

# TC.VLI

## Independent Voltage Level Indicator

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### Abstract

Today's electrical installations are in general well protected against unexpected contact by a number of construction regulations and prescriptions. But mainly in experimental laboratory and development environments, operators and researchers have to go more in touch with electrical circuitry in order to modify, check or change the setup. In those cases, it is of essential interest to know whether or not a circuit is already low or still carries dangerous voltages.

REGATRON developed a completely self-alimenting and brand independent indicator unit specially designed for the purpose to monitor the DC voltage level across two electrical lines of interest.



**RoHS**  
COMPLIANT

Figure 1: TopCon TC.VLI unit

### Basic operation

TC.VLI is best suited for any type of DC voltage monitoring by its compact and handy construction. The unit is not dependent on REGATRON power supplies. The alimentation of electronic circuitry inside the unit is completely done by the monitored voltage source. No external power supply is needed except if the user wishes to drive an external relay circuit for further signalisation. Of course, the voltage 'DANGER LEVEL' may be set according to the users concepts within 15VDC .... 100VDC.

Exceeding the set voltage level is indicated by the front-mounted signal lamp, at the same time, an internal circuit for an external indicator lamp (special REGATRON part) is activated, driving the optional 'WARNING' indicator.

In addition to these indicators, an 'Open Collector' drive output is activated. The output may be used to drive an external relay circuitry for further processing. This circuit is fully floating.

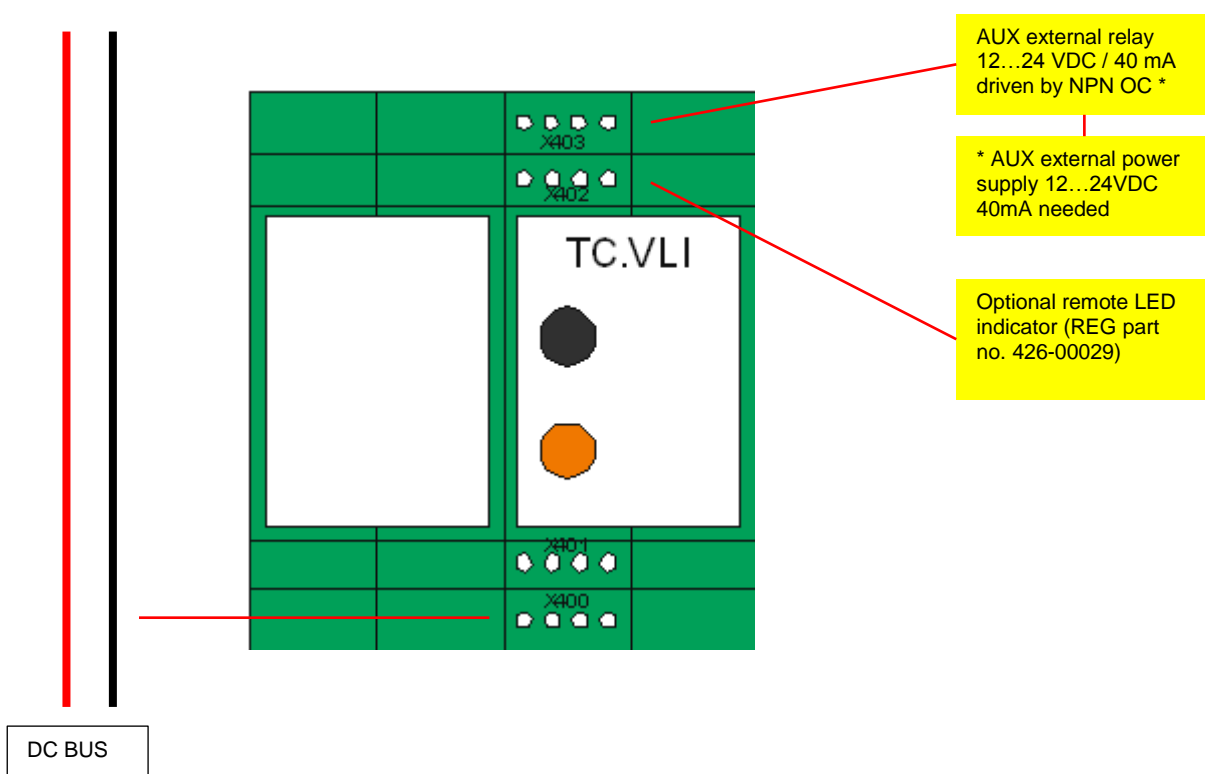


Figure 2: General TC.VLI functionality

As to be noticed from Figure 2, the TC.VLI is basically driven by the monitored DC bus. Exceeding the set voltage will light the internal warning indicator as also – if connected – the remote warning devices.

**Connecting an additional ALARM relay**

If further ALARM processing is desired, a simple unregulated 12V to 24 VDC/40mA supply may be connected to the fully isolated relay driver circuit supplying the ALARM output. An 'NPN' type open collector output feeds an appropriate relay, which is activated in the ALARM case. The relay contacts may then be used as switch for further big alarm lights or for mechanical protective interlocks.

