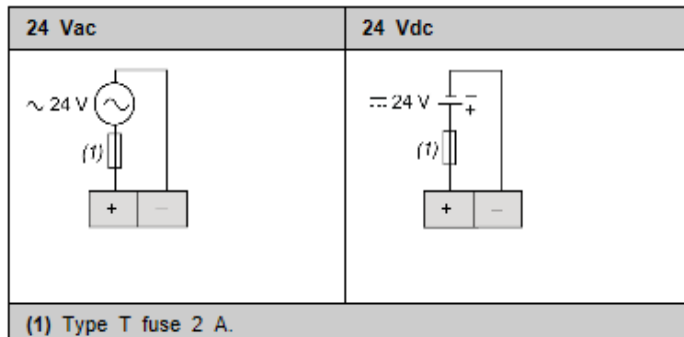
Power Supply

Controllers and Expansion Modules Power Supply

References	Power supply characteristics		Maximum power consumption
TM172P•G07R controller	Isolated	24 Vac (+/- 10 %) - 50/60 Hz	20 VA
		20...38 Vdc	10 W
TM172P•G18• / TM172O•M18R controllers	Isolated	24 Vac (+/- 10 %) - 50/60 Hz	21 VA
		20...38 Vdc	11 W
TM172P••28•I / TM172O••28R controllers	Isolated	24 Vac (+/- 10 %) - 50/60 Hz	23 VA
		20...38 Vdc	12 W
TM172P••42•I / TM172O••42R controllers	Isolated	24 Vac (+/- 10 %) - 50/60 Hz	25 VA
		20...38 Vdc	14 W
TM172P••28• / TM172P••42• controllers	Non-isolated	24 Vac (+/- 10 %) - 50/60 Hz	35 VA
		20...38 Vdc	15 W
TM172E12R expansion module	Non-isolated	24 Vac (+/- 10 %) - 50/60 Hz	20 VA
		20...38 Vdc	10 W
TM172E28R expansion module	Non-isolated	24 Vac (+/- 10 %) - 50/60 Hz	24 VA
		20...38 Vdc	15 W

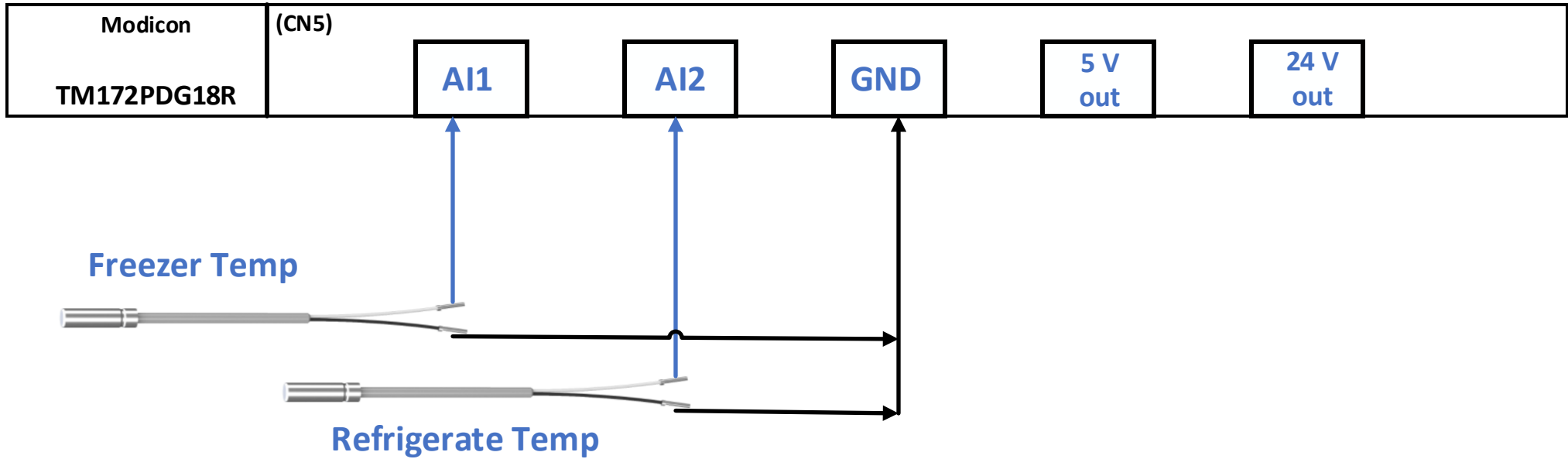
***Refer to Hardware Guide**

Power supply wiring diagram:

