

# DINnectors™ - The quality is in the details!

## Virtually vibration-proof clamping system

- Provides excellent resistance to screw loosening caused by vibration or shock
- Large contact area due to "V" formed bottom portion of clamp
- Proven design - millions in use today

## Internal jumpers

- Frees up valuable wiring space

## Protective moldings

- Safe design prevents accidental contact with live parts.

## Marking system

- Inclined at a 45° angle for easy reading
- Can be marked by hand or preprinted from 0-1000

## Funneled wire entry

- Allows for fast and easy insertion of the wire into the clamp
- Closed on all four sides for safety

## Wire stops

- Stops wires from being inserted too far

## Snap-on solid foot

- Robust design allows for easy assembly and removal of the terminal block from a DIN rail with a screwdriver

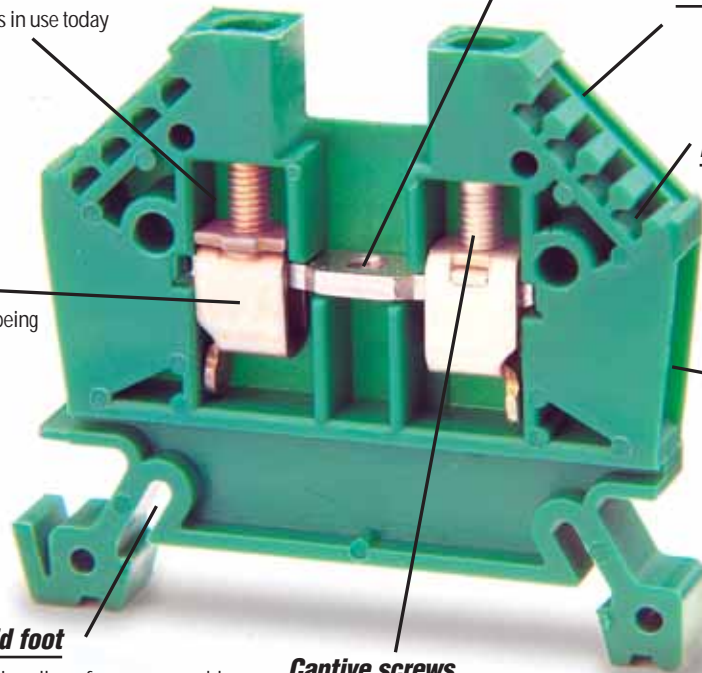
## Captive screws

- Screws cannot be dropped or lost during wiring
- Supplied fully backed out and ready to wire

Agency Approvals



\* UL rating for copper wire only



## 1 Quality materials

DINnectors are manufactured from Polyamide 6.6 plastic with very good electrical, mechanical, and chemical properties. This UL-approved material has a flammability rating of V2 (self-extinguishing) according to UL94. It has a continuous upper temperature limit of 100°C, and a lower temperature limit of -50°C. The Comparative Tracking Index is CTI>600, with an average humidity absorption of 3-4 percent.

DINnectors screws and clamps are manufactured from hardened steel plated with a zinc-dichromate corrosion-resistant finish. The current bars are made from a copper alloy with a tin/lead plating.

## 2 Self-locking clamps

DINnectors terminal blocks are designed with self-locking vibration-resistant clamps, unlike many of our competitors' products. When tightening the screw, the clamp travels up like an elevator, and presses the wire against the conductor. When the wire is fully compressed, the clamp's upper thread overlap springs open and locks the screw threads, preventing the screw from loosening. This "spring-effect" ensures a reliable contact that is virtually impervious to vibration and temperature cycling. When adequately tightened, DINnectors terminal block screw clamps should never require re-tightening.

## 3 High-contact pressure

Continuous, high-contact pressure is essential for a reliable connection. Even the best conductors give poor results if the contact pressure is insufficient. Low-contact pressure causes aggravating and dangerous intermittent connections. DINnectors terminal block screw clamp connection technology offers the highest contact pressure available. DINnectors 12 AWG terminal block produces a high contact force of approximately 169 ft/lbs (750 Nm).

