www.kem-kueppers.com
info@kem-kueppers.com

Küppers Elektromechanik GmbH

Installation and Operating Instructions

FlowPod

Local Display with HART and Exd Certification

Document-Version

FlowPod_IO_EN_170516_E005

SW-Version

This document is valid for

Main SW: 1.6 and higher

Index

1. General Information

1.1. Purpose

These instructions cover the installation and basic operation of the FlowPod series display instruments. All configuration and set-up is detailed in a separate manual (FlowPod_M_EN_170112_E004).

Installation and operating instructions for the flow meter will be separate from these instructions and should be consulted in addition to these instructions, along with relevant drawings where supplied.

1.2. Safety

1.2.1. General Safety

All statements regarding safety of operation and technical data in this manual will only apply when the FlowPod is operated correctly in accordance with this manual.

The data for Ingress Protection (IPnn) will only apply when all connectors are caped properly with the corresponding counterpart with the same or better IP rating. Cable glands must be populated with cables with the specified diameter and closed properly. The display cover must be closed.

During operation all openings of the housing must be closed unless otherwise is noted in this manual.

All electrical connections to the load and to the supply must be made with shielded cables unless otherwise is noted in this manual. The FlowPod must be grounded.

As a protection against fire in the positive supply, a fuse with a current rating not higher than the current carrying capacity of the cable used is required.

The user has to adhere to the instructions for installing electrical devices and corresponding instructions.

The devices described in this manual may only be connected and operated by authorized and qualified personnel.

1.2.2. Warnings in this manual

NOTE:

Notes provide important information for the correct usage of the equipment. If the notes are not observed, a malfunction of the equipment is possible.

WARNING!

Warnings provide very important information for the correct usage of the equipment. Not observing the warnings may lead to danger for the equipment and to danger for health and life of the user

2. Certification Standards

- IEC 60079-0:2011 Ed6
- IEC 60079-1:2014 Ed7
- IEC 60079-31:2013 Ed2
- EN 60079-0:2012
- EN 60079-1:2014
- EN 60079-31:2009

2.1. Conditions of Acceptability

(1) The FlowPod is Externally Powered by a Class 2, min. 12 - 30 V DC, 0.09 A, 2 W max. NRTL certified main supply and must be an approved type acceptable to the authorities in the country where the equipment is sold.

(2) The FlowPod shall be installed and used within the ambient temperature range that is marked on the product, however, when the products are being stored, the lower temperature remains the same, but the maximum temperature may be raised to +75 °C [+167 °F].

(3) Equipment has only been tested for electrical safety. No evaluation of functional safety and performance characteristics has been conducted.

2.2. Certificates

- Sira 16ATEX1261U
- IECEx SIR 15.0066

2.2.1. Sira 16ATEX1261U

1 **EU-TYPE EXAMINATION CERTIFICATE**

2 Component intended for use in Potentially Explosive Atmospheres Directive 2014/34/EU

3 Certificate Number: **Sira 16ATEX1261U** Issue: **2**

4 Component: **Flowpod Sensor adaptor**

5 Applicant: **KEM Küppers Elektromechanik GmbH**

6 Address: Liebigstr. 5
85757 Karlsfeld
GERMANY

7 This component and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

8 CSA Group Netherlands B.V., Notified Body Number 2813 in accordance with Articles 17 and 21 of Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014, certifies that this component has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of a component intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in the confidential reports listed in Section 14.2.

9 Compliance with the Essential Health and Safety Requirements, with the exception of those listed in the schedule to this certificate, has been assured by compliance with the following documents:

EN 60079-0:2012+A11:2013 EN 60079-1:2014

10 The sign 'U' is placed after the certificate number to indicate that the product assessed is a component and may be subject to further assessment when orporated into equipment. Any limitations of use are listed in the schedule to this certificate.

11 This EU-Type Examination Certificate relates only to the design and construction of the specified component. If applicable, further requirements of this Directive apply to the manufacture and supply of this component.

12 The marking of the component shall include the following:

II 2 G
Ex db IIC Gb

Project Number 0634

Signed:

Title: Director of Operations

CSA Group Netherlands B.V.
Utrechseweg 310,
6812 AR, Arnhem,
Netherlands

SCHEDULE

EU-TYPE EXAMINATION CERTIFICATE **Sira 16ATEX1261U**
Issue 2

13 **DESCRIPTION OF COMPONENT**

Type code: SV**-****-***-**-**

SV	*	*	-	**	**	-	**	**	-	**
Sensor type										
Carrier Frequency	T									
Inductive	I									
Sensor design type										
Short sensor adaptor, common sensor tap		K								
Long sensor adaptor, common sensor tap		L								
Short sensor adaptor, small sensor tap		R								
Long sensor adaptor, small sensor tap		S								
Material										
1.4305				05						
1.4404				04						
Sensor design connection										
Sensor hole					A1					
Thread socket short					B1					
Thread socket long					B2					
Connection to electronic device										
¾" NPT							N1			
Connection to flowmeter										
M14x1.5 6H								M1		
Certification types										
ATEX, IECEX Ex d Gb Certification										EX

