TERMINAL BLOCK RELAYS

series TBR

c3controls Terminal Block Relays are designed to meet your control and automation system requirements, which need reliable, safe connections as well as isolation between electronic controls and process I/O. Due to their unmatched size, flexibility, and various other features, terminal block relays can help you save money and premium panel space. Just look and see what Series TBR has to offer!



Section 27

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PROVEN

Conformity to Standards:
Socket
UL 508
CSA 22.2 No. 14
IEC 60947-1, 60947-5-1

Visit c3controls.com to download product certifications.

Certifications:

UL File #: E236196 (Guide SWIV2, SWIV8)

CE Marked (per EU Low Voltage Directive 2014/35/EU and RoHS Directive EU 2015/863)

NOTE: The scope (range, description, price, specifications, dimensions, etc.) of the product featured in this section is subject to change without notice. Refer to c3controls.com for product updates.

REVISION 07.2026

TERMINAL BLOCK RELAYS

c3controls line of Terminal Block Relays were designed and manufactured to meet the needs of the machine builder. We promise durable products at a price that gives you an edge. Check out all the features of our Series TBR Terminal Block Relays below!

DELIVERING SUPERIOR PRODUCT QUALITY AND MANUFACTURING EXCELLENCE

✓ **Proven**	Our Terminal Block Relays are UL Recognized and CE marked, meeting global standards requirements.
✓ **Ultra Compact Size**	Only 6.2mm width for a Single-Pole Double-Throw Relay as well as Single-Pole Single-Throw Relay allowing you to control more devices and use less space.
✓ **Flexibility**	Pluggable relay attached on the socket can be replaced in case of malfunction, providing flexibility for repair or maintenance work.
✓ **Secure Installation**	Quick and simple snap-on installation on a 35mm DIN Rail.
✓ **Clear Visibility**	LED indication allows you to see the contact status of the relay, making it very helpful in troubleshooting.
✓ **Visible Certifications**	Our product certifications and electrical ratings are clearly marked on the side of the device for easy reference during installation.
✓ **Added Safety**	Terminals are IP20 rated, guarding against accidental contact with live parts. The pluggable relay is also IP67 rated making it reliable in extreme conditions.
✓ **36-Month Warranty***	Every product is backed by our 36-Month Warranty—giving you confidence in the quality, reliability, and performance of components designed for the most demanding applications.
✓ **Guaranteed Same-Day Shipping***	Product availability reduces inventory, and improves cash-flow—saving you money. With c3controls any order for standard catalog items received by 6:00pm ET is guaranteed to ship same-day.
✓ **Advantage Pricing**	Our approach to product development, manufacturing, and focus on servicing the OEM and Electrical Equipment Builder reduces cost. The result—the best value in the industry.

*See c3controls Terms & Conditions





Electromechanical Relay



Solid State Relay

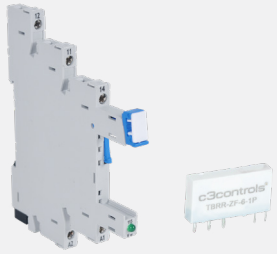
UNIQUE PRODUCT LINE FEATURES

SUPER BRIGHT LED



Highly visible LED on each unit gives indication of the relay's operating state.

PLUGGABLE RELAY



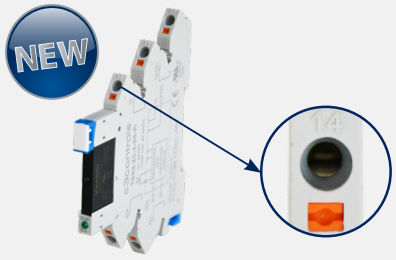
Relay can be replaced without removing field wiring, reducing maintenance time.

ADDED RELIABILITY & SAFETY



IP20 rated captive screw terminals provide reliability, ease of wiring, and much needed protection against accidental contact with live parts.

PUSH IN TERMINALS



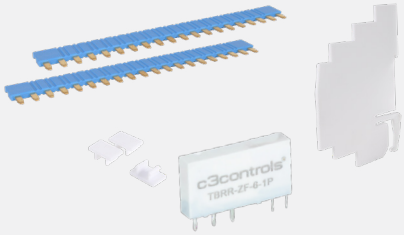
Push-In Connection significantly reduces installation time. Ideal for high-volume panel manufacturing.