## 4 Low voltage drop

Many electrical engineers consider voltage drop values across the connection points to be an excellent measure of the quality of the terminal block. Low voltage drop means low contact resistance, which indicates a stable and quality contact between the conductor and the terminal block. DINnectors terminal blocks distinguish themselves with very low voltage drop values, which are well under the limits established by various international standards.

## 5 Gas-tight connections

According to DIN standard 41640 part 76, terminal blocks must be tested in a specific, aggressive gas-filled environment. After these tests, DINnectors terminal block contact surfaces showed no signs of corrosion, even with small conductors.

# Save BIG with our terminal blocks

AutomationDirect  
**DINnectors**<sup>™</sup>  
terminal connector



Allen-Bradley  
terminal connector



Weidmuller  
terminal connector



Phoenix Contact  
terminal connector



## Why are you paying more for other brands?

All the terminal blocks shown here look pretty much the same. So with our quality features and great prices, it should be easy to choose DINnectors.

And of course, if you're not completely satisfied with DINnectors for any reason, use our **30-day money-back guarantee to return them.**

### CHECK OUT OUR PRICES

Terminal Connectors	AutomationDirect DINnectors	US	A-B	Weidmuller	Phoenix Contact
Terminal block 10 AWG	<b>\$0.44</b> DN-T10-A		<b>\$2.68</b> 1492-W6	<b>\$1.27</b> 102010	<b>\$0.79</b> 30 04 36 2
Terminal block 1/4" fuse	<b>\$3.72</b> DN-F6		<b>\$13.83</b> 1492-H6	<b>\$9.25</b> 101400	<b>\$7.99</b> 30 04 17 1
Three-level terminal block	<b>\$1.64</b> DN-TL14		<b>\$7.93</b> 1492-WTF3		<b>\$7.31</b> 27 15 97 9
DINrail (2 m)	<b>\$5.60</b> DN-R35S1		<b>\$21.00</b> * 199-DR1	<b>\$16.97</b> 51450	<b>\$21.32</b> 08 01 73 3

\* sold in 1m lengths

Prices may vary by dealer. Many other part numbers are available from all vendors. All prices are U.S. published prices. AutomationDirect prices from April 2012 Price List. A-B prices from www.rockwellautomation.com/en/e-tools 2/20/12. Phoenix Contact prices from www.mouser.com 2/20/12. Weidmuller prices from www.digkey.com 2/20/12.

Pricing for comparison purposes only. DINnectors terminal blocks are sold in packages, not individually.



## **DINnectors**<sup>™</sup> Specifying a Terminal Block System

### Step 2: Determine the electrical specifications

Determine your requirements for the maximum wire size, current, and voltage for each terminal block.

### Step 3: Select the accessories

Choose between deep or shallow then select the appropriate end cover(s) and end brackets. Then decide if you would like to use internal jumpers, top covers, angled support brackets, test plugs, separators, or blank or printed marking tags.

### Step 4: Calculate the rail length

Calculate the density per foot of each type and quantity of terminal block in your assembly to determine the total rail length. Remember to add 1/2 inch for each rail end to accommodate rail mounting screws. Also add 0.0008" (0.2 mm) tolerance per terminal, plus the width of the end brackets, end covers, and any separators.

### Step 5: Place your order!

Call 1-800-633-0405 or visit our Web site at [www.automationdirect.com](http://www.automationdirect.com) to order.



### Step 1: Select the type

Choose from the many types of terminal blocks as required for your system: screw-type or screwless, feed-through, multi-level, mini, ground, fuse, disconnect or direct mount.

# Screw-type DINnectors At a Glance

## Feed-through Terminal Blocks

Feed-through terminal blocks are available in a number of colors and wire size options to ensure flexibility and ease of installation for your DIN-rail mounted connection system.



DN-D12-A



DN-D10-A



DN-T8



DN-T6



DN-T4

## Multi-level/Sensor Terminal Blocks

Double-level terminal blocks offer twice the wiring density of feed-through blocks. Triple-level blocks enable either high-density wiring or simplified, low-cost sensor wiring.



