

По вопросам продаж и поддержки обращайтесь:
Волгоград (844)278-03-48; Воронеж (473)204-51-73; Екатеринбург (343)384-55-89; Казань (843)206-01-48;
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Technical Datasheet



IF* and VIE*-** (Ex)

Inductive Pickups and Amplifiers for Extreme Fluid Temperatures

Technical Data

Supply voltage U_B	+7 up to 29 V DC
Quiescent current	< 4 mA
Frequency range	7 up to 3,000 Hz according to flow meter
Ambient temperature	-20°C up to +50°C
Medium temperature (not relevant for type VIEG)	max. + 120°C with a distance of at least 25mm max. + 150°C with a distance of at least 65mm between flow meter and amplifier housing
Input impedance	< 100Ω
Input	0.5 up to 500 mV
Electrical connection	One or two 3-pin terminals for inductive pickup, amplifier, supply and output signals, max. wire size 2.5mm ²
Housing	Aluminium, L = 64, W = 58, H = 37 (mm) one or two cable sleeves
Pickup housing	Stainless steel as per DIN 1.4104
Weight	approx. 400g
Dimensions	see drawing
Ingress protection	IP65 (DIN 40050)
Ex-protection 100a	 II 2 G EEx ia IIC T6, BVS 03 ATEX E 207
Electrical Connection	frequency output, selectable: voltage level three-wire NPN/PNP a) three-wire active NPN high level: $U_{high} > U_B - 0.6V - (2.6k\Omega, I_{out})$ low level: $U_{low} < 0.6V + (1.3k\Omega, I_{out})$ b) three-wire passive NPN/open collector high level: $U_{high} > U - (1.3k\Omega, I_{out})$ low level: $U_{low} < 0.6V + (1.3k\Omega, I_{out})$ U is applied at the output, max. 29V c) three-wire active PNP (not available for Ex-versions) high level: $U_{high} > U - 0.6V - (150\Omega, I_{out})$ low level: $U_{low} = \text{blocking}$ $I_{max.} = 60mA$; $P_{max.} \text{ an } R_s = 1W$; $R_s = 150\Omega$ current level two-wire DIN 19234 NAMUR high level: $I_{high} > 2.2mA$ low level: $I_{low} < 1.1mA$

Safety-relevant parameters (only for Ex-versions)

a) three-wire active NPN, version VIE*-3A

Input:	terminal 1 and 2:	$U_{\max.} = 30 \text{ V}$ $R_i = 1,2 \text{ k}\Omega$	$I_{\max.} = 150 \text{ mA}$ $C_i = 0$	$L_i = 0$
Output:	terminal 2 and 3:	$U_{\max.} = 30 \text{ V}$ $R_i = 1,2 \text{ k}\Omega$	$I_{\max.} = 25 \text{ mA}$ $C_i = 0$	$P_{\max.} = 106 \text{ mW}$ $L_i = 0$

b) three-wire passive NPN/open collector, version VIE*-3P

Input:	terminal 1 and 2:	$U_{\max.} = 30 \text{ V}$ $R_i = 1,2 \text{ k}\Omega$	$I_{\max.} = 150 \text{ mA}$ $C_i = 0$	$L_i = 0$
Output:	terminal 2 and 3:	$U_{\max.} = 30 \text{ V}$ $R_i = 1,2 \text{ k}\Omega$	$I_{\max.} = 500 \text{ mA}$ $C_i = 0$	$L_i = 0$

c) two-wire DIN 19234 NAMUR, version VIE*-2N

In-, output:	terminal 1 and 2:	$U_{\max.} = 30 \text{ V}$ $C_i = 100 \text{ nF}$	$I_{\max.} = 150 \text{ mA}$ $L_i = 0$	$P_{\max.} = 175 \text{ mW}$ $R_i = 0$
	terminal 2 and 3:	$U_{\max.} = 30 \text{ V}$	$I_{\max.} = 500 \text{ mA}$	
	terminal 3: n. c.			