The sensor adaptor is the connection between a flowmeter and an Ex d electronic device. A flowmeter can be a gear meter, helical gear meter, turbines or others. An electronic device can be any device as an indicating device like the normally used "Flowpod" or an adaptor box, which encloses additional electronics to evaluate the signals from the sensor coil. The sensor coil can be a carrier frequency or an inductive one. The sensor adaptor consists of three parts, which are mounted together. "SV-XX-AD-XX-XX-AA" is assembled with "SV-XX-AD-XX-XX-SA" via an M12x1.5 6H thread. This assembly is inserted in an "SV-XX-AD-XX-M14-GA-X", there is a cylindrical joint between both parts. Stub screws secure the parts from slipping off each other, these screws are secured by temperature resistant adhesive. The whole assembly is connected to the flowmeter via an M14x1.5 6H/6g thread. The adapter is secured by a counter nut against loosening from the flowmeter.

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6812 AR, Arnhem Netherlands

SCHEDULE

EU-TYPE EXAMINATION CERTIFICATE **Sira 16ATEX1261U**
Issue 2

Operation of the carrier frequency type:
The coil is actively powered by a sinusoidal signal source of the maximum amplitude of 5 Volts at a frequency in the Kilohertz range. If the magnetic field is adopted by a moving part, e.g. gear or a turbine wheel of a flow meter, a shift in oscillator frequency is observed. Consequently, each shift correlates with a certain amount of displaced fluid, whereby the volumetric flow rate is calculated. Oscillator, coil power limitation and evaluation electronics are located outside the sensor adapter.

Operation for the inductive type:
The inductive type induces a voltage when a gear or a turbine wheel of a flow meter is moving near the sensor. The coil, which is located in the tip of the senor adapter, induces a sinusoidal signal in a frequency range from a few Hertz to Kilohertz depending of the flow rate and the flow meter. Each signal oscillation is correlated with a certain amount of displaced fluid, whereby the volumetric flow rate is calculated. The evaluation electronics are located outside the sensor adapter.

Variation 1 - This variation introduced the following changes:

i. The depth of the bore hole was reduced.

14 **DESCRIPTIVE DOCUMENTS**

14.1 **Drawings**

Refer to Certificate Annexe.

14.2 **Associated Sira Reports and Certificate History**

Issue	Date	Report no.	Comment
0	25 January 2017	R70080926A	The release of the prime certificate.
1	08 January 2018	R70165456A	The introduction of Variation 1.
3	15th October 2019	0634	Transfer of certificate **Sira 16ATEX1261U** from Sira Certification Service to CSA Group Netherlands B.V..

15 **SCHEDULE OF LIMITATIONS**

15.1 The flamepaths shall not be repaired.

15.2 The ambient temperature shall be between the range of –40 °C ≤ Ta ≤ +85 °C.

15.3 The maximum input power of sensor adaptor with the carrier frequency coil shall not exceed 0.11 W.

15.4 The maximum output power of the sensor adaptor with the inductive coil shall not exceed 0.36 W.

15.5 CAUTION – USE FASTENERS WITH YIELD STRESS ≥ 450 MPa.

16 **ESSENTIAL HEALTH AND SAFETY REQUIREMENTS OF ANNEX II** (EHSRs)

The relevant EHSRs that are not addressed by the standards listed in this certificate have been identified and individually assessed in the reports listed in Section 14.2.

CSA Group Netherlands B.V.
Utrechseweg 310,
6812 AR, Arnhem Netherlands

Certificate Annexe

Certificate Number: **Sira 16ATEX1261U**

Component: **Flowpod Sensor adaptor**

Applicant: **KEM Küppers Elektromechanik GmbH**

Issue 0

Drawing	Sheets	Rev.	Date (Sira stamp)	Title
16/07.0001	1 of 13	A01	30 Nov 16	SVxx-2813-2813-xx-AS2 Def. Socket Set Screw
16/06.0011	2 of 13	A01	30 Nov 16	SVxx-2813-2813-xx-AS2 Def. Line Bushing
16/07.0005	3 of 13	A01	30 Nov 16	SVxx-2813-2813-xx-AS2 Flameproof Joint CF
16/07.0006	4 of 13	A01	30 Nov 16	SVxx-2813-2813-xx-AS2 Flameproof Joint IF
16/07.0002	5 of 13	A01	30 Nov 16	SVxx-2813-2813-xx-AS2 Thread Socket short LFM
16/07.0012	6 of 13	A01	30 Nov 16	SVxx-2813-2813-xx-AS2 Thread Socket long only
16/07.0013	7 of 13	A01	30 Nov 16	SVxx-2813-2813-xx-AS2 Thread Socket short only
16/07.0008	8 of 13	A01	30 Nov 16	SVxx-2813-2813-xx-AS2 Sensor Hole
16/07.0007	9 of 13	A01	30 Nov 16	SVxx-2813-2813-xx-AS2 Sensor Hole Short CF
16/07.0010	10 of 13	A01	30 Nov 16	SVxx-2813-2813-xx-AS2 Thread Socket short
16/07.0011	11 of 13	A01	30 Nov 16	SVxx-2813-2813-xx-AS2 Thread Socket long
16/07.0009	12 of 13	A01	30 Nov 16	SVxx-2813-2813-xx-AS2 SV-AA & SV-SA
16/11.0023*	13 of 13	A01	30 Nov 16	SVxx-2813-2813-xx-AS2 Grounding
16/08.0020	1 of 2	A06	30 Nov 16	SVxx-2813-2813-xx-LA Label drawing

