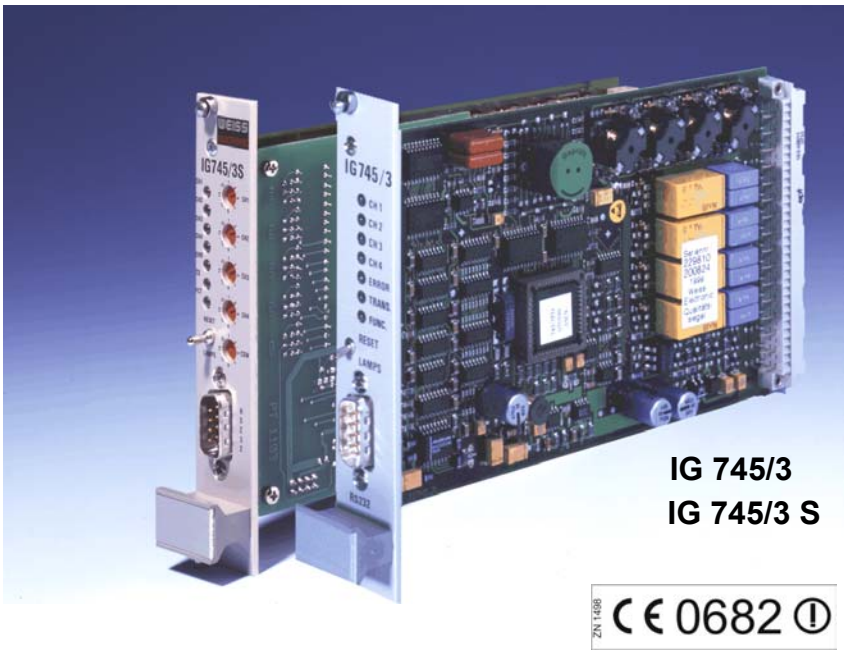
IG 745/3
IG 745/3S

4-Channel-Loop-Detector

Euro-card plug-in 19"



Application range

- Traffic technology
- Signal output for traffic light installations
- Traffic counting
- Bus classification / car-lorry classification
- Special options
  - Detection of traffic jams
  - Speed measuring

Features

- high noise immunity (frequency adjustment, oversampling, synchronisation)
- automatic regulation of temperature influences
- permanent loop control
- ferrite control
- wide tuning range for basic frequency
- detector synchronisation: several detectors can be synchronised to avoid cross-talk
- comfortable operation via PC-software (first software edition included)
- different readout functions adjustable:
  - presence signal
  - impulse signal
  - directional signal
  - adjustable turn on/off delay
- RS485-interface and RS232-interface
- operational parameters are stored in EEPROM
- euro-card plug-in for 19”-module carrier
- narrow design: 4 or 5 TE
- low power consumption
- connections and functions compatible to IG745 resp. IG745/2
- optional: manual adjustment by means of turn and slide switches (version IG745/3S)

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4-Channel-Loop-Detector

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Function description:

The 4 channel loop detector IG745/3 was especially designed for traffic applications. It stands out for its multiple special functions. Like the series IG745 and IG745/2, the loops are controlled in the noise immune multiplex mode. Apart from the usual switching outputs, this detector has an RS485 data-bus interface.

The oscillator can be adjusted to very low loop inductivities by a jumper (single-turn loops). For inductivities of 400 µH or more resistances of 40 Ohm are permitted (corresponds to approx. 550 m lead-in wiring with Ø = 0.8 mm). A higher inductivity L can be reached for a given loop geometry by increasing the number of turns N ($L \sim N^2$).

At the front-side service interface (RS232) multiple channel parameters (sensitivity, measuring time, hold time, operational frequency, turn on/off delay, directional logic, oversampling) can be adjusted via laptop computer (service software IGBT).

This software also allows the diagnosis of loops and detectors as well as the activation of special functions.

Switch functions IG745/3S

Alternatively to the PC-program IGBT, the version IG745/3S offers the possibility of adjusting the following functions via turn and slide switches: hold time, sensitivity, readout function, oversampling, channel function.

Classification function:

A bus detection function can be implemented by using a special loop (10 m x 2.5 m, 2 windings). The value of attenuation is used as decisive criterion. For smaller loops a simple differentiation between car / lorry can be realised.