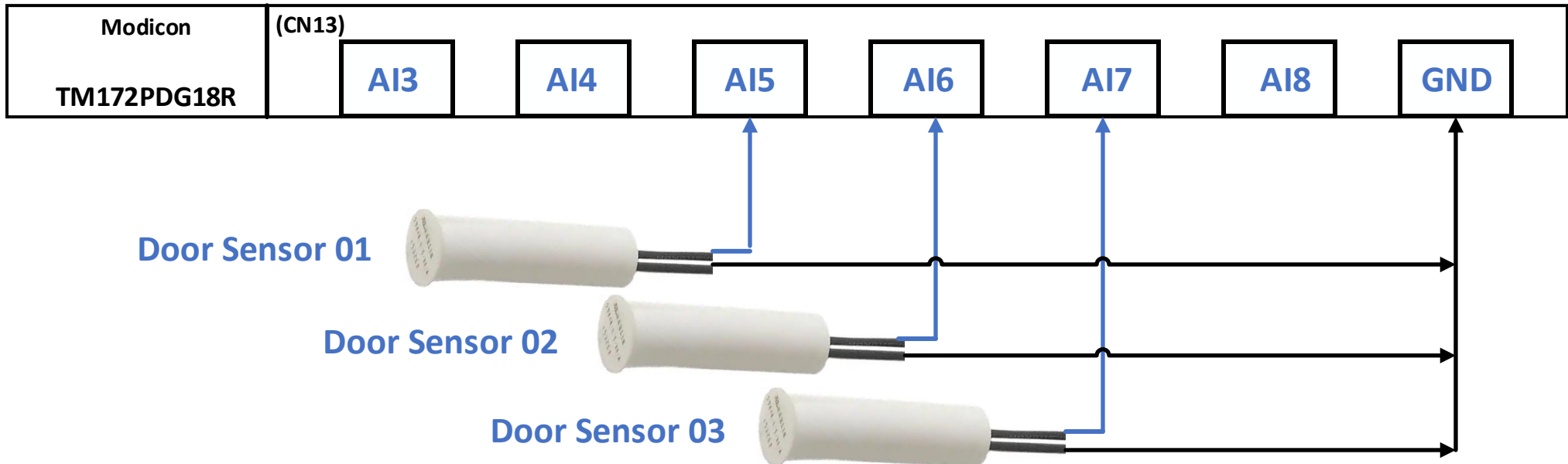


Pitch of the terminal block	Cabling length
3.50 mm (0.14 in.)	10 m (32.8 ft)

