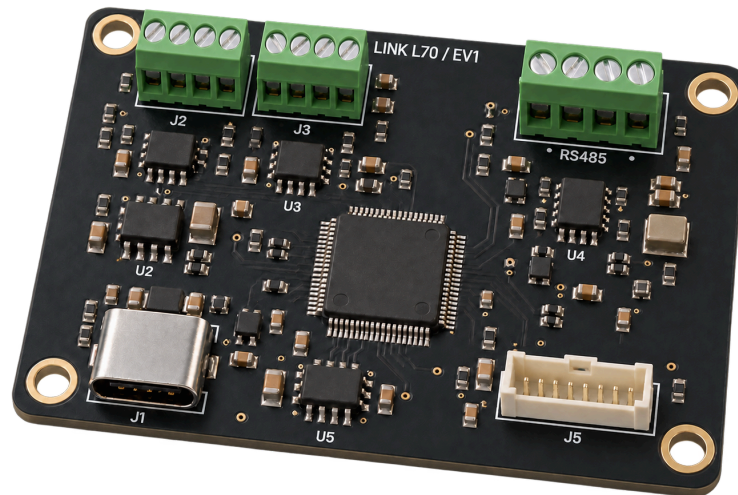


NODERIQ Link L70

Robot and sensor I/O



Give every physical bus a clear boundary.

A compact I/O bridge profile for observing CAN and serial devices, aligning service records and connecting existing controllers to mission-level software.

PCB outline

70 × 50 mm

Assembled height allocation

16 mm

Nominal bench input

5 V

Steady power allocation

4 W

Defined evaluation specification. Imagery illustrates the specified architecture; physical measurements, electrical release and completed system integration are not asserted.

Dimensions and mounting

NODERIQ / HARDWARE ENGINEERING

NODERIQ Link L70

EV1 · Mechanical and installation allocation · 23 October 2026

TOPVIEW / MILLIMETRES

ASSEMBLY / CLEARANCE

70 × 50 × 16 mm

Allocated assembly box, including PCB and both sides.



Installation reserve

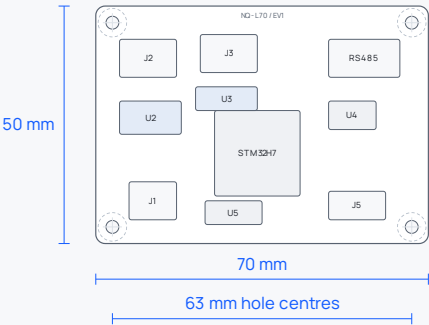
90 × 80 × 30 mm

Includes initial access and cable space. Validate the actual harness.

PCB 1.6 ± 0.15 mm

Outline ± 0.2 mm · Hole centres ± 0.15 mm

Placement envelopes do not define copper, pad stacks, pin multiplexing, isolation ratings or an electrical release.



4 × Ø 2.7 mm holes · 6 mm keepout diameter

Mount rectangle 63 × 43 mm · First centre (3.5, 3.5) mm

Origin: PCB lower-left. Connector reserves are defined in JSON.

Use stated dimensions. Preview is not a measuring tool. Separate 1:1 SVG and millimetre DXF supplied.

Evaluation specification · Physical acceptance requires recorded bench measurements. No manufacturing or certification claim.

NQ-L70 / M-01 / EV1

Mounting coordinates

(3.5, 3.5) · (66.5, 3.5) · (66.5, 46.5) · (3.5, 46.5)
mm

Lower-left PCB origin, top view. Four Ø 2.7 mm holes. Centre tolerance ± 0.15 mm.

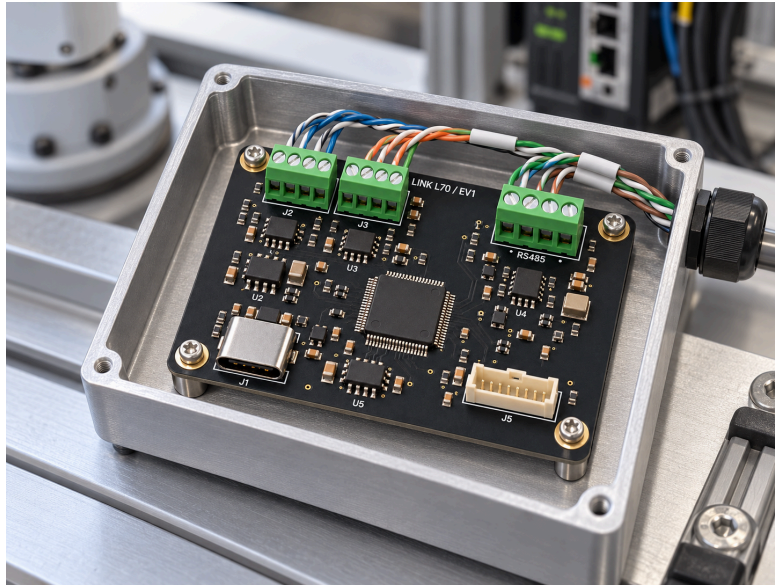
Installation reserve

90 × 80 × 30 mm

Allow access to mating parts, service screws and the actual cable bend. The final enclosure still needs a physical fit check.