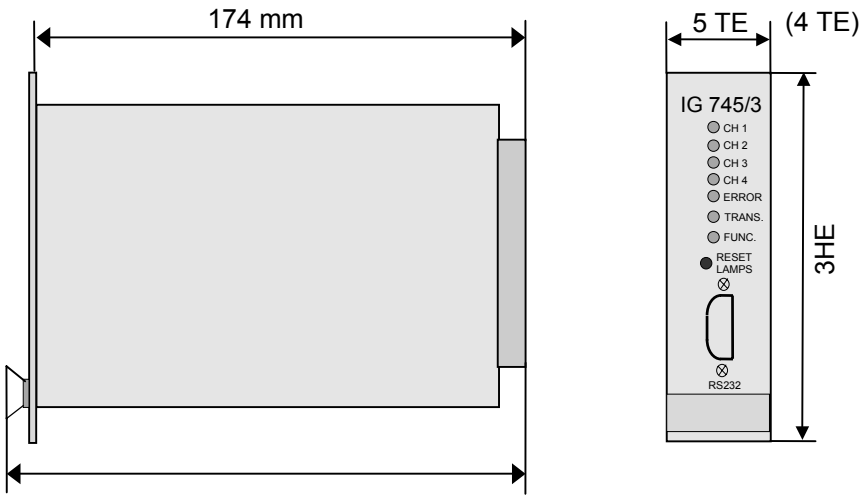
Directional logic:

A directional logic can be realised by laying two loops successively arranged in driving direction. For this, the switching output of the loop second in driving direction is used as directional signal. Channel 1 / 2 resp. channel 3 / 4 are combined to one directional logic each, but can otherwise be parameterised totally independent from each other.

Synchronization:

By synchronizing up to 30 detectors, disturbances caused by cross-talk of the loops and their lead in wiring can be eliminated.

Dimensions:



Measurements are subject to manufacturer's tolerances

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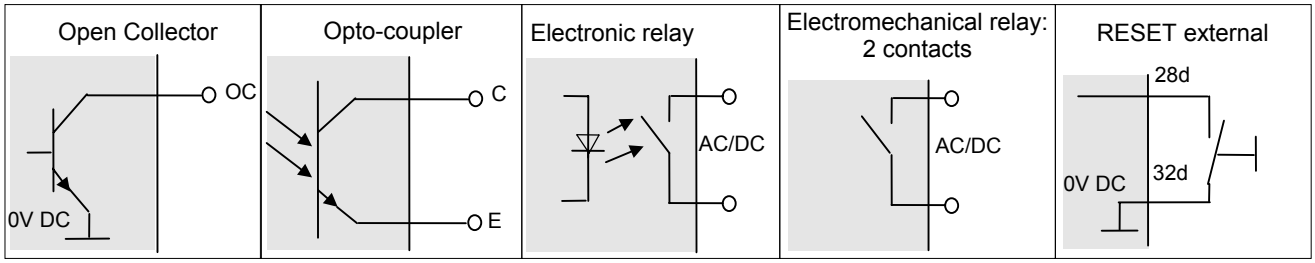
4-Channel-Loop-Detector
Euro-card plug-in 19"

☐ Technical Data:

Power supply:	Standard: 24 V AC/DC Tolerance: DC: 14 V - 38 V; AC: 12 V_{eff} - 26 V_{eff}, 50/60 Hz Optional: 5 V DC +/-5 % or 12 V DC +/-10 %
Power consumption:	0.8 W - 1.4 W with 24 V DC 1)
Operating temperature range:	according to DIN VDE 0832
Storage temperature range:	-40°C to +80°C
Inductivity range:	20 µH - 2000 µH (recommended range: 80 µH to 300 µH)
Sensitivity:	9 levels, max. 0.007 % to min. 0.5 % (frequency change $\Delta f/f_0$ in %) 2)
Measuring time:	10 levels: min. 2.5 ms, max. 45 ms 2)
Hold time:	10 levels: t_{min} = 2 s, t_{max} = ∞ 2)
Alignment:	automatic after a few seconds: - after switching on power supply - after pressing RESET-key - after external RESET command - after change of parameters via PC or hand terminal; for IG745/3S also via switch
Outputs:	switching output per channel: - 2 relay contacts (optional: 1 opto-coupler / electr. relay) with F- and C-strip - 1 opto-coupler (optional: 1 relay contact / electr. relay) with B-strip - Open Collector error message per channel: open collector (only F- and C-strip) general failure report: opto-coupler
Safety:	power supply: suppressor-diode loop inputs: glow lamps, Z-Diodes, transmitter 3)
Dimensions:	front panel: W: 21 mm or 26 mm, H: 128 mm
Connection terminal:	DIN 41612: - type F: 48-pin strip, 3 row - type C: 32-/48-pin strip, 2/3 row - type B: 64-pin strip, 2 row
Weight:	approx. 250 g

1) Power consumption depending on switching output (relay, opto-coupler)
2) limited number of levels for activation of switch functions (only IG745/3S)
3) Attention: This is only an overvoltage fine protection! Supplemental measures (unsubtle protection) must be applied!

