

**Preliminary Technical Datasheet**

**RCC - Resolver to CANopen Converter / Resolver as Encoder in CANopen-Profile**

**General Description:**

The LTN-RCC is an angular sensor with integrated CANopen-controller (no CAN-gateway necessary) and it uses single- or triple-speed resolver for the angular detection. The single speed version is an absolute sensor. The LTN-RCC uses for resolver to digital converting a monolithic RDC-IC and for other functions (control, communication, scaling, speed calculating and so on) a separate microcontroller-IC.



**CAN-References:**

- 1) Robert Bosch GmbH, CAN Specification 2.0A, 1991
- 2) CiA DS 201...207 ver. 1.1, CAN Application Layer for Ind. Appl.
- 3) CiA DS 301 ver. 4.02, CAL-based Communication Profile, Feb. 2002
- 4) CiA DS 303 ver. 1.3, Add. Spec., Part 3: Indicator Spec., Aug. 2006
- 5) CiA DSP 305 ver. 2.0, Layer Setting Service (LSS)
- 6) CiA DS 306 ver. 1.3, EDS Spec. for CANopen, Jan. 2005
- 7) CiA DS 406 ver. 3.1, Device Profile for Encoders, Dec. 2001

**Specifications / Additional Informations**

Accuracy: +/- 0,10° (+/- 6 arcmin), +/- 0,166° (+/- 10 arcmin) or +/- 0,05° (+/- 3 arcmin) on special request  
 Repeatability: +/- 1 LSB (incremental step) of the set resolution  
 e.g. @ 16 bits / 65536 incr: +/- 0,33 arcmin. for single speed and +/- 0,11 arcmin for triple speed version

max. angular speed: 1 mechanical rps (at current setting)  
 possibly max. speed is 18 rps (mech.) for single speed and 6 rps (mech.) for triple speed version (new setting necessary - on request)  
 max. resolution: 65536 incremental steps per (mechanical) revolution by single-speed and 3 x 65536 by triple-speed resolver as sensor.

The resolution can be free software-scaled between 2 and 65536 incremental steps per (electrical) revolution by CANopen protocol. The preset-function (software-zero) and the change of the direction of rotation (CW - CCW) are also supported.

The outputs of the LTN-RCC are position value (in incremental steps) and current speed value (in incremental steps per second). The baudrate and the node-ID can be set by hardware (coding microswitches) or by LSS.

Possible baudrate settings: 10, 20, 50, 125, 250, 500, 800 or 1000 kB/s.  
 Possible node ID settings: 0 to 127 (dec)

The internal bus terminating resistor (120 Ohm / 1W or 15W) can be connected by wire-bridge (screw-terminals).

Power supply: 10 to 36 Vdc  
 Power consumption: ~2 W (e.g. 70 mA @ 24V).  
 Operating temperature: -40 to +85°C

The LTN-RCC is protected against the wrong polarity of power supply and overvoltage on all terminals.

Coupling possibilities:  
 - shaft with internal thread M10  
 - shaft with tapped hole ø10mm including 3 grub screws M4 for radial clamping

Mechanical versions:  
 - open version (IP20) with plastic cover (tube) and screw terminals (2 x 5 terminals)  
 - capsuled version (IP67) in anodized aluminium enclosure with two M12 5-pin connectors (1 male and 1 female)

Connector signals are passed (looptroughed) from one terminal / connector to the other one.

Connector terminals:

	M12 connectors (IP67)	screw terminals (IP20)
CAN Vs	1	signed on PCB
CAN Lo	2	signed on PCB
CAN Gnd	3	signed on PCB
CAN Hi	4	signed on PCB
CAN Shield	5	signed on PCB

Mechanical dimensions:

open version, IP20	diameter: 63,0 mm	length: 81,0 mm
capsuled version, IP67	diameter: 68,0 mm	length: 119,0 mm

Ordering Informations:

	single speed	triple speed
open version	R58WURE151B24-031-07HC	R58WURE153B24-031-07HC
capsuled version	R58WURE151B24-031-07HD	R58WURE153B24-031-07HD