QUICK IDENTIFICATION



Marking system allows for fast and easy circuit identification. A marking strip is pre-supplied on each unit.

ACCESSORIES



Apart from the replacement relay, marker and separator, Series TBR consists of a jumper accessory to eliminate labor intensive wiring work.

FIND IT FAST

Terminal Block Relays

- Certifications
- Specifications
- Dimension Drawings
- Installation Instructions
- Easy To Buy

c3controls.com

IT'S EASY TO BUILD YOUR OWN TERMINAL BLOCK RELAY

Simply pick the code number from each of the sections below and combine them to build your part number.

Electromechanical Terminal Block Relays

TBR – ____ – 6 – 1P – ____

I II III IV V

Example: To build one of our most popular Electromechanical Terminal Block Relays, the part number would be **TBR + II + 6 + 1P + V** or **TBR-MC-6-1P-SC**



I. PRODUCT TYPE

CODE	DESCRIPTION
TBR	Terminal Block Relay

II. COIL VOLTAGE

CODE	DESCRIPTION	LIST
MB	12V AC/DC	$21.10
MC	24V AC/DC	$21.10
MD	110-125V AC/DC	$21.10
MF	220-240V AC/DC	$25.30

III. RATED CURRENT

CODE	DESCRIPTION
6	6 Amp

IV. CONTACT TYPE

CODE	DESCRIPTION
1P	Single Pole Double Throw

V. CONNECTION TYPE

CODE	DESCRIPTION	LIST
SC	Screw Terminal	—
PI	Push-In Terminal	$ 1.20

DISCOUNT SCHEDULE E

TERMINAL BLOCK RELAY ASSEMBLIES*

TERMINAL BLOCK RELAY ASSEMBLY PART NUMBER	SOCKET PART NUMBER	RELAY PART NUMBER
TBR-MB-6-1P-SC	TBRS-MC-6-EM-SC	TBRR-ZB-6-1P
TBR-MC-6-1P-SC	TBRS-MC-6-EM-SC	TBRR-ZC-6-1P
TBR-MD-6-1P-SC	TBRS-MD-6-EM-SC	TBRR-ZF-6-1P
TBR-MF-6-1P-SC	TBRS-MF-6-EM-SC	TBRR-ZF-6-1P
TBR-MB-6-1P-PI	TBRS-MC-6-EM-PI	TBRR-ZB-6-1P
TBR-MC-6-1P-PI	TBRS-MC-6-EM-PI	TBRR-ZC-6-1P
TBR-MD-6-1P-PI	TBRS-MD-6-EM-PI	TBRR-ZF-6-1P
TBR-MF-6-1P-PI	TBRS-MF-6-EM-PI	TBRR-ZF-6-1P

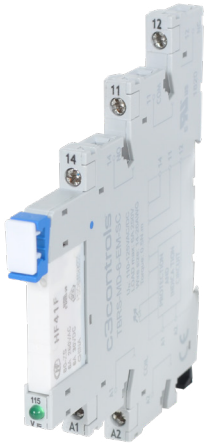
*Note: Each Terminal Block Relay is an assembly of a socket and a pluggable relay. This table provides the part numbers for the socket and relay for each assembly.

Some of Our Popular Configurations:

TERMINAL BLOCK RELAYS

CATALOG NUMBER	DESCRIPTION	LIST
TBR-MC-6-1P-SC	Terminal Block Relay, Electromechanical, 6A, SPDT, Screw Terminal, 24V AC/DC	$21.10
TBR-MD-6-1P-SC	Terminal Block Relay, Electromechanical, 6A, SPDT, Screw Terminal, 110-125V AC/DC	$21.10
TBR-MF-6-1P-SC	Terminal Block Relay, Electromechanical, 6A, SPDT, Screw Terminal, 220-240V AC/DC	$25.30
TBR-MC-6-1P-PI	Terminal Block Relay, Electromechanical, 6A, SPDT, Push-In Terminal, 24V AC/DC	$22.30
TBR-MD-6-1P-PI	Terminal Block Relay, Electromechanical, 6A, SPDT, Push-In Terminal, 110-125V AC/DC	$22.30
TBR-MF-6-1P-PI	Terminal Block Relay, Electromechanical, 6A, SPDT, Push-In Terminal, 220-240V AC/DC	$26.50

Electromechanical Terminal Block Relays



c3controls Series TBR Terminal Block Relays are designed to meet your control and automation system requirements for a reliable, safe connection as well as isolation between electronic controls and process I/O. Due to their unmatched size, flexibility and various other features, terminal block relays can help you save money and a premium panel space. cRUus and CE Markings make them suitable for use anywhere in the world. Just look and see what the Series TBR has to offer.