The separate 1:1 SVG and millimetre DXF preserve the outline and mounting geometry. Placement rectangles are not land patterns, routed copper or a fabrication release.

Connectors and service access



Benchtop integration visualisation; use the electrical release and approved harness for wiring.

J1 / USB-C USB-C envelope	5 V bench input and USB service.
J2 / CAN A 4-position terminal envelope	A separately terminated bus with its own reference domain.
J3 / CAN B 4-position terminal envelope	Second CAN bus; do not join isolated grounds through a cable.
J4 / RS485 4-position terminal envelope	Differential sensor link; record termination and bus direction.
J5 / SERVICE 8-position locking header	3.3 V UART and time-reference reserve.

Define the complete test configuration

Bus receipt, source freshness and physical completion remain different records. L70 is not a safety controller or a direct motor-power stage.

Two independent CAN fixtures at 500 kbit/s arbitration and a 2 Mbit/s data-phase target; a separate RS-485 loopback fixture. Record transceiver, termination and firmware.

EV1 screening values

Input range	4.75–5.25 V
Regulated rail	3.135–3.465 V
Maximum steady input	4 W
Minimum workload duration	30 min
Bench ambient	20–25 °C
Maximum measured surface	60 °C

Bench numbers are EV1 engineering screening criteria, not achieved measurements, accuracy ratings or qualified operating limits. Record configuration, equipment and raw evidence for engineer review.

Independent CAN buses

Independent physical buses: 2
Minimum frames per bus: 10000
Arbitration rate / kbit/s: 500
Data-phase rate / kbit/s: 2000
Maximum error frames: 0

Serial loopback

Serial baud rate: 115200
Minimum transmitted messages: 10000
Payload length / bytes: 64
Maximum payload mismatches: 0

Keep actuator power disconnected during the bench fixture. The independent machine controller and interlock remain separate from observation and mission software.

Fit, power and sustained load

Use the matching EV1 configuration and retain a raw record for every performed check.

MECHANICAL-FIT

Mechanical fit

Use callipers and the 1:1 outline or millimetre DXF. Record width, height, thickness, maximum hole-centre error and total assembled height. Inspect every fastener and mating connector with the intended enclosure and harness.

Retain: Measured dimensions, mounting photograph and enclosure/harness revision.

RAIL-STABILITY

Power rails and backfeed

With the approved assembly and supply, measure input and regulated-rail minimum/maximum values during start-up and the named workload. Record steady input power and test disconnected host/peripheral supply paths for unintended backfeed.

Retain: Power trace, instrument range, probe points, supply limit and fitted configuration.

THERMAL-LOAD

Sustained thermal load

Run the exact workload for the specified interval in the stated bench ambient range. Record the hottest measured surface, configured compute mode, cooling arrangement, resets and thermal-throttle flags. These screening conditions do not define an outdoor operating rating.

Retain: Timestamped thermal trace, ambient measurement, surface location and workload version.

Exercise the named interfaces

Use the matching EV1 configuration and retain a raw record for every performed check.

CAN-LOOPBACK

Independent CAN buses

Use two independent CAN fixtures with deliberate termination and reference-domain wiring. Record arbitration and data-phase rates, sent/received frames and error frames separately for each bus. A repeated bus identifier cannot stand in for a second physical interface.

Retain: Two bus traces, transceiver configuration, termination and firmware revision.

SERIAL-LOOPBACK

Serial loopback

Use the released RS-485 harness, direction control and termination. Send the fixed-length loopback messages at the specified baud rate, compare every returned payload and record missing or mismatched messages.

Retain: Serial capture, baud, message size, sent/received counts and mismatches.

AUTHORITY-BOUNDARY

Physical authority boundary

Keep actuator power disconnected during the fixture and retain the machine's independent interlock. Confirm that reconnecting a data link cannot automatically resume physical action. Identify the separate controller and review record that govern any later machine test.

Retain: Fixture boundary record, controller/interlock identity and supervised sign-off path.

Keep the measurements inspectable

Isolation barriers, protection, pin multiplexing and EMC are design allocations requiring electrical release and bench evidence. No isolation voltage, safety integrity or supported third-party control protocol is claimed.

Measurement record and offline checker

Fill the matching blank JSON template with measured values, configuration, current instrument records and the identifier/SHA-256 hash of each raw record. Empty values remain missing; synthetic examples stay example-only.

```
node validate-evidence.mjs link-l70-specification.json measurements.json
```

Requires Node.js 20 or later. Exit 0 means the checklist is ready for engineer review; it does not certify hardware or authorise physical operation. Incomplete, out-of-criteria and example-only records return exit 2.

Relevant component sources

[STMicroelectronics / STM32H753VI](#)

L70 basis: 14 × 14 mm LQFP100 package and two CAN FD controllers; external transceivers and isolation still require design and validation.

[JST / GH locking wire-to-board family](#)

1.25 mm connector-pitch reference. Public connector envelopes are reserved integration space, not an approved land pattern.

Product record: neuraparse.com/products/noderiq/cards/link-l70/

Original PNGs, dimensional files, specification, blank record and checker accompany the evaluation pack. No proprietary firmware, routed board data or private NODERIQ endpoint is included.