GBR

1 Characteristic features

- 11-pole circular connector
- Galvanic separation of loop and detector electronics
- Automatic system adjustment directly after power-on
- Sensitivity adjustment independent of loop inductivity
- Loop busy signal emitted by LED-display
- Potential-free relay contacts at the outputs
- Loop fault message via LED-signal
- Indication of historical loop fault
- Continuous rebalancing of frequency drifts in order to avoid environmental influences
- Diagnostics by external Service Program via USB-Mini connector

2 Settings

Use the following DIP Switches for the standard settings.

2.1 Sensitivity

DIP 1 DIP 3	DIP 2 DIP4	Function
OFF	OFF	Low
ON	OFF	Medium Low
OFF	ON	Medium High
ON	ON	High

DIP 1/2 → Loop 1
DIP 3/4 → Loop 2

More detailed Sensitivity settings via USB Interface!

2.2 Frequency

DIP 5	Function
OFF	Low
ON	High

2.3 Hold Time

DIP 6	Function
OFF	5 Minutes
ON	Infinite

More detailed Hold Time settings via USB Interface!

2.4 Output Mode Relay 2

DIP 7	Function
OFF	Presence Output on Relay 2
ON	Pulse Output on Relay 2

Setting doesn't affect Relay 1!

2.5 Output Edge Relay 2

DIP 8	Function
OFF	Pulse on Loop Entry
ON	Pulse on Loop Exit

Available only if Relay 2 is in Pulse Output Mode!

2.6 Direction Mode

DIP 9	Function
OFF	Presence Output
ON	Direction sensitive Output

2.7 Direction Logic

DIP 10	Function
OFF	Dir. Logic Presence Output
ON	Dir. Logic Pulse Output

Available only if Direction Sensitive Output is active!

2.8 Fail Save / Fail Secure

DIP 11 DIP 12	Function
OFF	Non Inverted Output Signal
ON	Inverted Output Signal

DIP Switch 11 inverts output signal on Relay 1 and DIP Switch 12 on Relay 2.

More settings (Delay, Extension, Loop Fail Output, ..) or more detailed settings (Sensitivity, Hold Time, Output Modes, ..) can be done via USB Interface with the Service Program.

3 Reset-Button

Pressing push button	LED-display*	Operation
1 s	red LED flashes	Triggers a hardware reset with recalibration and resets the LED output for resolved loop faults
5 s	blue LED flashes	Triggers factory settings and resets USB-overwrite

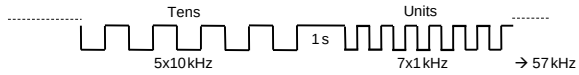
*) Only LEDs on channel 1 are used to display the activation via the push button!

4 LED

Red	Blue	Function
OFF	OFF	No supply voltage
OFF	Fast Flashing	Calibration/Retuning Loops
OFF	ON	Ready for operation, Loop free
ON	ON	Ready for operation, Loop active
ON	OFF	Loop Fault
x	Flashing	Historical Loop Fault or DIP Switch setting overwritten by USB*
Blinking	Blinking	Output Loop Frequency in kHz

*) If one or more DIP Switch setting is overwritten by the service program via USB interface.

Example for loop frequency 57 kHz:



5 Diagnostics

To display more details of the induction loop system, e.g. frequency, detuning, busy time, output signals, .. use the Service Program.

6 Pin Assignment

Pin	Function	-R24		-R230
1	Power	+10-30 VDC	10-30 VAC	L 100-240 VAC
2	Power	GND		N
3	Relay 2 N.C.			
4	Relay 2 COM			
5	Relay 1 N.C.			
6	Relay 1 COM			
7	Loop 1			
8	Loop 1			
9	-			
10	Loop 2			
11	Loop 2			