Product features include:

- Compact size – Just 6.2mm wide for a Single-Pole, Double-Throw relay rated for a 6A load.
- Standard range of AC and DC operating coils for control circuit applications: 12V, 24V, 110-125V, 220-240V
- LED indication of energized relay for fast and easy troubleshooting.
- Coil surge protection for securing internal circuitry against sudden shut-downs.
- Built-in leakage current suppression circuit to avoid nuisance coil turn-on.
- The marker base functions as a lever for installing or replacing the relay in case of troubleshooting or malfunction.
- Quick and simple installation on a 35mm DIN Rail.
- Push In terminal technology maintains consistent contact force even in high-vibration environments no periodic screw re-tightening required.
- IP20 rated captive screw terminals provide reliability, ease of wiring, and much needed protection against accidental contact with live parts.
- Highly visible markings for ease of installation, troubleshooting, and maintenance.
- Pre-supplied marking strip on each unit for easy circuit identification.
- Environmentally friendly non-metallic materials are asbestos, halogen, and cadmium free.

IT'S EASY TO BUILD YOUR OWN TERMINAL BLOCK RELAY

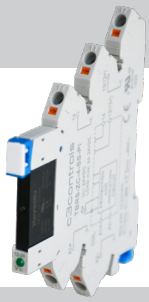
Simply pick the code number from each of the sections below and combine them to build your part number.

Solid State Terminal Block Relays

TBR – ____ – ____ – 1X – ____

I II III IV V

NEW



Example: To build one of our most popular Solid State Terminal Block Relays, the part number would be TBR + II + III + 1X + V or TBR-ZB-4-1X-SC

I. PRODUCT TYPE

CODE	DESCRIPTION
TBR	Terminal Block Relay

II. CONTROL VOLTAGE

CODE	DESCRIPTION
ZB	12V DC
ZC	24V DC

III. LOAD CARRYING CAPACITY

CODE	LOAD CURRENT	LOAD VOLTAGE	LIST
4	4A	24V DC	$46.10
2	2A	240V AC	$40.10

IV. CONTACT TYPE

CODE	DESCRIPTION
1X	Single Pole Single Throw (NO)

V. CONNECTION TYPE

CODE	DESCRIPTION	LIST
SC	Screw Terminal	—
PI	Push-In Terminal	$ 2.30

DISCOUNT SCHEDULE E

TERMINAL BLOCK RELAY ASSEMBLIES*

TERMINAL BLOCK RELAY ASSEMBLY PART NUMBER	SOCKET PART NUMBER	RELAY PART NUMBER
TBR-ZB-4-1X-SC	TBRS-ZB-4-SS-SC	TBRR-ZB-4-1X
TBR-ZB-2-1X-SC	TBRS-ZB-2-SS-SC	TBRR-ZB-2-1X
TBR-ZB-4-1X-PI	TBRS-ZB-4-SS-PI	TBRR-ZB-4-1X
TBR-ZB-2-1X-PI	TBRS-ZB-2-SS-PI	TBRR-ZB-2-1X
TBR-ZC-4-1X-SC	TBRS-ZC-4-SS-SC	TBRR-ZC-4-1X
TBR-ZC-2-1X-SC	TBRS-ZC-2-SS-SC	TBRR-ZC-2-1X
TBR-ZC-4-1X-PI	TBRS-ZC-4-SS-PI	TBRR-ZC-4-1X
TBR-ZC-2-1X-PI	TBRS-ZC-2-SS-PI	TBRR-ZC-2-1X

*Note: Each Terminal Block Relay is an assembly of a socket and a pluggable relay. This table provides the part numbers for the socket and relay for each assembly.