DN-D10-A



DN-D10X-A



DN-D10-LED-A



DN-D10R-A



DN-TL14-A

## Ground Terminal Blocks

Ground terminal blocks are used to mechanically and electrically connect wires to the DIN rail, thus allowing the rail to function as a ground bus bar.



DN-G10



DN-G8



DN-G6



DN-G4



DN-G1/0

## Circuit Protection Blocks

Fuse blocks provide easily-replaceable fuse protection for PLC output devices or modules. They are available for 1/4", 5 mm Midget and Class CC size fuses.



DN-F6



DN-F6L



DN-F10



DN-F10L



DN-FEx  
plus DN-DPx

## Disconnect Terminal Blocks

Convenient operation allows fast circuit disconnection without rewiring.



DN-DIS10



DN-KBD12



DN-DIS2



DN-DIS4

## Mini Terminal Blocks

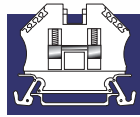
Mini terminal blocks are used in areas with extremely limited space requirements.



DN-M10-A



DN-MG10



# DINnectors™



**DN-T1/0**



**DN-T3/0**



**DN-TL14S-A**



**DN-TL14SLP-A**



**DN-TL14SLN-A**

## DINector standard terminal blocks

- Polyamide 6.6 plastic molding
- Zinc dichromate-plated, hardened steel screws and clamps
- Nickel-plated, copper current bar
- Single or double-level blocks

## Triple-level terminal blocks

- Four types, with and without LED
- Extremely compact 5 mm thick design
- 300V, 10A, 26 to 14 AWG
- UL/CSA/CE approvals

## Colored terminal blocks

- Used for specially identifying circuits for ease of wiring and troubleshooting
- Available in standard gray, as well as blue, black, red, yellow, green, orange and white for the DN-T12-A, DN-T10-A and DN-T8 feed-through terminals. The DN-D10-A double-level terminal blocks are available in all of the above colors except white.

## Circuit Protection blocks

- Quick and easy DIN-rail mounting
- Available with long lasting neon or LED indicator light for quick troubleshooting
- UL/CSA approvals for supplementary protection; CE approved

## Specialty blocks

- Thermocouple blocks
- Plug-in blocks
- Disconnect blocks
- Mini terminal blocks



Many DINnectors are available in 8 colors!

### Thermocouple Blocks

Single clamp design allows excellent connection to all types of thermocouple wiring.



**DN-THERM1**



**DN-THERM2**

used in areas requirements.

### Plug-in Blocks

Plug-in terminal blocks allow for quicker installation of field device wiring and reduces the chance for incorrect wiring.



**DN-EMXM1**  
(plugs sold separately)



**DN-EMXDV**  
(plugs sold separately)

For an overview of screwless DINnectors, go to page 29-35

# DINnectors Component Overview (screw type)

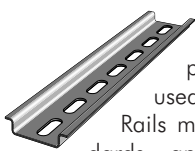
## DINnectors Terminal Blocks



The screw-type DINnectors series includes standard, double and triple level terminal blocks, some in up to seven colors. Fuse blocks are also available.

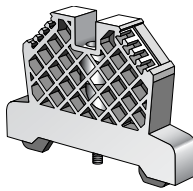
## Accessories

### Mounting rail (required)



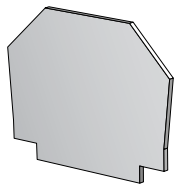
Allows multiple blocks to be mounted to a panel, and may also be used as a ground bus bar. Rails meet international standards and are supplied in 3'3"(1m) lengths, slotted steel.

### End bracket (required)



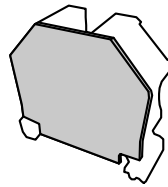
Used to add rigidity to a terminal block assembly and prevent sliding along the rail by mounting one polyamide end bracket at each end of an assembly. End brackets attach directly to the DIN rail by means of a clamping foot and can accept marking tags to serve as a group marker.

### End cover (required)



Provides electrical insulation for the exposed metal components of the last terminal block in an assembly. Interlocking pins secure the polyamide end cover to the terminal block while allowing easy insertion and removal. When the size of blocks change in an assembly, an end cover is required to insulate the open side of the block.