7 Technical Data

Dimensions (H x W x L)		76 x 38 x 71 mm
Power Supply		-R24: 10-30 V AC/DC, max.1 W -R230:100-240 V AC, 50-60 Hz, max. 2 W
Operating Temp.		-37 °C...+70 °C
Relays		max. 2 A, 230 VAC, 60 W/125 VA
Loop	Inductivity	20-700 µH, recommended 100-300 µH
	Frequency	30-130 kHz, 2 steps
	Supply Line	max. 200 m
	Resistance	max. 20 Ohm, incl. Loop Supply Line
Connectors	Power, Loop, Relay.	11-pole circular connector
	Diagnostic	USB-Mini AB

Additional note: Maybe only one frequency adjustment level is available when using induction loops outside of the recommended range. Additionally using lower induction loop values than recommended, can lead to reduced loop resistance values.

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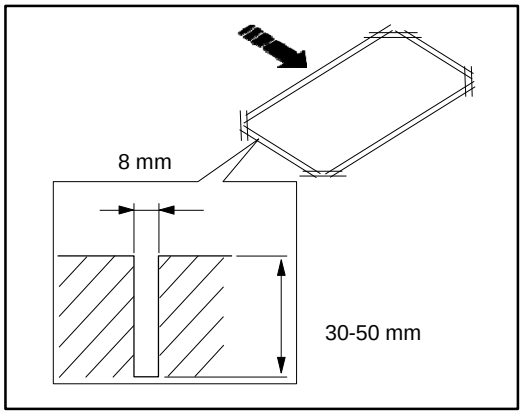
GBR

8 Instructions for the installation of induction loops

- The induction loops must be installed at least 15 cm from fixed metal objects and at least 1 m from moving metal objects. The maximum distance to the road surface should be 5 cm.
- Keep loop cables away from mains power cables.
- Use a normal single-pole 1.5 mm² diameter cable. If the cable is buried directly, it must have a suitable insulation. If hot casting compound is used ensure for temperature resistance of the cable.
- Preferably, induction loops are made square or rectangular. If it is not possible to use pre-fabricated loops, the installation is performed as shown in the figure below, in a groove cut into the road surface. In this case, the loop cable must be firmly fixed in the groove and then the groove must be filled with the potting compound. The corners should be at an angle of 45° to avoid damage to the insulation of the cable.



- For installation of the loop cable use the number of turns indicated in the table.

Induction loop perimeter	Number of turns
less than 3 m	6
from 3 to 4 m	5
from 4 to 6 m	4
from 6 to 12 m	3
over 12 m	2

- The two cable ends from the loop to the detector must be twisted at least 20 times per meter.
- Do not make any joints on the cable. If this is still necessary, the contact points must be protected against the ingress of moisture by means of cast resin.

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Declaration of Conformity

in accordance with the
Electromagnetic Compatibility (EMC) Directive 2014/30/EU,
RoHS 2 Directive 2011/65/EU
and
Low Voltage Directive 2014/35/EU

Product Manufacturer	:	**FEIG ELECTRONIC GmbH** Lange Strasse 4 D-35781 Weilburg Germany Phone +49 6471 3109 0
Product Designation	:	**VEK MNE1-R24, VEK MNE1-R230** **VEK MNE2-R24, VEK MNE2-R230**
Product Description	:	1 & 2-Channel Induction Loop Detector .

FEIG ELECTRONIC GmbH herewith declares the conformity of the product with applicable regulations below.

Standards applied :

Electromagnetic compatibility (EMC) Part 6-2: Generic Standards Immunity for industrial environments	**EN 61000-6-2:2005 + AC:2005**
Electromagnetic compatibility (EMC) Part 6-3: Generic standards Emission standard for residential, commercial and light-industrial environments	**EN 61000-6-3:2007 + A1:2011**
Information technology equipment - Safety Part 1: Generic requirements	**EN 60950-1:2006 + A2:2013**

Weilburg-Waldhausen, 08/02/2017
Place & date of issue

Dirk Schäfer (Technical Director)
CONTROLLER & SENSORS

This declaration attests to conformity with the named Directives but does not represent assurance of properties.
The safety guidelines in the accompanying product documentation must be observed.

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