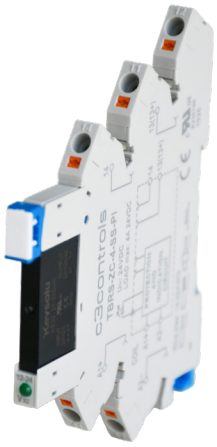
Some of Our Popular Configurations:

TERMINAL BLOCK RELAYS

CATALOG NUMBER	DESCRIPTION	LIST
TBR-ZC-4-1X-SC	Terminal Block Relay, Solid State, Load Current 4A, Load Voltage 24VDC, SPST NO, Control Voltage 24VDC, Screw Terminal	$46.10
TBR-ZC-2-1X-SC	Terminal Block Relay, Solid State, Load Current 2A, Load Voltage 240VAC, SPST NO, Control Voltage 24VDC, Screw Terminal	$40.10
TBR-ZC-4-1X-PI	Terminal Block Relay, Solid State, Load Current 4A, Load Voltage 24VDC, SPST NO, Control Voltage 24VDC, Push-In Terminal	$48.40
TBR-ZC-2-1X-PI	Terminal Block Relay, Solid State, Load Current 2A, Load Voltage 240VAC, SPST NO, Control Voltage 24VDC, Push-In Terminal	$42.40

Solid State Terminal Block Relays

c3controls Series TBR Solid State Terminal Block Relays are designed to provide dependable, maintenance-free switching for industrial control and automation systems. Their compact design and solid-state technology make them an ideal solution for applications requiring reliable performance, long service life, and efficient panel utilization. Discover what the Series TBR Solid State family has to offer.



Product features include:

- No mechanical contacts means no contact wear, resulting in a longer electrical life.
- Microsecond-level switching speeds enable fast and repeatable operation.
- 2500 VAC input/output photoelectric isolation improves equipment protection.
- Visual confirmation of output status.
- Ultra-thin footprint helps maximize panel space.
- Comes with push-in terminals to eliminate screw tightening.
- Integrated marker holder accepts standard identification markers for fast, clear circuit labeling and simplified maintenance.
- Switches AC loads at the zero-voltage crossing to minimize electrical noise, reduce inrush current, and extend load life.

IT'S EASY TO BUILD YOUR OWN REPLACEMENT RELAY

Simply pick the code number from each of the sections below and combine them to build your part number.

Electromechanical Terminal Block Replacement Relays

TBRR – ____ – 6 – 1P

I II III IV

Example: To build one of our most popular Replacement Relays, the part number would be **TBRR + II + 6 + 1P** or **TBRR-ZF-6-1P**



I. PRODUCT TYPE

CODE	DESCRIPTION
TBRR	Terminal Block Replacement Relay

III. RATED CURRENT

CODE	DESCRIPTION
6	6 Amp

II. COIL VOLTAGE

CODE	DESCRIPTION	LIST
ZB	12V	$10.80
ZC	24V	$10.35
ZF	110 - 240V	$13.15

IV. CONTACT TYPE

CODE	DESCRIPTION
1P	Single Pole Double Throw

DISCOUNT SCHEDULE E

IT'S EASY TO BUILD YOUR OWN REPLACEMENT RELAY

Simply pick the code number from each of the sections below and combine them to build your part number.

Solid State Terminal Block Replacement Relays

NEW

TBRR – ____ – ____ – 1X

I II III IV

Example: To build one of our most popular Replacement Relays, the part number would be **TBRR + II + III + IV** or **TBRR-ZB-4-1X**



I. PRODUCT TYPE

CODE	DESCRIPTION
TBRR	Terminal Block Replacement Relay

III. LOAD CARRYING CAPACITY

CODE	LOAD CURRENT	LOAD VOLTAGE	LIST
4	4A	24V DC	$35.45
2	2A	240V AC	$26.40

II. CONTROL VOLTAGE

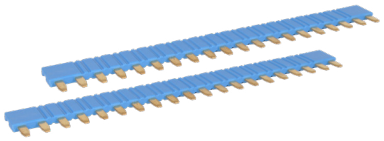
CODE	DESCRIPTION
ZB	12V DC
ZC	24V DC

IV. CONTACT TYPE

CODE	DESCRIPTION
1X	Single Pole Single Throw (NO)

DISCOUNT SCHEDULE E

20 WAY JUMPER LINK



Wire up to 20 relays in no time! The jumper accessory plugs directly into the socket terminals, eliminating labor intensive wiring tasks.

