TIGER Controller

Product Data

FEATURES

- **Various state-of-the-art communication options:** Open LONWORKS® bus
- **Unique features in open LONWORKS® networks:** NV-Booster® reduces the number of required NVs and thus also the number of required controllers; NV bindings can be restored after controller reset (and thus need not be redone after exchanging controllers); 46 (CARE) or approx. 64 (COACH) NVs supported for LONWORKS integration
- **Reduced engineering and start-up costs:** Huge variety of pre-tested and fully documented applications, application engineered with either COACH or CARE
- **Easy and flexible installation:** Screw terminals; mounting inside cabinet (DIN rail)
- **Hardware / software options:** With or without the COACH operator and service software; MMI (for buswide access to other controllers)

DESCRIPTION

The TIGER Controller is available in two basic versions:

- CLTG38L01 (without built-in MMI), and
- CLTG38L11 (with built-in MMI).

The CLTG38L01 and CLTG38L11 both come with accessory mounting clips (for DIN rail mounting).

NOTE: The CLTG38L01 is suitable for connection to the CLTG00MMIN01 External MMI (see EN0Z-0919GE51 for more information). Both the CLTG38L01 and the CLTG38L11 are suitable for connection to the CLMMI00N21 (see EN0Z-0912GE51 for more information).

The TIGER controller family also includes the CLTG38EXPN01 Expansion Board, which can be connected to and thus used to supplement a CLTG38L01 or CLTG38L11.

NOTE: The CLTG38EXPN01 comes with the following two accessories:
Mounting clips (for DIN rail mounting),
350-mm-long flat-strip connection cable.

The housing can be mounted inside a cabinet on a DIN-rail or in a cabinet front door. All changeable parts or switches are accessible without opening the housing.

GENERAL

The TIGER Controller has built-in communication capability, allowing it to be integrated into existent systems or into an open LONWORKS® network communicating with room/zone controllers or with 3rd-party products. It can also serve as a stand-alone controller. Typical areas of application include heating systems, district heating systems, and air conditioning plants for restaurants, shops, offices, and small branch government buildings.

The TIGER Controller supports standard LonMark™ Network Variables according to the LonMark Interoperability Guidelines V.3.0. It can serve 38 integrated I/Os and supports peer-to-peer communication; thus, in the case of larger-scale applications, several different controllers can be linked and accessed. The system firmware is stored in Flash EPROM (located in the controller's mother board), allowing easy upgrading of the operating system via download.

The TIGER Controller can be engineered with either of the following two application engineering tools: COACH or CARE. COACH permits the engineering of applications with a max. of approx. 64 LONMARK NVs. CARE permits the engineering of applications with a max. 46 LONMARK NVs.

CE

Common Features

The CLTG38L01, CLTG38L11, and CLTG38L01 all have the following features:

- eight analog inputs, four analog outputs, and 14 digital inputs all arranged in a single, low-voltage, double-decker terminal block located on the left front of the housing, and also
- twelve digital outputs (including three changeover relays and nine normally-open relays) arranged in three terminal blocks located at the rear of the housing.

CLTG38L01

NOTE: The CLTG38L01 is not equipped with an MMI, but can be connected to the CLTG00MMIN01 External MMI.

The CLTG38L01 features a reset button and a power ON LED, both located on the top right of the housing.

The CLTG38L01 can be connected to a maximum of one CLTG38EXPN01 Expansion Board. It can also be connected to the CLMMI00N21.

The CLTG38L01 has a built-in LONWORKS Module and is thus LONWORKS-capable.

CLTG38L11

NOTE: The CLTG38L11 is equipped with a built-in MMI, and cannot be connected to the CLTG00MMIN01 External MMI.

The CLTG38L11 features a reset button and a power ON LED, both located on the top right of the housing.

The CLTG38L11 can be connected to a maximum of one CLTG38EXPN01 Expansion Board. It can also be connected to the CLMMI00N21.

The CLTG38L11 has a built-in LONWORKS Module and is thus LONWORKS-capable.

CLTG38EXPN01 Expansion Board

A maximum of one CLTG38EXPN01 can be connected to each CLTG38L01 or CLTG38L11.

NOTE: The CLTG38EXPN01 cannot be connected to the CLTG00MMIN01 External MMI or to the CLMMI00N21. Rather, it can be connected only to the CLTG38L01 or CLTG38L11.