## Separator



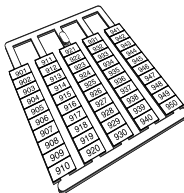
Used to electrically or visually separate groups of terminal blocks, or to electrically insulate adjacent internal jumpers. Separators project beyond the terminal block on all sides.

## Jumpers



Used to electrically interconnect two or more consecutive terminal blocks, without reducing the wiring capacity of the blocks. Jumpers are available in two, three, four, and longer pole configurations. Jumpers are made of electrolytic copper with a corrosion-resistant nickel plating. Insulated double jumpers reduce the risk of accidental shock.

## Terminal Marking tags



Provides circuit organization and identification of the terminals. Terminal marking tags are available either blank or preprinted, and fit onto the terminal blocks.

## Wire Marking tags



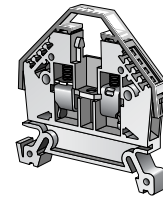
Provides circuit organization and identification of the wires. Wire marking tags are available with blank tags and clear tag holders for wire sizes from 26 AWG to 5AWG.

## Angled support bracket



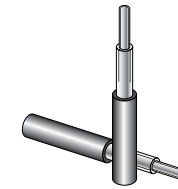
Raises and tilts the mounting rail above the panel for easier and faster wiring.

## Top cover



Certain VDE regulations require the use of terminal block covers. The transparent polycarbonate covers are printed with a warning arrow and the international danger symbol, allowing the marking tag area and jumpers to remain visible after installation.

## Test plugs



Used for hands-free circuit troubleshooting and testing, the test plugs are inserted into the jumper hole of the terminal block current bar. These plug-in style devices cannot be used when jumpers are installed. Plug diameter is 2.8 mm.

## Wiring Accessories & Tools

We offer a wide selection of wire ferrules and crimp terminals, stripping and crimping tools, jumper cutters in the "Wiring Accessories" section of this chapter. An excellent variety Wera brand screwdrivers as well as RUKO cutting tools can be found in the tools chapter of our catalog.



## Standards

DINnector terminal blocks are tested to the following standards:

- EN/IEC 60947-1
- EN/IEC 60947-7-1
- IEC 60947-7-2
- IEC 60947-7-3
- CSA C 22.2
- UL 1059
- UL 486A-486B
- UL 486E

# Screwdriver Application Guide

## Application Guide

AutomationDirect also sells high-quality insulated screwdrivers. Use these tables to find the right screwdriver to use for your DINnectors or PLC terminals.

See the Tools section in this catalog for more information on these screwdrivers.



Screwdriver Application Guide							
DINnectors & PLC Terminals	Insulated Slotted Screwdrivers				Insulated Phillips Screwdrivers		6mm Hex Head
	TW-SD-VSL-1, DN-SS1	TW-SD-VSL-2, DN-SS3	TW-SD-VSL-3, DN-SS4	TW-SD-VSL-4, DN-SS5	TW-SD-VPH-1, DN-SP1	TW-SD-VPH-2, DN-SP2	
DN-D10-A		X					
DN-D10DR-A		X					
DN-D10LED1-A		X					
DN-D10X-A		X					
DN-DIS10			X				
DN-F6			X				
DN-F6L24			X				
DN-F6L110			X				
DN-F6L220			X				
DN-F10		X					
DN-F10L24		X					
DN-F10L110		X					
DN-F10L220		X					
DN-G1/0				X			
DN-G4				X			
DN-G6			X				
DN-G8			X				
DN-G10		X					
DN-KBD12	X						
DN-M10-A		X					
DN-M10B-A		X					
DN-MG10		X					
DN-T1/0				X			
DN-T1/0B				X			
DN-T3/0							X
DN-T4				X			
DN-T4B				X			
DN-T6			X				
DN-T6B			X				
DN-T8			X				
DN-T8B			X				
DN-T10-A		X					
DN-T10B-A		X					
DN-T12-A	X						
DN-T12B-A	X						
DN-TL14-A	X						
DN-TL14S-A	X						
DN-TL14SLP-A	X						
DN-TL14SLN-A	X						
D2-8IOCON					X		
D2-16IOCON	X						
D3-16IOCON					X		
D4-16IOCON						X	

