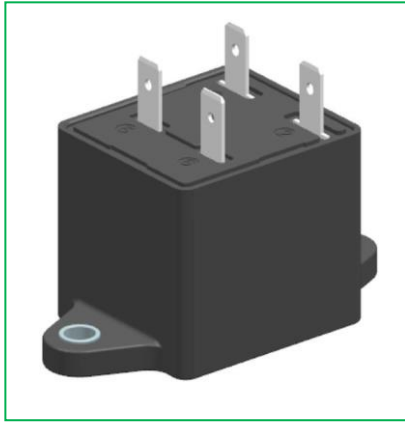


C0N 20 DC Contactor Product Manual

● Product Appearance and Features



Features

- Magnetic blowout arc-extinguishing design with breaking capability at 1500 V.
- Distinctive contact structure for enhanced surge and current withstand capability.
- Dielectric withstand voltage of at least 4000 V between high- and low-voltage circuits.
- Non-polarized load terminals.
- Environmentally compliant product (RoHS compliant).

● Product Specifications

Main Contact Specifications

Contact construction	Bridge-type, normally open
Contact material	Silver-copper alloy
Contact resistance	$\leq 4.5 \text{ m}\Omega$ (@ 20 A)
Contact voltage drop	/
Max. switching voltage	1500 Vdc
Making endurance	20 A / 1500 V, 15,000 operations
Switching endurance	15 A / 1500 Vdc, 10,000 operations
	20 A / 1000 Vdc, 10,000 operations
	20 A / 750 Vdc, 20,000 operations
	/
Breaking endurance	200 A / 1000 V, 1 operation
Short-circuit current	/
Rated current	20 A
Minimum load current	6 V / 1 A
Mechanical endurance	200,000 cycles (0.5 s ON / 0.5 s OFF)

Coil Specifications		
Rated voltage (Vdc)	12	24
Operate voltage (Vdc)	≤ 9	≤ 18
Release voltage (Vdc)	≥ 1	≥ 2
Coil resistance (Ω)	48	192
Pick-up current (A)*	0.25	0.125
Start-up time (ms)	/	/
Rated current (A)	0.25	0.125
Pick-up power (W)*	3	3
Steady-state power (W)*	3	3

Note: * At rated voltage.

Performance Specifications		
Insulation resistance	Coil to contacts	$\geq 1000 \text{ M}\Omega$
	Same-pole contacts	/
	Main to aux. contacts	/
Dielectric withstand voltage	Coil to contacts	4000 Vac, 1 minute
	Same-pole contacts	/
	Main to aux. contacts	/
Impulse withstand voltage		Coil to contacts: 10 kV ($1.2 \times 50 \mu\text{s}$)
Operate time		$\leq 30 \text{ ms}$
Release time		$\leq 10 \text{ ms}$
Contact bounce time at operation		$\leq 5 \text{ ms}$
Vibration	Sinusoidal	10–500 Hz; double amplitude 1.5 mm; acceleration 49 m/s ²
Shock resistance	Functional	196 m/s ²
	Destructive	490 m/s ²
Operating ambient temperature		–40 to +85 °C (no icing or condensation)
Operating ambient humidity		5–85% RH (non-condensing)
Weight	12 V	Approx. 150 g
	24 V	Approx. 150 g

Note: The above data are initial values at room temperature. Special orders are available for other requirements.