The CLTG38EXPN01 is LONWORKS-capable via the CLTG38L01 or CLTG38L11 to which you connect it.

SPECIFICATIONS

Mounting Options

Cabinet mounted on DIN-rail (rail clips included in delivery) or wall.

Wiring

The controllers can be wired with screw terminal blocks attached directly at the housing. Pre-wiring is possible, and a controller can be replaced without rewiring.
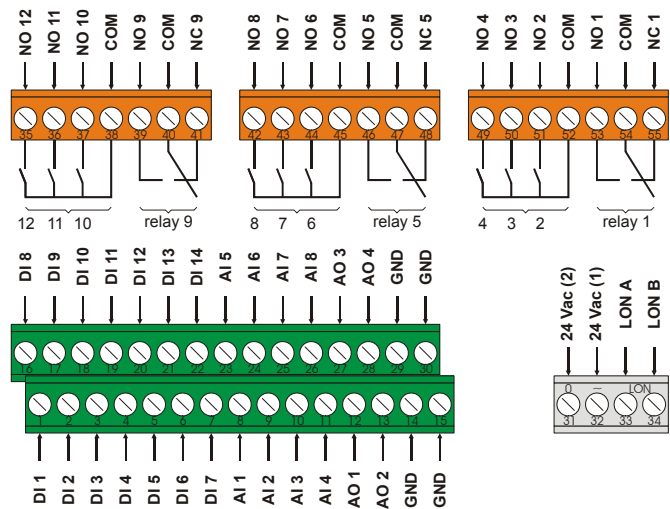

Fig. 1. Terminal assignment

Table 1. Input/output specifications

type	characteristics
8 AI's (universal)	Sensor: NTC 20kΩ (-50...+150 °C)
	Voltage: 0...10 V; max. ratings: +20 V / -1 V
	Current: 0...20 mA (via external 500 Ω resistor)
	Resolution: 10-bit
	Slow digital inputs (dry contact)
	Not galvanically isolated
14 DI's	DC voltage switching thresholds:
	- ON: 4.7 to 7.7 Vdc
	- OFF: switching ON level -0.8 to -3 Vdc (there is a hysteresis of between 0.8 and 3 V to switch back to OFF)
	Min. AC voltage switching threshold:
	- 24 Vac -20%
	24 Vac via dry contact (no special auxiliary voltage supplied)
	Can be used as status inputs, alarms, or slow totalizers
	Sample time: 250 msec
	Not galvanically isolated
4 AO's (universal)	Voltage: 0...10 V, max. 11 V or 2…10 V
	Max. output current (sink/source): -0.5 mA / +1 mA
	Resolution: 8-bit
	Relay: via MCE3 or MCD3
	Not galvanically isolated
12 DO's	Output stage: relays (one changeover relay per block)
	Power failure position: inactive
	Max. voltage: 230 Vac; DO's can switch 24 or 230 Vac or Vdc
	Max. switch frequency: < 2 Hz
	Output strength: 2 A / 230 Vac (cos φ = 1.0)
	Total device: max. 12 A
	Lifetime (electrical): 500,000 cycles (2 A); the unit lifetime (as measured in no. of cycles) increases when current < 2 A
	Lifetime (mechanical): 30×10^6 cycles

All inputs and outputs are protected against overvoltage up to 24 Vac and 35 Vdc.

EN0Z-0914GE51 R0314

MMI

The CLTG38L11 features a built-in Man-Machine Interface include a keypad (with eight function keys and four fast-access keys) and a display (with LCD, four lines, 16 characters per line, adjustable contrast, backlight).

LONWORKS® Bus Connection

Located on LONWORKS module. 78 Kbaud, FTT-10A Free Topology Transceiver, using LonTalk® protocol.

Controller Serial Port Connection

9-pin Sub-D connector, RS 232, 9.6 Kbaud connection of COACH.

Power Supply

Voltage

- 24 Vac, ±20 %, 49…61 Hz from external transformer or
- 24 Vdc +20%, -10%

Current

3 A (2 A if digital output current $\leq$ 1.5 A). In case of power failure, the super gold capacitor saves RAM content and real-time clock for 72 hours (thus, no problems disposing of dead batteries).

Power Consumption

Max. 10 VA.