Analog Input



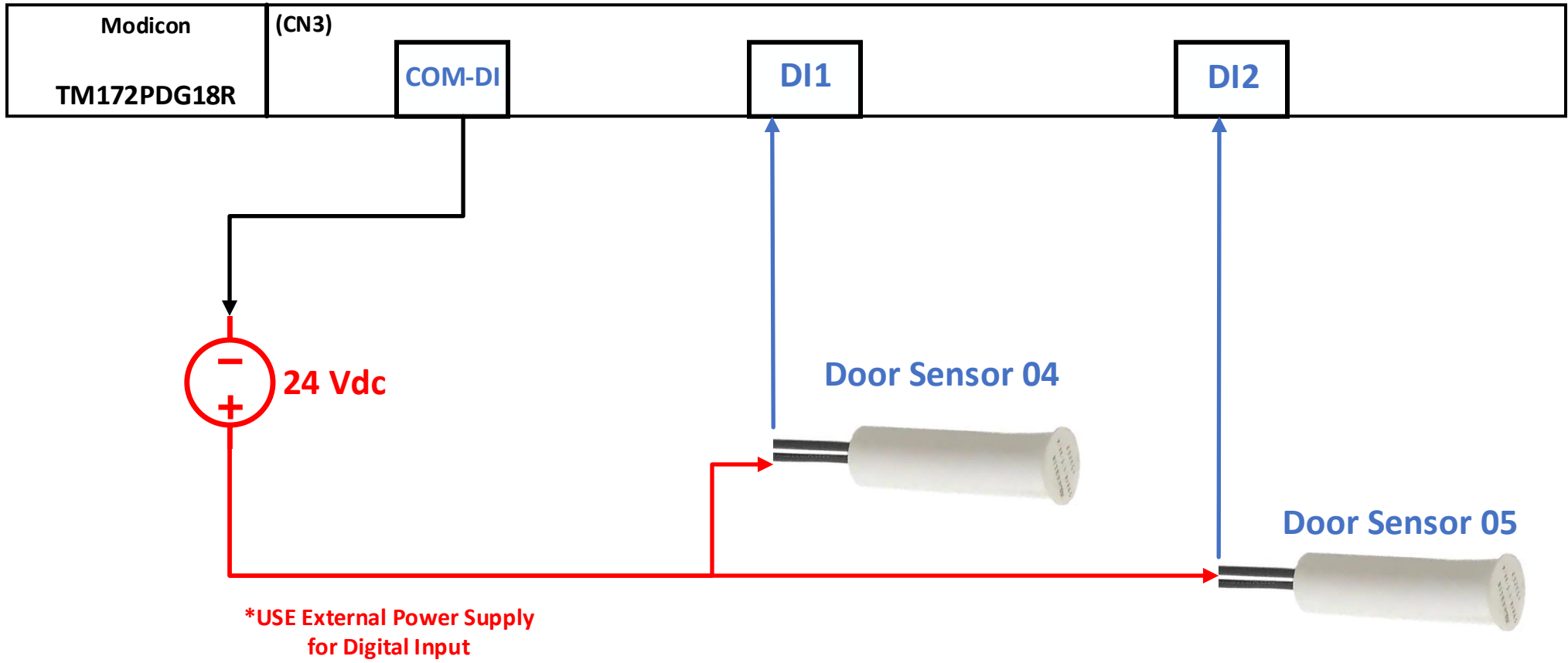
Analog Input as Digital Input



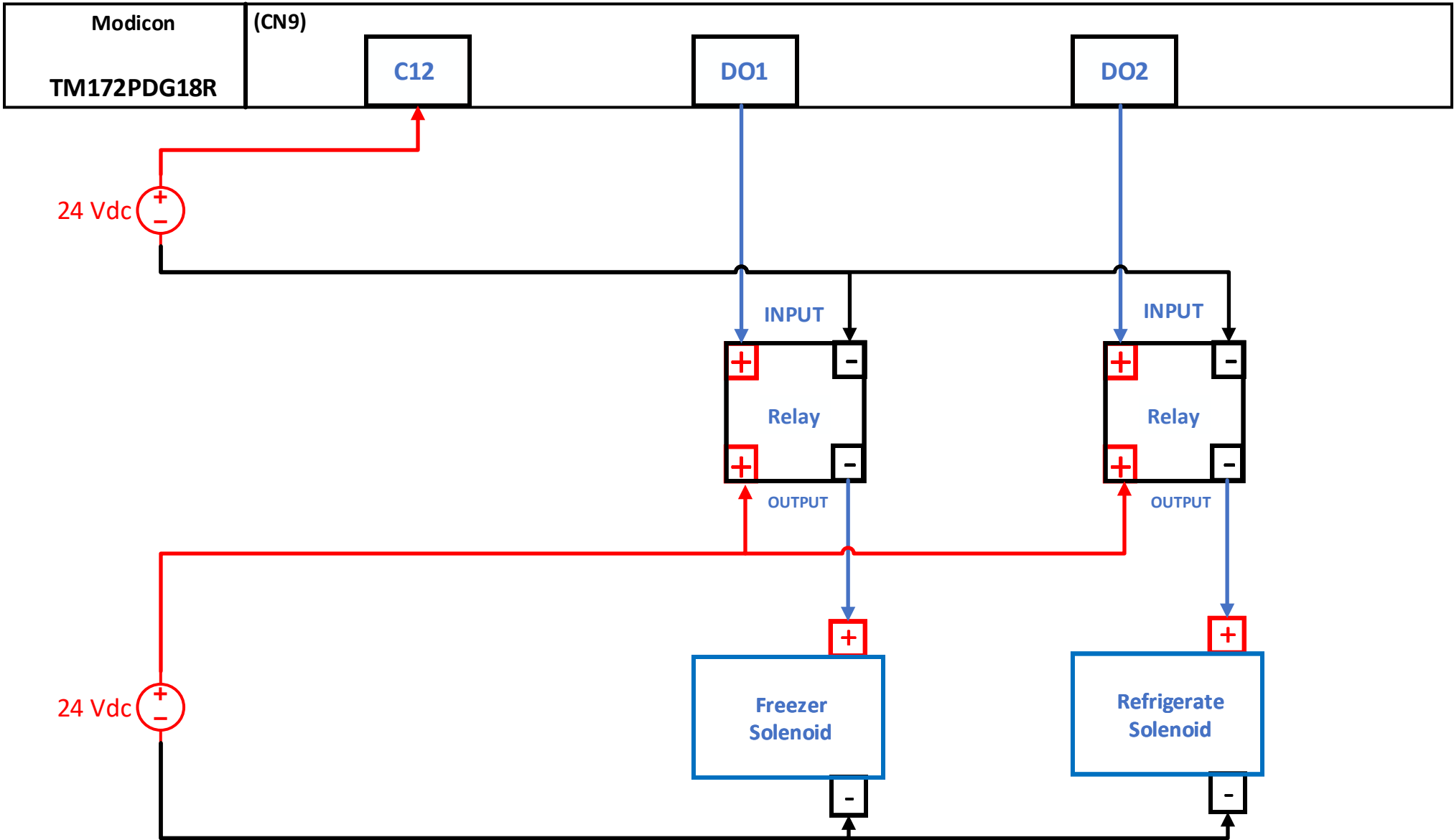
INOPERABLE EQUIPMENT

Do not apply external power supply to the dry contact digital inputs of the device. Failure to follow these instructions can result in equipment damage.