● Product Certifications

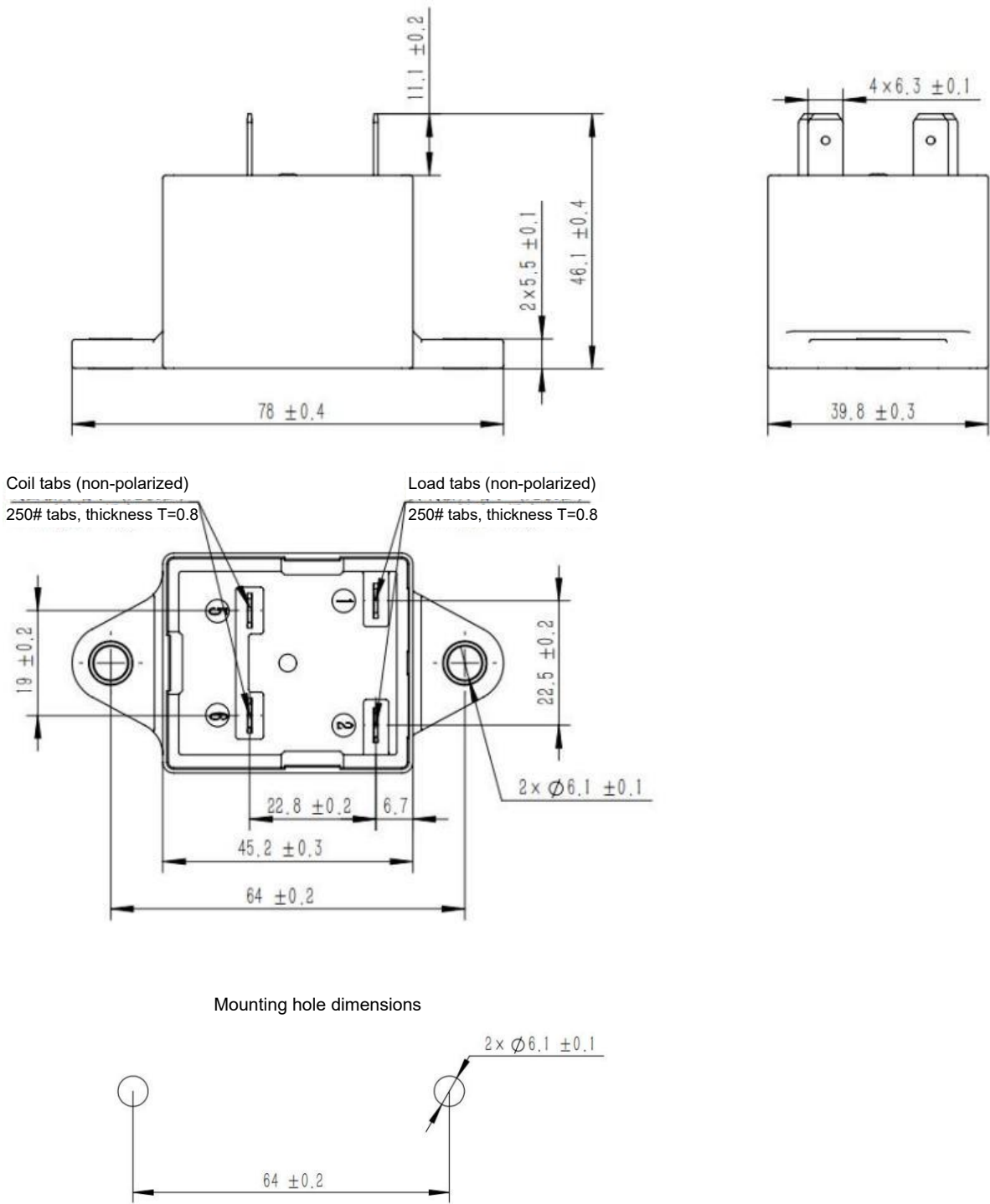
Product Certifications	
UL	/
TUV	/
CCC	/

● Ordering Code

UNE C0N 20 / 1500 -BD -D 12 -Q -XXX
 [1] [2] [3] [4] [5] [6] [7] [8]

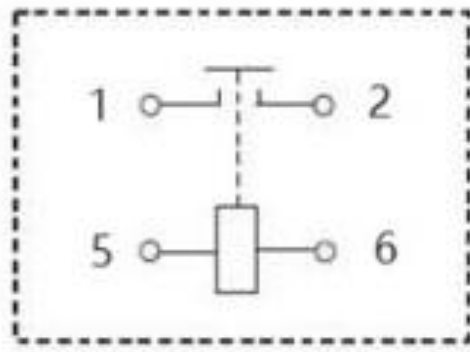
No.	Code element	Description and examples
1	Manufacturer code	UNE: UNITONE contactors
2	Product series code	<u>C0N</u> : Product series code (C = ceramic type)
3	Load current	<u>40</u> : Contact load current 40 A dc <u>30</u> : Contact load current 40 A dc <u>20</u> : Contact load current 20 A dc
4	Load voltage	<u>1500</u> : 1,500 Vdc
5	Main contact arrangement	<u>-B</u> <u>D</u> : Non-polarized, one normally open circuit
6	Coil drive type and voltage	<u>-D</u> <u>12</u> : Coil drive voltage 12 Vdc <u>24</u> : Coil drive voltage 24 Vdc
7	Main contact termination	<u>-Q</u> : QC quick-connect tab terminals <u>-5</u> : Internally threaded terminals
8	Customer-specific feature code	<u>-XXX</u> : Customer-specific feature code

● Outline Dimensions, Mounting and Wiring Diagrams



Note: Unspecified outline dimension tolerances are as follows.