Environmental Ratings

Purpose:	for residential, commercial, and light industrial environments
Construction:	for incorporated mounting in cabinets
Operating temperature:	0...+50 °C at 5...95% relative humidity (non-condensing)
Storage temperature:	-20...+70 °C at 5...95% relative humidity (non-condensing)
RFI, EMI:	According to CE regulations
Pollution degree:	Class II
Protection standard:	IP20
Action:	Type 1.C
Software:	Class A
Impulse voltage:	2500 V at relay output

Certifications

- CE according to EN 60730-1 and EN 60730-2-9
- Meets FCC Part 15, Subpart J for Class A equipment.
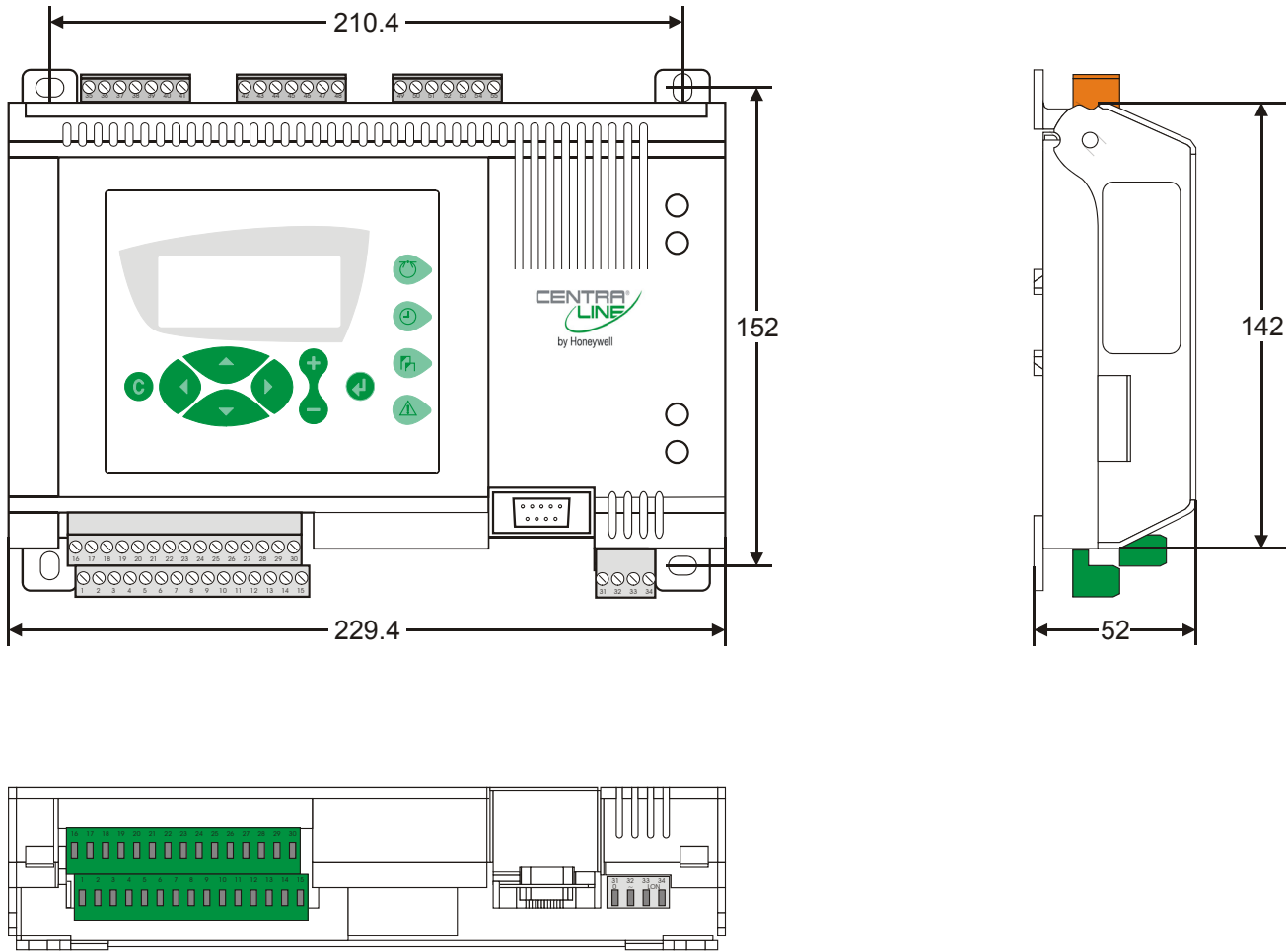
Dimensions

Fig. 2. Dimensions (in mm)