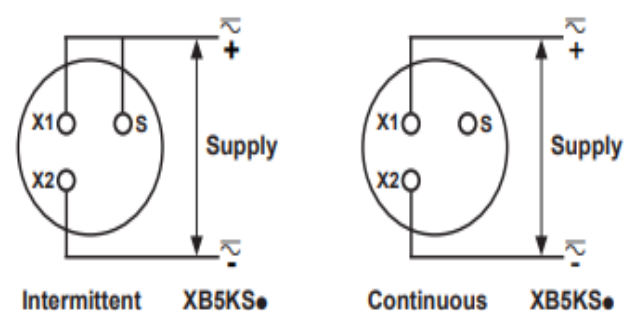
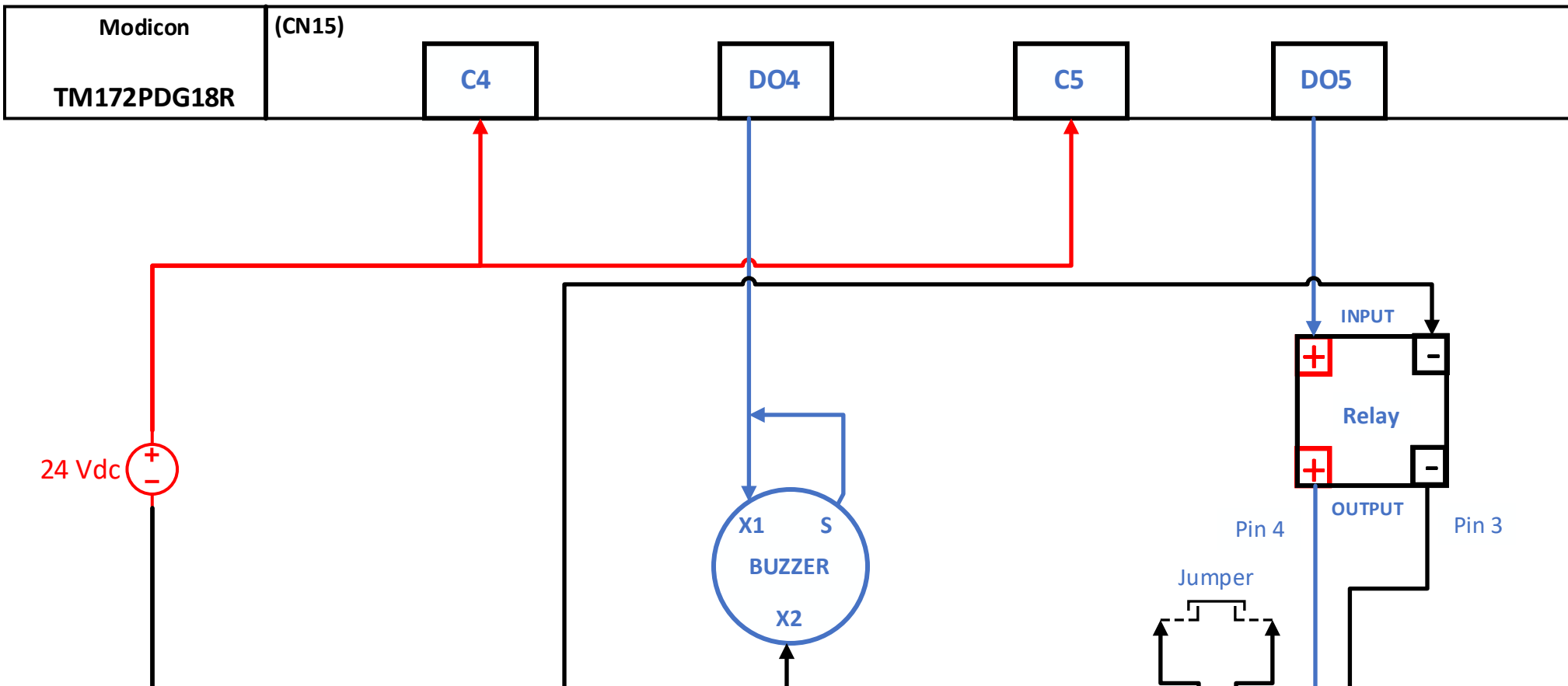
Digital Input



Digital Output Solenoid



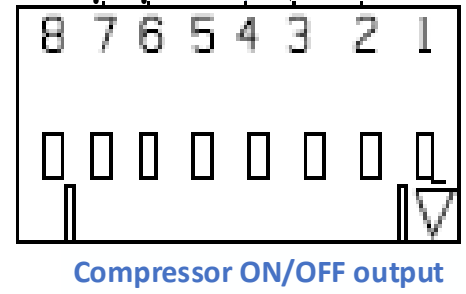
Digital Output



Buzzer Details

JP5 CONTROL INTERFACE	
PIN #	FUNCTION
1	NC
2	GROUND
3	POWER ON/OFF INPUT, SWITCHED POWER (CONNECT TO ON/OFF SWITCH)
4	MOTOR POWER (100K IMPEDANCE) (CONNECT TO ON/OFF SWITCH)
5	TACHOMETER, OUTPUT 0-5V PULSE, FREQUENCY INDICATES MOTOR SPEED, RPM = 2.5 * Hz
6	+5V OUTPUT, USED IN CONJUNCTION WITH PIN #7 FOR SPEED CONTROL
7	SPEED CONTROL, INPUT 0-5V
8	FAULT, OUTPUT 0-5V, 0V = NO FAULT, 5V = FAULT

