

DIRECT CURRENT SINGLE-POLE CONTACTOR

SINGLE ACTUATION

CONTINUOUS OPERATION (+125°C) 700A / 28V

REFERENCE: 610CC01A00

GENERAL CHARACTERISTICS

DEFINITION - OPERATION

Electromechanical device intended to close or open a direct-current electrical circuit. The contactor's mobile power contact is in the "Rest" position (circuit open) when the excitation circuit is open.

A set of auxiliary signaling contacts (electrically separate snap-action contacts, two set normally opened and two normally closed) that operate at the same time as the power contact, mimic the power contact's electrical status.

The component controlling the movement of the contacts is a solenoid with a moveable core controlled using direct current.

The solenoid winding is linked to an energy saver (resistor + normally-closed contact : economizer).

A suppressor circuit is also incorporated for protection against voltage rise which occurs when the coil is de-energized.

The contactor remains closed if electrically held (voltage is maintained on the coil).

PRESENTATION

The body of the contactor is cylindrical in shape. It presents as a robust aluminum housing with a soleplate.

The terminals for connecting to the power circuit are towards the front. The quick-connection terminal for the auxiliary circuits (contacts for signaling and control winding) is attached at the other end, to the upper side of the device's body.

The entire device is sealed against sprayed or flowing liquids and protected against corrosive agents (saline atmosphere, humidity, on-board liquids, etc.).

MOUNTING

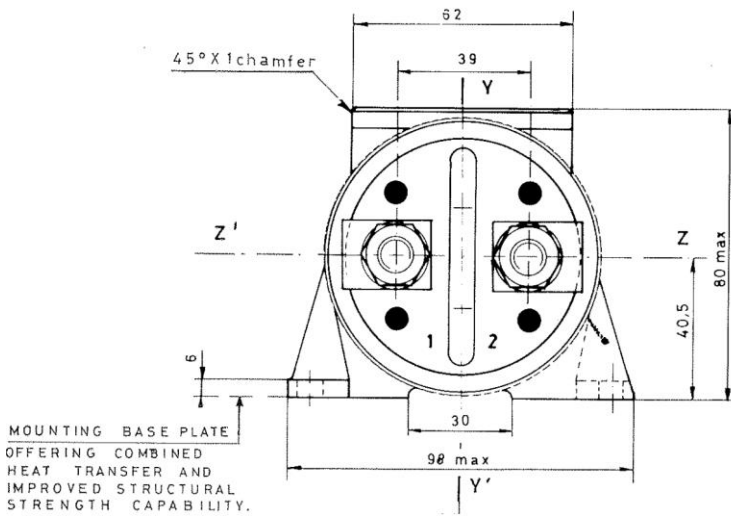
Using 3 screws $\varnothing 6$

Note: You are recommended to use hexagonal socket cylindrical head fasteners (Standard NFL 22-224). Installation wrench: Allen width across flats 5. Type-B wave washers (lock washers). $\varnothing 6$ ref. Nomel 52.06.01.70 (CuBe2).