CODE	DESCRIPTION	PCS./PKG.	LIST/PC.
TBR-J-20	20 Way Jumper Link	4	$ 8.90

REPLACEMENT MARKERS

Replacement markers are available if the pre-supplied marker is misplaced or no longer useful.

CODE	DESCRIPTION	LIST
TBR-M6	Replacement Markers (plate of 64 markers)	$ 5.75

SPACER

Spacers offer a quick and easy way to differentiate between circuits in a control panel. Spacer dimensions match exactly with the geometry of a complete relay and socket assembly.

CODE	DESCRIPTION	PCS./PKG.	LIST/PC.
TBR-S	2mm Wide Spacer	5	$ 2.20

DISCOUNT SCHEDULE E

SPECIFICATIONS:

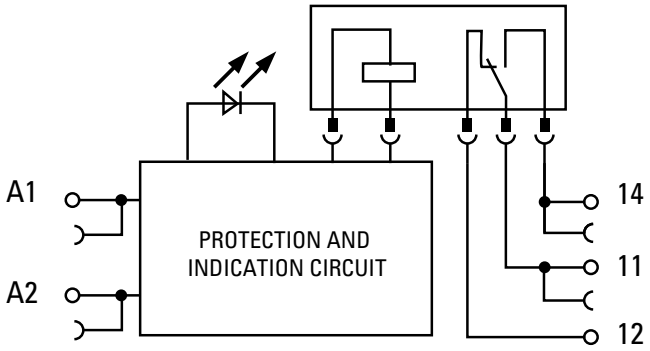
ELECTROMECHANICAL TERMINAL BLOCK RELAY SPECIFICATIONS					
INPUT DATA					
	UNITS				
Rated Voltage	VAC/VDC	12	24	110~125	220~240
Typical Response Time	ms	≤8			
Typical Release Time	ms	≤4			
Pickup Voltage	%	90			
Dropout Voltage	%	10			
Maximum Allowable Voltage	VAC/VDC	14	28	132	264
Coil Consumption	W	0.17		0.21	
CONTACT RATINGS					
Contact Configuration		SPDT			
Contact Material		AgNi			
Rated Load		6A, 250VAC / 30VDC			
Maximum Switching Voltage	VAC/VDC	400/125			
Minimum Switching Voltage	V	5			
Minimum Switching Current	mA	100			
GENERAL					
Mechanical Service Life		1×10^7 cycles			
ELECTRICAL LIFE					
NO Operations		3×10^4 cycles			
NC Operations		1×10^4 cycles			
DIELECTRIC STRENGTH					
Between Contact and Coil	VAC	4,000 for 1 minute			
Between Pole	VAC	1,000 for 1 minute			
Vibration Resistance		10 to 55Hz, double amplitude 1.0 mm			
SHOCK RESISTANCE					
Functional	m/s^2	49			
Destructive	m/s^2	980			
Ambient Temperature Range	°C/°F	-40 to 55 / -40 to 131			
Storage Temperature	°C/°F	-40 to 85 / -40 to 185			
Operating Humidity	%	5 to 85 (no condensation)			
Altitude	m	0 - 2,000			
Pollution Degree		2			
CONDUCTOR SIZE					
Screw Terminal	AWG	14-26			
Push-In Terminal	AWG	14-22			
Strip Length	inch	0.3			
Torque (Screw Terminal)	Nm	0.5			
Pull Out Force (Push-In Terminal)	N	40			
Degree of Protection		IP20			
ROHS COMPLIANCE		For RoHS compliance documentation by product, refer to c3controls.com			

SPECIFICATIONS:

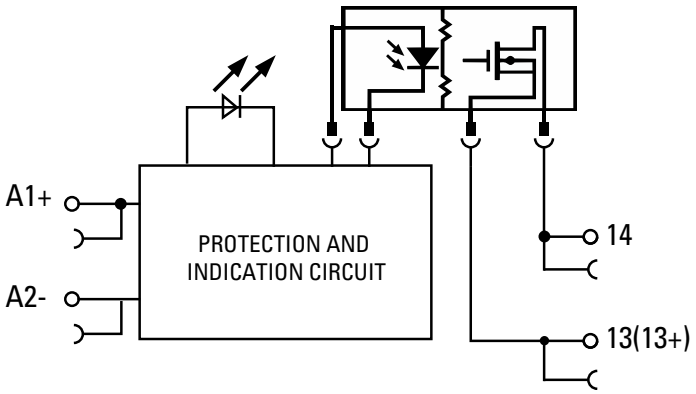
SOLID STATE TERMINAL BLOCK RELAY SPECIFICATIONS			
INPUT SPECIFICATION	**UNITS**		
	VDC	**12**	**24**
Control Voltage Range	VDC	9.6~14.4	19.2~28.8
Must Turn-On Voltage	VDC	9.6	19.2
Must Turn-Off Voltage	VDC	3	9
Maximum Input Current	mA	25	
Maximum Reverse Protection Voltage	VDC	-14.4	-28.8
OUTPUT SPECIFICATION			
		240 VAC	**24 VDC**
Load Voltage Range		(48~280) VAC	(3~28.8) VDC
Maximum Transient Voltage		600 Vpk	33 VDC
Load Current Range		(0.1~2) A	(0.02~4) A
Maximum Surge Current (10ms)		80 A	48 Apk
Maximum Off-State Leakage Current		1.5 mA	100 µA
Maximum On-State Voltage Drop		1.2 Vr.m.s.	0.35 VDC
Maximum Turn-On Time		1/2 cycle + 1 ms	50 µA
Maximum Turn-Off Time		1/2 cycle + 1 ms	300 µs
Minimum Off-State dv/dt		100 V/µs	
Max. IMax. I2t for fusing (10ms, A2s)		32	
GENERAL SPECIFICATION			
Contact Configuration		SPST NO	
Dielectric Strength (Input/Output)	VAC	2500 for 1min	
Insulation Resistance	MΩ	1000 at (500VDC)	
Maximum Capacitance (Input/Output)	pF	5	
Vibration Resistance		10~55Hz, 1.5mm, DA	
Operating Temperature	°C	-30~80	
Storage Temperature	°C	-30~100	
Ambient Humidity	% RH	45~85	
Unit Weight	g	29	
Shock Resistance		Acceleration 980m/s2, continuous surge 6ms	
Altitude	m	0-2000	
Pollution Degree		2	
CONDUCTOR SIZE			
Screw Terminal	AWG	14-26	
Push-In Terminal	AWG	14-22	
Strip Length	mm	8	
Torque (Screw Terminal)	Nm	0.5	
Degree of Protection		IP20	
ROHS COMPLIANCE		For RoHS compliance documentation by product, refer to c3controls.com	

WIRING DIAGRAMS

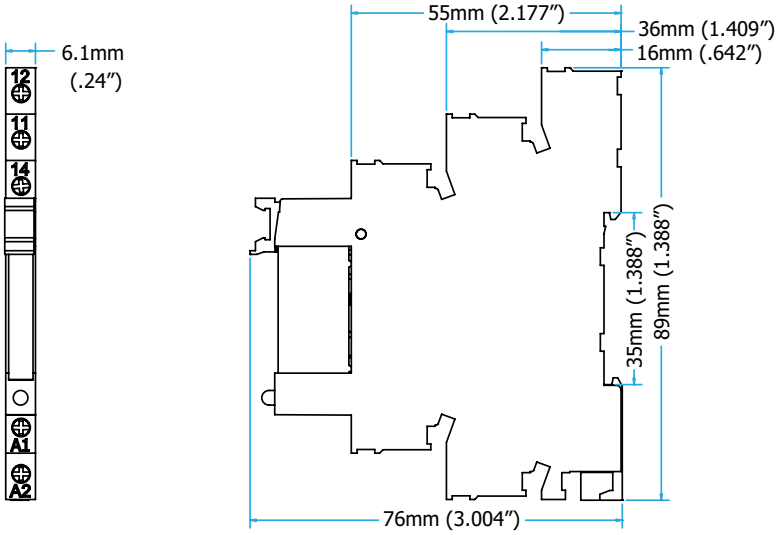
Electromechanical Terminal Block Relay



Solid State Terminal Block Relay



SCREW TERMINAL BLOCK RELAY



PUSH-IN TERMINAL BLOCK RELAY