Compressor JP5 Pin details



NTC Analog Input

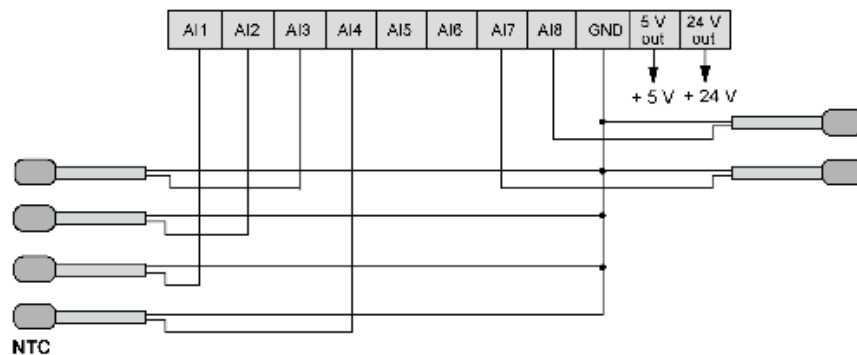
Characteristics

Using the parameter `Cfg_Aix`, an analog input `AIx` can be configured to acquire a signal by a physical resource (probe, digital input, voltage/current signal) as specified in the following table:

Cfg_Aix	Description	Accuracy Range	Accuracy	Resolution	Input Impedance
0	NTC (NK103) 10 kΩ at 25 °C BETA value 3977	-40...+137 °C (-40...+278.6 °F)			
		-40...+110 °C (-40...+230 °F)	+/-1 °C (+/-1.8 °F)	0.1 °C (0.18 °F)	10 kΩ
		+110...+137 °C (+230...+278.6 °F)	+/-1.9 °C (+/-3.42 °F)		
2	NTC (103AT-2) 10 kΩ at 25 °C BETA value 3435	-50...+110 °C (-58...+230 °F)	+/-1 °C (+/-1.8 °F)	0.1 °C (0.18 °F)	10 kΩ
7	hΩ (NTC)		0...150 kΩ		
	TM172P**07* TM172***18*	0...75 kΩ	+/-0.85 kΩ	0.1 kΩ	10 kΩ
		75...150 kΩ	+/-2.4 kΩ		
	TM172***28** TM172***42**	0...150 kΩ		+/-0.85 kΩ	
		TM172E**R	0...70 kΩ	+/-1 kΩ	
	70...120 kΩ		+/-2.5 kΩ		
120...150 kΩ	+/-6 kΩ				

Wiring Diagram Example

TM172***28** / TM172***42** CN5 NTC input connection:



NTC

Pitch of the terminal block	Cabling length
3.50 mm (0.14 in)	10 m (32.808 ft)

For more information about the wiring, refer to [wiring best practices](#).

Analog Input Used as Digital Input

Characteristics

Using the parameter `Cfg_Aix`, an analog input `Aix` can be configured to acquire a signal by a physical resource (probe, digital input, voltage/current signal) as specified in the following table:

<code>Cfg_Aix</code>	Description	Range	Accuracy Range	Accuracy	Resolution	Input Impedance
1	Digital input ⁽¹⁾	-	-	-	-	10 k Ω

(1) The analog inputs configured as digital inputs are not isolated.

The use of an external power supply with the dry contact digital inputs can result in equipment damage.

NOTICE

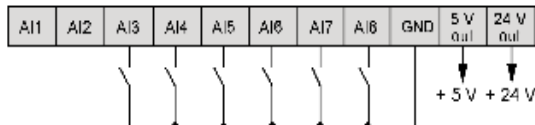
INOPERABLE EQUIPMENT

Do not apply external power supply to the dry contact digital inputs of the device.

Failure to follow these instructions can result in equipment damage.

Wiring Diagram Example

TM172...28.. / TM172...42.. (CN5) analog input used as digital input connection:



Pitch of the terminal block	Cabling length
3.50 mm (0.14 in)	10 m (32.808 ft)

For more information about the wiring, refer to [wiring best practices](#).

Fast Digital Inputs

Overview

If fast digital inputs are used as regular digital inputs, refer to [regular digital inputs wiring diagram](#).

