

### Description

The TLC 4 non-contact overhead wire contact is an electronic further development of the existing power contact (usually just called an O contact). It can therefore be used in all cases in which power contacts had been used up until now, i.e., for all tasks in which the power pickup is required to trigger a signal or other switching process. Since it is easy to install directly on the contact wire, this form of contact pickup is also suitable stationary units, especially also for construction site units that are set up for a short time only and in which the contact point varies temporarily, or the like.

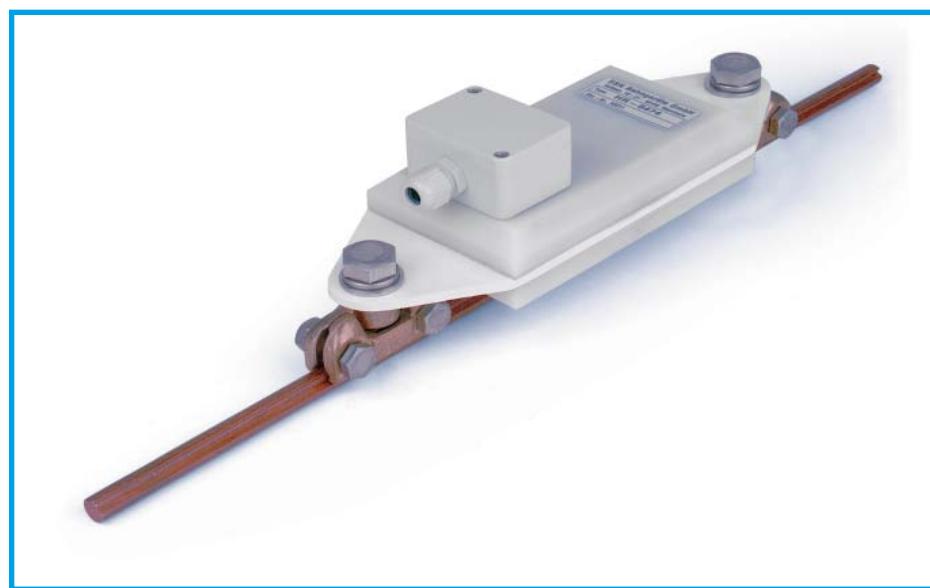
This electronic development of the former power contact offers all the advantages of modern electronics in addition. It is no longer necessary to have any contact with the switching part by the current pickup. This also does away with problems of oscillations in the entire contact wire network or jumping of the current pickup at the contact wire and shocks and impacts at the power contact. The high switching clearance reserve ensures that there is still trouble-free switching if the current pickup makes poor contact at the contact wire.

Additional safety requirements can also be met, which was not the case with the normal power contact, can be met in connection with the four-wire technology used and the corresponding electronic evaluation. In addition, the electronics allow counting down to the individual sliding contact bow due to their speed of response and regardless of the speed of the vehicle.

However, in practical terms the special advantage is that the entire supply network for the overhead lines is completely isolated galvanically from the contact wire mains network. The former problem of the need to carry an earth up to the contact wire or to the power contact thus cannot occur any longer. The switching behaviour is likewise not influenced by voltage fluctuations or other problems in the contact wire power supply.

The entire signalling system is made up of three components:

1. the fully encapsulated and galvanically



The fully encapsulated non-contact sensor that is galvanically isolated from the contact wire, and which can be attached simply to the contact wire by means of contact wire terminals in accordance with DIN 43142/44.

2. The isolating stage that is galvanically isolated from the four wires leading to the overhead wire contact and from the power supplies, i.e., the signalling power supply, so that the connections leading to the overhead wire contact are galvanically isolated from all other power supplies and have no earth connection.

This means: no trailing earthing cable to the contact wire. This also prevents over-voltages, electrical interference or other problems in the electrical power supply being brought into the signalling power supply.

3. The actual evaluation stage that is designed in accordance with the requirements and needs stated by the customer. Here it is possible to monitor the connecting cables to the sensor, the function of the sensor and trouble-free switching. In addition to the desired signal contacts, it is also possible to derive an error signal for cable breaks, function failures, etc. As a rule, the error signal (if nothing is desired to the contrary) is only deleted after clearing and acknowledging the error. The acknowledgement can also be done via the remote operation unit. The evaluation stage allows in addition a corresponding lengthening of the contacts so that the short switching pulses that occur on travelling past the carbon piece are passed on.

### Technical data

<b>Dimensions</b>	see figure
<b>Housing</b>	Polyamide 6.6
<b>Holder</b>	Plastic-reinforced glassfibre
<b>Weight</b>	approx. 1.4 kg
<b>Attachment</b>	by means of 2 contact wire terminals in accordance with DIN 43142/44 at the contact wire
<b>Weight</b>	Weight approx. 0.8 kg → 8474 01
<b>Supply cable</b>	Contact wire terminals for trolley bus operation → 8474 03
<b>Length</b>	(also available with tightening eye-bolts on request)
<b>Resistance</b>	4 wires, twisted
<b>Trigger values</b>	max. 3,000 m
<b>Switching clearance reserve</b>	max. 50 Ohm
<b>Vehicle speed</b>	Sliding contact bow min. 40 mm wide, regardless of the thickness of the carbon layer.
<b>Ambient temperature</b>	min. 15 mm from the contact wire
<b>Type of protection</b>	0 - 120 km/h
<b>Insulation</b>	-25°C to +70°C
<b>Power supply</b>	IP 67 (fully encapsulated)
<b>Outputs</b>	depending on the type of insulation done via the associated separation stage (low voltage) DC 20-24 V
<b>Signal duration</b>	2 complementary current loops switching current: I = 20 mA
<b>Shock loading</b>	Load: < 300 Ohm
<b>Accessories</b>	corresponds to the duration of the damping, regarding of the width of the contact bow and the speed of the vehicle
<b>Separation stage</b>	max. 30 g
<b>Evaluation stage</b>	(please ask)

### Ordering information

Type	Part No.
8474 01 (Tram)	130100
8474 03 (O-Bus)	130101

Special configurations to suit customer specifications are available on request.

output contacts are provided for subsequent switching process with defined contact times. It is furthermore possible in the evaluation stage to save the signal pulses that are being sent in rapid sequence from multiple carbon contact bows, regardless of the speed of the vehicle, and to pass them on with defined, constant contact and pause times. This thus makes it possible to handle more demanding switching tasks such as the counting of the contact bows.

The TLC 4 non-contact overhead wire contact has cable length compensators in the sensor output which eliminate any effects of the cable over wide areas so that longer cable lengths can be handled without the need to switch in additional amplifiers in between.

LEDs for the status display of the two signal cables (I+) are installed in the connection terminal block for function display. In normal cases, no carbon underneath the overhead

wire contact, a current of 20 mA flows to cable I (terminal 4). The green LED indicates this by lighting up. If there is a piece of carbon underneath the effective area of the overhead wire contact, this switches over the signal output. The green LED goes out for this period of time and the red LED lights up.