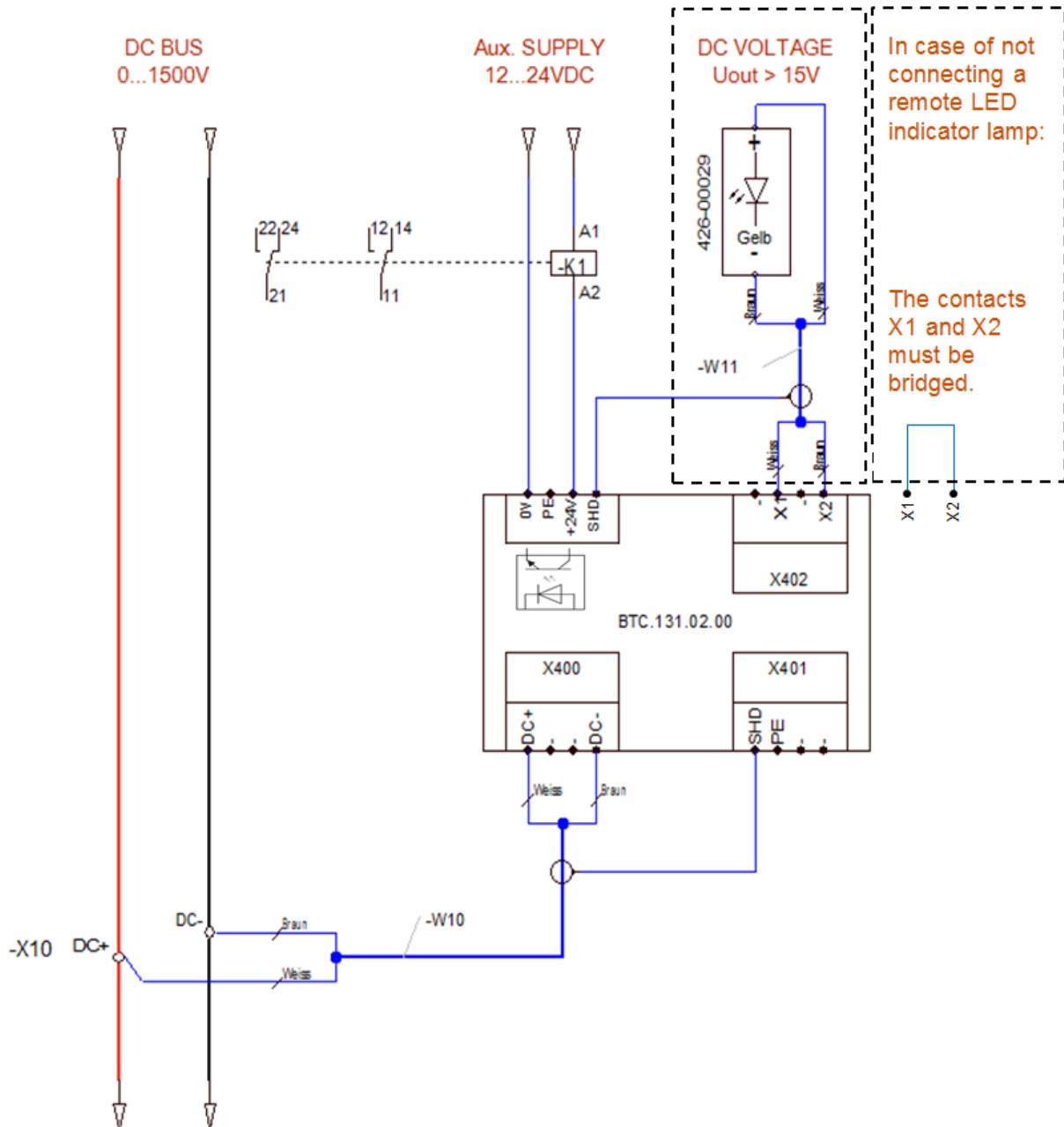


Figure 3: Typical basic wiring of TC.VLI; AUX power and relay K1 included (40 mA max)  
Note also the optional external ALARM indicator 426-00029

### Application examples

- Monitoring of a variable voltage DC bus
- Monitoring of a DC generator voltage
- Monitoring of the voltage on an intermediate DC voltage circuit
- Monitoring of battery and fuel cell voltages (On / Off)
- Monitoring of storage capacitor voltages
- 'Voltage live' message to superposed control structure
- Driving 'traffic -light' styled warning indicators
- General laboratory/development use for voltage surveillance

### Recapitulation

REGATRON TC.VLI is a brand-independent Voltage Level Monitor developed specially for checking DC bus voltages against dangerous levels. The switch level may be set individually according to the desired protection purpose.

The TC.VLI is being alimented by the monitored voltage itself, no external power supply is needed. If the user wishes to run an external relay 12... 24VDC, an appropriate small power source is necessary. Note that the relay drive current may not exceed 40 mA. This auxiliary circuit is completely isolated from the DC bus by an isolation voltage >1500VDC.

Additionally, an external indicator lamp (REG part Nr. 426-00029) may be connected to the unit. Note, that this line carries the potential of the monitored bus against PE.

Please contact REGATRON customer support for any questions and/or TC.VLI technical datasheet.

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All product specifications are subject to change without notification.