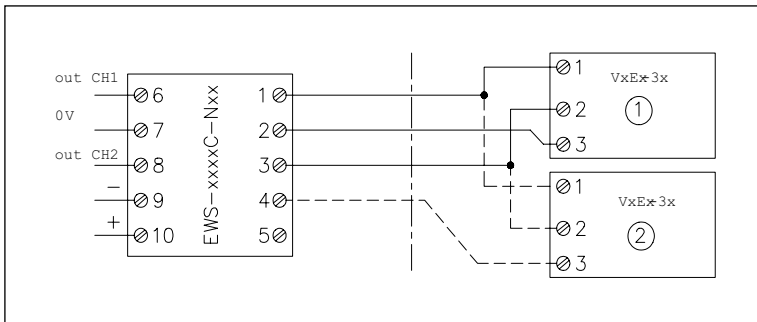
d) version VIEG-**

Input:	terminal 5 and 6:	$U_{\max.} = 0,8 \text{ V}$ $R_i = 15 \Omega$	$I_{\max.} = 2 \text{ mA}$ $C_i = 0$	$L_{eq} = 10 \text{ mH}$
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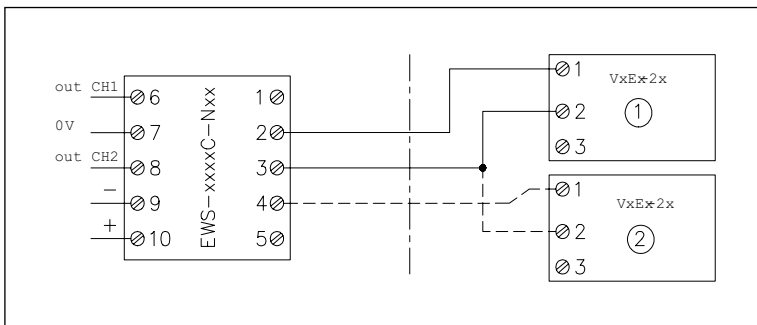
Connect only pickups of the following safety-relevant values to input terminals 5 and 6:

$U_{\max.} = 30 \text{ V}$	$I_{\max.} = 65 \text{ mA}$
$P_{\max.} = 25 \text{ mW}$	$L/R < 2,4 \text{ mH}/\Omega$

Examples for connecting Ex-versions



three-wire connection
EWS-xxxxC-Nxx with one or two off VIE*-3*



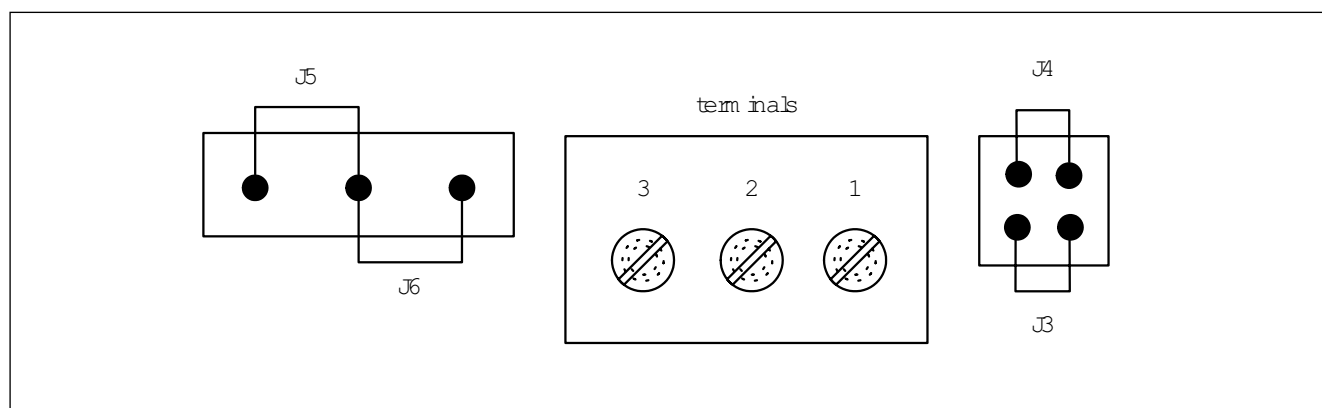
two-wire connection
EWS-xxxxC-Nxx with one or two off VIE*-2*

EWS = intrinsically safe power supply and separation amplifier

Adjusting the output mode

The output mode is adjustable via jumpers located on the amplifier board. The table below is also printed on the inside of the housing top. With Ex-versions the output mode is adjusted by KEM according to customers' specifications and cannot be changed afterwards.

output mode	Jumper J3	Jumper J4	Jumper J5	Jumper J6
two-wire (current level)	off	on	off	off
three-wire active NPN	on	off	off	on
three-wire active PNP (PLC)	on	off	on	off
three-wire passive NPN	off	off	off	on