**Note:** See next page for additional selections.

# Screwdriver Application Guide (continued)



Screwdriver Application Guide Cont.							
DINnectors & PLC Terminals	Insulated Slotted Screwdrivers				Insulated Phillips Screwdrivers		Hex Head
	TW-SD-VSL-1, DN-SS1	TW-SD-VSL-2, DN-SS3	TW-SD-VSL-3, DN-SS4	TW-SD-VSL-4, DN-SS5	TW-SD-VPH-1, DN-SP1	TW-SD-VPH-2, DN-SP2	
CO-3TB	X						
CO-4TB	X						
CO-8TB	X						
CO-16TB	X						
DN-THERM1	X						
DN-THERM2	X						
DN-FE2		X					
DN-FE2L12		X					
DN-FE2L24		X					
DN-FE4		X					
DN-FE4L12		X					
DN-FE4L24		X					
DN-DIS2		X					
DN-DIS2L12		X					
DN-DIS2L24		X					
DN-DIS4		X					
DN-DIS4L12		X					
DN-DIS4L24		X					
DN-EMXM1		X					
DN-EMXDV		X					
DN-QEMXM1			X				
DN-QEMXDV			X				
DN-Q12-A		X					
DN-Q12B-A		X					
DN-Q10-A			X				
DN-Q10B-A			X				
DN-Q8-A			X				
DN-Q8B-A			X				
F0-IOCON	X						
F1-IOCON					X		
P3-RTB					X		

# Multiple Wire Combinations

The following table shows the possible multiple wire combinations for stranded copper conductors of the same cross section:

Multiple Wire Connection Combinations																	
		Wire Size AWG (mm <sup>2</sup> )															
		#24	#22	#20	#18	#16	#14	#12	#10	#8	#6	#4	#2	#1	1/0	2/0	3/0
		(0.25)	(0.34)	(0.50)	(0.75)	(1.5)	(2.5)	(4)	(6)	(10)	(16)	(25)	(35)	(50)	(55)	(70)	(95)
Part Number	UL Rating	Number of the Same Size Wires Per Terminal Block															
DN-D10-A	24-10	4	4	3	3	2	2	1	1	-	-	-	-	-	-	-	-
DN-D10DR-A	24-10	4	4	3	3	2	2	1	1	-	-	-	-	-	-	-	-
DN-D10LED1-A	24-10	4	4	3	3	2	2	1	1	-	-	-	-	-	-	-	-
DN-D10X-A	24-10	4	4	3	3	2	2	1	1	-	-	-	-	-	-	-	-
DN-DIS10	24-10	4	3	3	2	2	1	1	1	-	-	-	-	-	-	-	-
DN-F10	24-10	4	3	3	2	2	1	1	1	-	-	-	-	-	-	-	-
DN-F10L110	24-10	4	3	3	2	2	1	1	1	-	-	-	-	-	-	-	-
DN-F10L220	24-10	4	3	3	2	2	1	1	1	-	-	-	-	-	-	-	-
DN-F10L24	24-10	4	3	3	2	2	1	1	1	-	-	-	-	-	-	-	-
DN-F6	20-6	-	-	4	4	3	3	2	2	1	1	-	-	-	-	-	-
DN-F6L110	20-6	-	-	4	4	3	3	2	2	1	1	-	-	-	-	-	-
DN-F6L220	20-6	-	-	4	4	3	3	2	2	1	1	-	-	-	-	-	-
DN-F6L24	20-6	-	-	4	4	3	3	2	2	1	1	-	-	-	-	-	-
DN-G1/0	14-2	-	-	-	-	-	3	2	2	2	1	1	1	1	1	-	-
DN-G10	24-10	4	4	4	3	2	2	1	1	-	-	-	-	-	-	-	-
DN-G4	14-4	-	-	-	-	-	4	3	2	2	1	1	-	-	-	-	-
DN-G6	20-8	-	-	4	4	3	2	2	1	1	-	-	-	-	-	-	-
DN-G8	22-8	-	4	4	4	3	2	2	1	1	-	-	-	-	-	-	-
DN-KBD12	22-12	-	3	3	2	2	1	1	-	-	-	-	-	-	-	-	-
DN-M10-A	24-10	4	3	3	2	2	1	1	1	-	-	-	-	-	-	-	-
DN-MG10	18-10	-	-	-	3	2	2	1	1	-	-	-	-	-	-	-	-
DN-T1/0	14-1/0	-	-	-	-	-	3	2	2	2	1	1	1	1	1	-	-
DN-T10-A	24-10	4	4	4	3	2	2	1	1	-	-	-	-	-	-	-	-
DN-T12-A	24-12	4	4	3	2	2	1	1	-	-	-	-	-	-	-	-	-
DN-T3/0	4-3/0	-	-	-	-	-	-	-	-	-	-	1	1	1	1	1	1
DN-T4	14-4	-	-	-	-	-	4	3	2	2	1	1	-	-	-	-	-
DN-T6	20-6	-	-	4	4	3	3	2	2	1	1	-	-	-	-	-	-
DN-T8	22-8	-	4	4	4	3	2	2	1	1	-	-	-	-	-	-	-
DN-TL14-A	26-14	4	3	2	2	1	1	-	-	-	-	-	-	-	-	-	-
DN-TL14S-A	26-14	4	3	2	2	1	1	-	-	-	-	-	-	-	-	-	-
DN-TL14SLP-A	26-14	4	3	2	2	1	1	-	-	-	-	-	-	-	-	-	-
DN-TL14SLNA	26-14	4	3	2	2	1	1	-	-	-	-	-	-	-	-	-	-