Unspecified Outline Dimension Tolerances	
Outline dimension (mm)	Tolerance (mm)
≤ 10	± 0.3
10–50	± 0.5
≥ 50	± 0.8

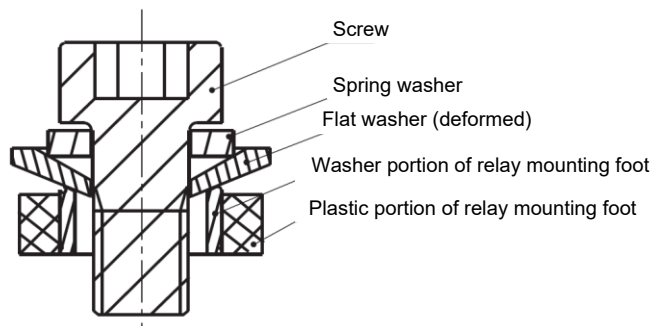


Notes:

1. Terminals 1 and 2 are the load terminals.
The load terminals are non-polarized.
2. Terminals 5 and 6 are the coil drive terminals.
The coil drive terminals are non-polarized.

● Precautions for Use

1. Select a suitable product according to the application, performance requirements and actual operating conditions of the end product. For conditions not expressly specified, please contact us for the necessary technical support.
2. The contactor manufacturer cannot evaluate all performance requirements for every application or all specific design details of the end product. The customer therefore bears sole responsibility for final product selection.
3. Every effort has been made to ensure the accuracy of this information; however, errors may occur. Products, specifications and parameters may change due to product improvements. For the parameters and performance of a specific product, refer to the product specifications and samples provided by UNITONE. This information is for product selection reference only.
4. Operate the contactor within the rated operating range stated in the product specifications. Operation outside this range may cause degraded performance, abnormal operation or failure. The company accepts no liability for degraded performance, abnormal operation or failure resulting from use outside the rated operating range.
5. All contact ratings are specified for resistive loads. For inductive loads (L loads) with $L/R \geq 1$ ms, provide surge suppression in parallel with the load. Otherwise, electrical endurance may be reduced or interruption failure may occur.
6. To suppress coil back EMF, install a nonlinear resistor (a varistor is recommended; energy handling capability: at least 1 J; voltage rating: 1.5–2 times the rated voltage). A diode will substantially increase the contactor release time and consequently reduce breaking performance. Pay particular attention to this effect.
7. This contactor contains magnetic components for magnetic blowout arc extinction. Avoid installation in strong magnetic fields (near transformers or magnets) or close to heat-generating objects.
8. Use washers when mounting the contactor to prevent loosening. Use M5 mounting screws tightened to 3–4 N·m. The permissible insertion and withdrawal forces are: (1) load terminals: 49 N; (2) coil terminals: 49 N. Exceeding these limits may cause damage.
9. When using M5 screws, ensure sufficient washer thickness and strength; otherwise, the washers may deform and crack the housing.



10. Keep grease and other foreign matter off the terminal tabs. Use connecting conductors with a cross-sectional area of at least 10 mm²; otherwise, abnormal heating may occur at the terminals.
11. Dropping the contactor may cause structural failure or deterioration of its internal magnetic components, affecting product function and performance. As a general rule, a contactor that has been dropped shall not be used again.
12. Keep silicone-containing substances (such as silicone rubber, silicone oil, silicone-based coatings and silicone fillers) away from the contactor. They may release silicon-containing volatile gases that deposit on the contacts and cause poor electrical contact.

Note: Products, specifications and parameters may change as a result of product improvements. UNITONE reserves the right to revise this product manual. Customers should confirm its contents before placing their first order and request updated product information where necessary.