Electrical connection

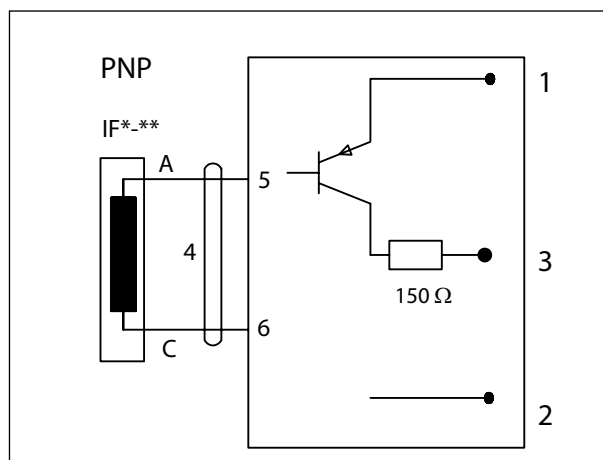
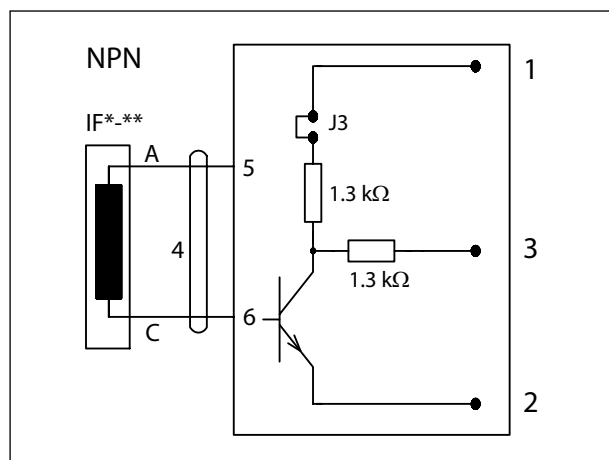
The electrical connection is to be effected via one or two 3-pin terminals inside the amplifier which are accessible via cable sleeves 4–6 mm.

pin connection compact versions:

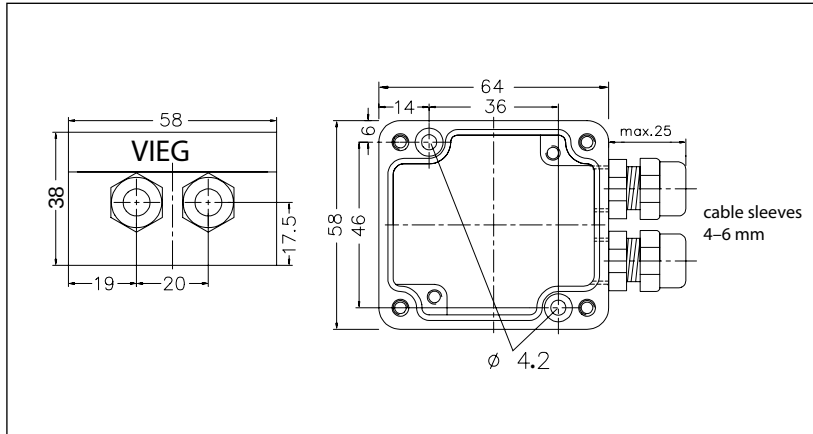
- 1 = +UB
- 2 = 0V/GND
- 3 = output signal

pin connections separated versions type VIEG

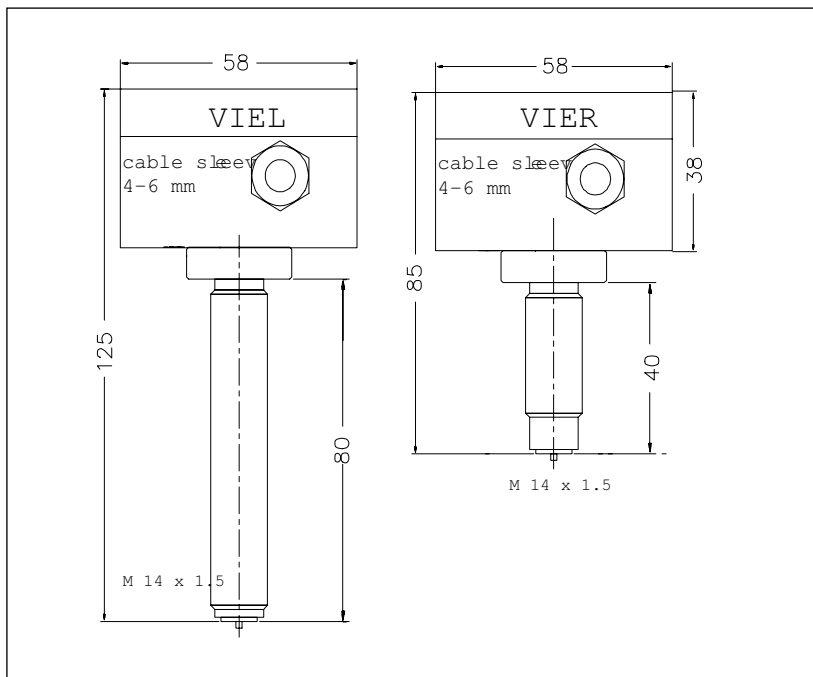
- 1 = +UB
- 2 = 0V/GND
- 3 = output signal
- 4 = 0V/GND/shield
- 5 = signal IF-coil
- 6 = signal IF-coil