# Multiple Wire Combinations Cont.

Multiple Wire Connection Combinations Cont.																	
		Wire Size AWG (mm <sup>2</sup> )															
		#24	#22	#20	#18	#16	#14	#12	#10	#8	#6	#4	#2	#1	1/0	2/0	3/0
			(0.5)	(0.75)	(1)	(1.5)	(2.5)	(4)	(6)	(10)	(16)	(25)	(35)	(50)	(50)	(70)	(80)
Part Number	UL Rating	Number of the Same Size Wires Per Terminal Block															
<b>DN-FE4</b>	24-10	4	4	3	3	2	2	1	1	-	-	-	-	-	-	-	-
<b>DN-FE4L12</b>	24-10	4	4	3	3	2	2	1	1	-	-	-	-	-	-	-	-
<b>DN-FE4L24</b>	24-10	4	4	3	3	2	2	1	1	-	-	-	-	-	-	-	-
<b>DN-DIS4</b>	24-10	4	4	3	3	2	2	1	1	-	-	-	-	-	-	-	-
<b>DN-DIS4L12</b>	24-10	4	4	3	3	2	2	1	1	-	-	-	-	-	-	-	-
<b>DN-DIS4L24</b>	24-10	4	4	3	3	2	2	1	1	-	-	-	-	-	-	-	-
<b>DN-FE2</b>	24-12	4	4	3	2	2	1	1	-	-	-	-	-	-	-	-	-
<b>DN-FE2L12</b>	24-12	4	4	3	2	2	1	1	-	-	-	-	-	-	-	-	-
<b>DN-FE2L24</b>	24-12	4	4	3	2	2	1	1	-	-	-	-	-	-	-	-	-
<b>DN-DIS2</b>	24-12	4	4	3	2	2	1	1	-	-	-	-	-	-	-	-	-
<b>DN-DIS2L12</b>	24-12	4	4	3	2	2	1	1	-	-	-	-	-	-	-	-	-
<b>DN-DIS2L24</b>	24-12	4	4	3	2	2	1	1	-	-	-	-	-	-	-	-	-
<b>DN-EMXM1</b>	24-12	4	4	3	2	2	1	1	-	-	-	-	-	-	-	-	-
<b>DN-EMXDV</b>	24-12	4	4	3	2	2	1	1	-	-	-	-	-	-	-	-	-
<b>DN-QEMXM1</b>	24-12	4	4	3	2	2	1	1	-	-	-	-	-	-	-	-	-
<b>DN-QEMXDV</b>	24-12	4	4	3	2	2	1	1	-	-	-	-	-	-	-	-	-