Characteristics

The table indicates the digital inputs characteristics:

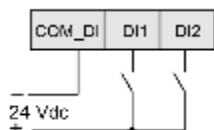
Characteristic	Value	
	Used as fast input	Used as regular input
Type	Digital input	
Power draw (maximum)	5 mA	
Working voltage	+0...38 Vdc	+0...38 Vdc 0...24 Vac +/-10 % 50/60 Hz
Pulse detection minimum length	Positive pulse 0.15 ms	Positive or negative pulse: <ul style="list-style-type: none"> o TM172P**07* / TM172***18*: 40 ms o TM172***28** / TM172***42**: 20 ms o TM172E28R: 40 ms
Maximum frequency measurement	2 kHz	-
Logic type	Digital inputs work in positive logic	Digital inputs work in positive or negative logic
Level 1	+20...38 Vdc	+20...38 Vdc 24 Vac +/-10 % 50/60 Hz
Level 0	+0...4 Vdc	+0...4 Vdc 0...3 Vac 50/60 Hz

Logic type description

Logic type	Active state
Positive logic	Output supplies current (source output) Current flows to the input (sink input)
Negative logic	Output draws current (sink output) Current flows from the input (source input)

Wiring Diagram Example

TM172***07* / TM172***18* / TM172***28** / TM172***42** (CN3) fast digital input:



Pitch of the terminal block	Cabling length
3.50 mm (0.14 in)	10 m (32.808 ft)

For more information about the wiring, refer to [Best wiring practices](#).

Related Devices and Connectors

The table indicates the related devices and connectors

Related Device	Connector	Label	Description
TM172***07* TM172***18* TM172***28** TM172***42**	CN3	COM-DI	Common for digital inputs 1...2
		DI1...DI2	Regular digital inputs 1...2
TM172E**R	CN2		

High voltage Relay SPST Digital Output

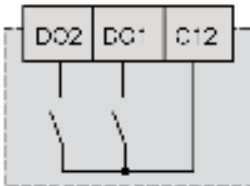

Characteristics

The table indicates the digital outputs characteristics:

Characteristic	Value
Maximum voltage	250 Vac
Maximum current	3 A resistive load, 2 <u>FLA</u> / 12 <u>LRA</u>
Minimum switching capacity	100 mA / 5 Vdc
Electrical durability conforming to UL60730	100 000 cycles, 3 A at 250 Vac

Related Devices and Connectors

The table indicates the related devices and connectors

Related Device	Connector		Label	Description
TM172***07* TM172***18*	CN9		C12	Common for output relays 1...2 Maximum current: 6 A
			DO1...DO2	Output relays 1...2
TM172***18R	CN15		C4	Common for output relay 4 Maximum current: 3 A
			C5	Common for output relay 5 Maximum current: 3 A
			C6	Common for output relay 6 Maximum current: 3 A
			DO4...DO6	Output relays 4...6

High voltage Relay SPDT Digital Output

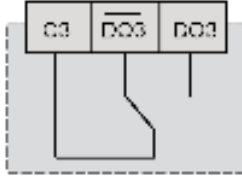
Characteristics

The table indicates the digital outputs characteristics:

Characteristic	Value	
	TM172***07• TM172***18• TM172P**28•I TM172P**42•I TM172O**28R TM172O**42R	TM172P**28• TM172P**42•
Maximum voltage	250 Vac	240 Vac
Maximum current	3 A resistive load, NO contact: 2.2 FLA / 13.2 LRA	-20...55 °C (-4...131 °F): 3 A resistive load -20...60 °C (-4...140 °F): 1 A resistive load -20...65 °C (-4...149 °F): 1 A resistive load if DO8 is inactive
Minimum switching capacity	300 mA, resistive load	300 mA, resistive load
Electrical durability conforming to UL60730	100 000 cycles	100 000 cycles

Related Devices and Connectors

The table indicates the related devices and connectors

Related Device	Connector		Label	Description
TM172***07• TM172***18•	CN6		C3	Common for output relay 3 Maximum current: 3 A
			DO3	Output relay3 - Normally open
			DO3-	Output relay 3 - Normally closed