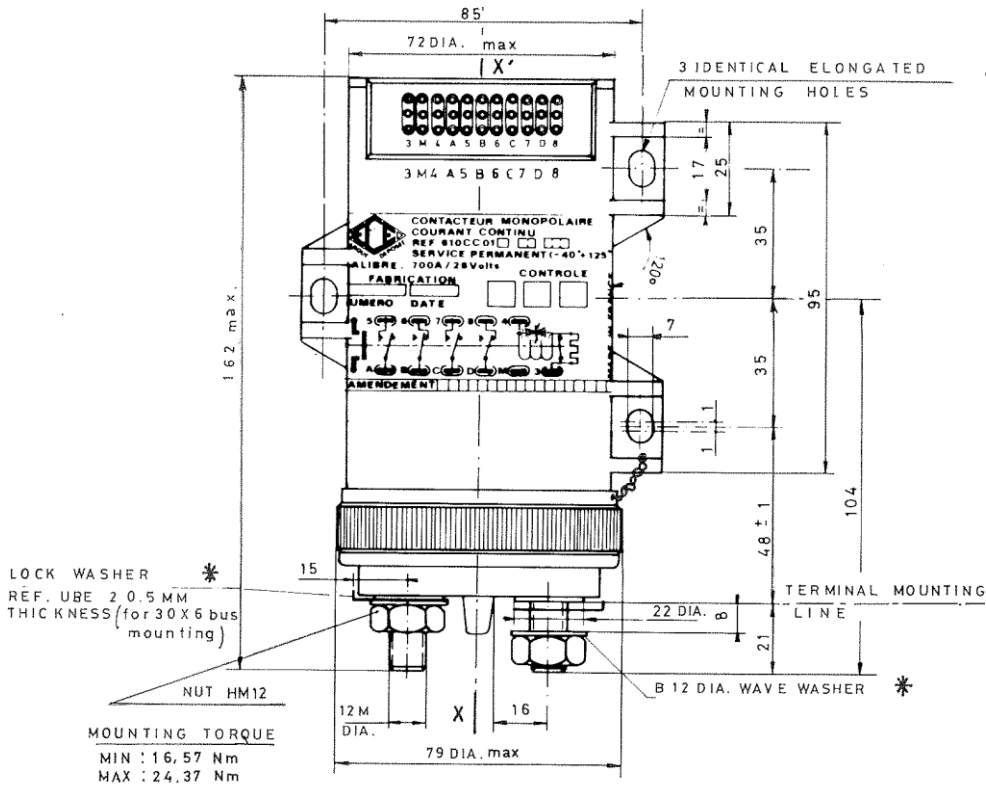
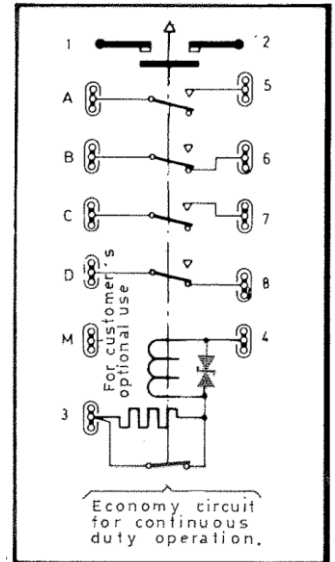
Note 2: The contactor's thermal exchange and mechanical strength are heavily dependent on the bearing surface on its mounting plane.

Mounting pitch: Minimum 85mm

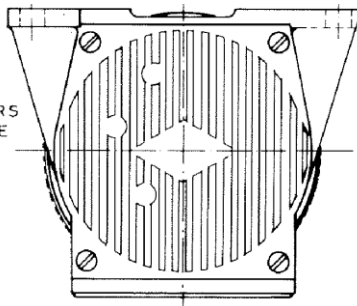
DIMENSION FIGURES



CIRCUIT DIAGRAM



NOTE: WAVE OR TAB LOCK WASHERS SHOULD BE FITTED DEPENDING UPON WHETHER CABLE TERMINALS OR BUS BARS (30 MM MAX WIDTH) ARE UTILISED.



ELECTRICAL CONNECTIONS

1. Power circuit

- 2 x 12mm threaded terminals (numbers 1 and 2)
- Bearing surface (lugs or bars) approximately 250mm²
- Suitable lugs: Lugs with a tongue width not exceeding 31mm

Example:

- a) Lugs compliant with Standard NFC 20-130 (for cables with a cross-section between 10 and 300mm²).
- b) Solistrands lugs (AMP) insulated using heat shrinkable tubing RMF 100 (Raychem - withstands 250°C) may also be used.

2. Auxiliary circuits

- Quick connection to the junction box with 3 shunted terminals per output (numbered A,5, B,6, C,7, D,8,3,4) + terminal M "available".
 - Standard male contacts for crimping. Gauge 20: Standards:
 - NFL 53-105 A
 - NAS 1749
 - Suitable cables: C,21 - 0.38 - 0.60 and 0.93mm² (exterior (over insulation) ø 0.95 - 2.1 maximum).