Technical data of outputs



• Open Collector	• Opto-coupler	• Electronic relay	• Electromechanical relay
U_{max} = 50 V	U_{max} = 50 V	U_{max} = 40 V AC / DC	U_{max} = 50 V AC/DC
I_{max} = 300 mA	I_{max} = 50 mA	I_{max} = 0.2 A Peak AC/DC	I_{max} = 0.5 A AC/DC
P_{tot} = 250 mW	P_{tot} = 100 mW	P_{tot} = 100 mW	
$I_c \leq 20$ mA: $U_{CEsat} \leq 0.4$ V	$I_c \leq 10$ mA: $U_{CEsat} \leq 0.4$ V		
non-floating output	floating output	floating output	floating output

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4-Channel-Loop-Detector
Euro-card plug-in 19"

Pin assignment DIN41612 type F and C

Type F: 48-pole multipoint plug, connection rows d / b / z
Type C: 32-/48-pole multipoint plug, connection rows a / b* / c

	d b z	d (c)	b *	z (a)
2	I I I	loop 2	RS485-A	loop 1
4	I I I	loop 4	RS485-B	loop 3
6	I I I	loop 2	synchronisation 1	loop 1
8	I I I	loop 4	CH1 switching output (B)	loop 3
10	I I I	CH2 switching output (A) (E)	CH2 switching output (B)	CH1 switching output (A) (E)
12	I I I	CH4 switching output (A) (E)	CH3 switching output (B)	CH3 switching output (A) (E)
14	I I I	CH2 switching output (A) (C)	CH4 switching output (B)	CH1 switching output (A) (C)
16	I I I	CH4 switching output (A) (C)	CH1 switching output (B)	CH3 switching output (A) (C)
18	I I I	CH2 error message ext. (OC)	CH2 switching output (B)	CH1 error message ext. (OC)
20	I I I	CH4 error message ext. (OC)	CH3 switching output (B)	CH3 error message ext. (OC)
22	I---I---I	24 V AC/DC 1	24 V AC/DC 1	24 V AC/DC 1
24	I I I	CH4 switching output (OC)	CH4 switching output (B)	CH3 switching output (OC)
26	I I I	CH1 switching output (OC)	synchronisation 2	CH2 switching output (OC)
28	I I I	RESET extern	general failure report (E)	general failure report (C)
30	I---I---I	24 V AC/DC 2	24 V AC/DC 2	24 V AC/DC 2
32	I I I	0 V DC	PE	+24 V DC / +12 V DC / +5 V DC

Pin assignment DIN41612 type B

Type B: 64-pin multipoint plus, connection rows a / b

	a b	a	b
1	I I	-	-
2	I I	-	CH1 switching output (E)
3	I I	CH1 switching output (C)	-
4	I I	-	CH1 switching output (OC)
5	I I	CH1 loop	-
6	I I	-	CH1 loop
7	I I	CH2 switching output (OC)	-
8	I I	-	-
9	I I	CH2 switching output (E)	-
10	I I	-	CH2 switching output (C)
11	I I	CH3 switching output (OC)	-
12	I I	-	CH2 loop
13	I I	CH2 loop	-
14	I I	-	PE
15	I I	-	-
16	I I	-	CH3 switching output (E)
17	I I	CH3 switching output (C)	-
18	I I	synchronisation 1	-
19	I I	CH3 loop	-
20	I I	-	CH3 loop
21	I I	synchronisation 2	-
22	I I	-	-
23	I I	CH4 switching output (E)	-
24	I I	slot control, bridged with 25a	CH4 switching output (C)
25	I I	slot control, bridged with 24a	-
26	I I	-	CH4 loop
27	I I	CH4 loop	-
28	I I	RS485-B	general failure report (E)
29	I I	general failure report (C)	RS485-A
30	I I	-	+12 V DC - +24 V DC
31	I I	CH4 switching output (OC)	/RESET external (low-active)
32	I I	-	0 V DC

(E) : emitter (model opto coupler)
(C) : collector (model opto coupler)
--- : bridged
* : not for model C, 32 –pin

(A), (B) : A-/B-contact (relay model), otherwise only A
(OC) : open collector
- : not occupied
PE : leading contact

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