Dimensional drawing (mm)



VIEG
separated version without pickup



VIE*
compact version with pickup

Ordering Information

VIE*

G = separated version: amplifier without pickup
K = short version with pickup for ZHM 02–04 and HM series depending on size
L = long version with pickup for ZHM 02–07 and HM series depending on size
R = short version with pickup for ZHM 01 and SRZ series
S = long version with pickup for ZHM 01 and SRZ series up to +150°C fluid temperature

VIE* - ** Ex

Ex-protection ATEX100 Ex II 2 G EExia IIC T6

2N = two-wire DIN 19234 NAMUR
3A = three-wire active NPN
3P = three-wire passive NPN/open collector

G = separated version: amplifier without pickup
K = short version with pickup for ZHM 02–04 and turbines depending on size
L = long version with pickup for ZHM 02–07 and turbines depending on size
R = short version with pickup for ZHM 01 and SRZ-series
S = long version with pickup for ZHM 01 and SRZ series up to +150°C fluid temperature

IF* - ** Ex

Ex-protection ATEX100 Ex II 2 G EExia IIC T6

PG = cable sleeves version with 3 meter cable
HT = HT-version up to 240°C
HTK = HT-version up to 350°C (no Ex protection)

K = short version for ZHM 02-04 and turbines
L = long version ZHM 02-07 and turbines
R = short version for ZHM 01

Notes on Installation

The following has to be adhered to:

- Installation instructions for electrical devices
Installation instructions for associated intrinsically-safe devices
The »Special conditions for safe use« as per EC-Type Examination Certificate
- The amplifier has to be installed in a way that the max. ambient temperature does under no circumstances exceed +50°C (consider self heating).
- With cables care should be taken, that the max inductivity and capacity of the respective voltage or gas group are not exceeded
- Exceeding or falling below the regular measuring range will cause invalid frequency output signals.
- Shielded cables are to be used as connecting lines.
- Generally, supplied units have to be connected by an expert according to EMC stipulations.
- Disconnect power supply before soldering the electrical connector.

Marking

Two-wire connection

KEM Küppers Elektromechanik GmbH

CE 0123 Ex II 2 G EEx ia IIC T6

BVS 03 ATEX E 207

V*E*2* Nr. 12345678

-20°C ≤ Ta ≤ 50 °C

KL 1/2 Ui = 30 V, li = 150 mA, Pi = 175 mW, Ci = 100 nF, Li = 0

KL 2/3 Ui = 30 V, li = 500 mA

KL 5/6 Ui = < 0,8 V, li < 2 mA, Ri = 15 Ω, Ci = 0, li = 10 mH 1)

KL 1 = Ub, 2 = 0 V, 3 = n.c.

KL 4 = Schirm, 5/6 = Spule¹

Three-wire connection

KEM Küppers Elektromechanik GmbH

CE 0123 Ex II 2 G EEx ia IIC T6

BVS 03 ATEX E 207

V*E*-3* Ser.Nr. 12345678

-20°C ≤ Ta ≤ 50°C

KL 1/2 Ui = 30 V, li = 150 mA, Ri = 1,2 kΩ, Ci = 0, Li = 0

KL 2/3 Ui = 30 V, Ri = 1,2 kΩ, Ci = 0, Li = 0

VIE*-3A: li = 25 mA, Pi = 106 mW

VIE*-3P: li = 0,5 A

KL 5/6 Ui = < 0,8 V, li < 2 mA, Ri = 15 Ω, Ci = 0, li = 10 mH 1)

KL 1 = Ub, 2 = 0 V, 3 = output

KL 4 = Schirm, 5/6 = Spule¹

1) only type VIEG

The sticker indicates year of manufacture and person in charge of test.

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