Tools

- Crimping tool: Standard NFL 54-126
- Insertion / extraction tool: Standard NFL 54-131.

ELECTRICAL CHARACTERISTICS

OPERATING CHARACTERISTICS (control circuit)

NOMINAL OPERATING VOLTAGE	PICK-UP VOLTAGE	DROP-OUT VOLTAGE	SAFETY HOLD VOLTAGE	RESPONSE TIME	
				ON CLOSING	ON OPENING
28Vdc	$18V \leq U \leq 32V$	$4V < U < 11V$	$U \geq 12V$	< 45ms.	< 25ms.
Note: All characteristics are given for operation at ambient temperature within -40°C and +125°C and at a maximum altitude of 4500 meters					

- Winding: Consumption: (at 20°C and 28 Vdc).
Pick-up : 2.15 Amperes (Duration: 15 ms max).
Hold : 0.40 Amperes (after thermal stabilization of the winding)
- Mechanical endurance: 150,000 cycles
- Electrical endurance: 50,000 cycles (Make Carry Break at 700A)
- Insulation: $R \geq 100$ megohms at 500Vdc.
- Dielectric strength:
 - 1250 VRMS / 50Hz efficiency
 - between contacts
 - between contacts and ground
 - 500 Vdc between coil and ground

POWER CONTACT

- Range of nominal current: 700 amperes continuous duty
- Nominal network voltage: 28Vdc
- Permissible short-time current limitation: 1800A - Duration: 30s
- Making and breaking current capacity : 6 times rated current, 10 times (Make, Carry : 100ms, Break with rest time of 3 minutes between cycles)
- Bounce of main contacts at closing: < 2 milliseconds
- Voltage drops: ≤ 120 millivolts at rated load

AUXILIARY CONTACTS

- Number of contacts: 4 (2 NO+ 2 NC), electrically separated.
- Form and Type: Single break, snap-acting
- Nominal network voltage: 28Vdc
- Nominal rated current: 5A, resistive
- Overload capacity : 4 times rated current for 0.5 seconds
- Inductive / Lamp load : 2,5A, L/R 5ms
- Voltage drops: ≤ 100 mV
- Bounce time: < 1 milliseconds

ENVIRONMENTAL CHARACTERISTICS

OPERATING TEMPERATURE RANGE

- From -40°C to +125°C (use and storage)
- Note: In humid heat (RH = 96%) the contactors remain functional only for temperatures up to 70°C.

MAXIMUM ALTITUDE

- Z = 4500 meters maximum

RANDOM VIBRATIONS

- 10 Hz - 75 Hz – Density: 0.003 - 0.15 g²/ Hz (6dB/Oct)
- 75 Hz - 250 Hz – Constant density of 0.15 g² / Hz
- 250 Hz - 2000 Hz – Density: 0.15 - 0.1875 g²/ Hz (3dB/Oct)

REPETITIVE SHOCKS

- Form: half-sine
- Amplitude: 25g
- Duration: 10 ms
- Rated: 1 to 3 per second

SHOCKS

- Half-sine : 11 milliseconds
- Structural strength: Minimum 100 g – any direction
- Operational impacts: (energized and un-energized)
 - YY' and ZZ' axes: 100g in both directions
 - XX' axes: 100g in the XX' direction
 - XX' axes: 40g in the X'X direction (un-energized)

SINUSOIDAL VIBRATION

- According to Standard AIR 7304 – ZH curve.
 - 5 Hz - 42 Hz: Amplitude 3mm
 - 42 Hz- 2000 Hz: 10g

REFERENCE STANDARDS

- Specifications: AMX-APX n° SP-C059-P and n° SP-C055-P (Specification for on-board EPC networks)

ACCEPTANCE CONDITIONS

- ATP01605

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