* This drawing number was corrected by Issue 1

Issue 1

Drawing	Sheets	Rev.	Date (Sira stamp)	Title
16/07.0001	1 of 13	R01	18 Dec 17	SVxx-2813-2813-xx-AS2 Def. Socket Set Screw
16/06.0011	2 of 13	R01	18 Dec 17	SVxx-2813-2813-xx-AS2 Def. Line Bushing
16/07.0005	3 of 13	R01	18 Dec 17	SVxx-2813-2813-xx-AS2 Flameproof Joint CF
16/07.0006	4 of 13	R01	18 Dec 17	SVxx-2813-2813-xx-AS2 Flameproof Joint IF
16/07.0002	5 of 13	R01	18 Dec 17	SVxx-2813-2813-xx-AS2 Thread Socket short LFM
16/07.0012	6 of 13	R01	18 Dec 17	SVxx-2813-2813-xx-AS2 Thread Socket long only
16/07.0013	7 of 13	R01	18 Dec 17	SVxx-2813-2813-xx-AS2 Thread Socket short only
16/07.0008	8 of 13	R01	18 Dec 17	SVxx-2813-2813-xx-AS2 Sensor Hole
16/07.0007	9 of 13	R01	18 Dec 17	SVxx-2813-2813-xx-AS2 Sensor Hole Short CF
16/07.0010	10 of 13	R01	18 Dec 17	SVxx-2813-2813-xx-AS2 Thread Socket short
16/07.0011	11 of 13	R01	18 Dec 17	SVxx-2813-2813-xx-AS2 Thread Socket long
16/07.0009	12 of 13	R01	18 Dec 17	SVxx-2813-2813-xx-AS2 SV-AA & SV-SA
16/11.0023	13 of 13	R01	18 Dec 17	SVxx-2813-2813-xx-AS2 Grounding

CSA Group Netherlands B.V.
Utrechseweg 310,
6812 AR, Arnhem,
Netherlands

2.2.2. IECEx SIR 15.0066

IECEx Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION
IEC Certification Scheme for Explosive Atmospheres
for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.: IECEx SIR 15.0066 issue No.:0 Certificate history:

Status: **Current**

Date of Issue: **2015-07-24** Page 1 of 3

Applicant: **Litre Meter Limited**
Hart Hill Barn
Granborough Rd
North Marston
Buckinghamshire
MK18 3RZ
United Kingdom

Electrical Apparatus: **FlowPod**
Optional accessory:

Type of Protection: **Flameproof and Dust Protection by Enclosure**

Marking: Ex db IIC T5
Ex tb IIIC 80°C
Tamb = -20°C to +75°C

Approved for issue on behalf of the IECEx Certification Body: C Ellaby

Position: Deputy Certification Manager

Signature:
(for printed version)

Date: 2015-07-24

1. This certificate and schedule may only be reproduced in full.
2. This certificate is not transferable and remains the property of the issuing body.
3. The Status and authenticity of this certificate may be verified by visiting the Official IECEx Website.

Certificate issued by:
SIRA Certification Service
CSA Group
Unit 6, Hawarden Industrial Park
Hawarden
Deeside
CH5 3US
United Kingdom

IECEx Certificate of Conformity

Certificate No.: IECEx SIR 15.0066

Date of Issue: **2015-07-24** Issue No.: **0**

Page 2 of 3

Manufacturer: **Litre Meter Limited**
Hart Hill Barn
Granborough Rd
North Marston
Buckinghamshire
MK18 3RZ
United Kingdom

Additional Manufacturing location (s):

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements. This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended.

STANDARDS:
The electrical apparatus and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards:

IEC 60079-0 : 2011 Edition: 6.0	Explosive atmospheres - Part 0: General requirements
IEC 60079-1 : 2014-06 Edition: 7.0	Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"
IEC 60079-31 : 2013 Edition: 2	Explosive atmospheres - Part 31: Equipment dust ignition protection by enclosure "t"

*This Certificate **does not** indicate compliance with electrical safety and performance requirements other than those expressly included in the Standards listed above.*

TEST & ASSESSMENT REPORTS:
A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in

Test Report:
GB/SIR/ExTR15.0203/00

Quality Assessment Report:

GB/SIR/QAR15.0004/00

IECEx Certificate of Conformity

Certificate No.: IECEx SIR 15.0066

Date of Issue: **2015-07-24** Issue No.: **0**

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Schedule

EQUIPMENT:
Equipment and systems covered by this certificate are as follows:

The FlowPod is used to measure the flow of process liquids with the measurement electronics and display housed in the stainless steel enclosure body. The sensor assembly is contained in the meter cap which is connected to the enclosure body with a stainless steel union. The enclosure body is an Ex d certified IME Type 8080SM flameproof enclosure with certification IECEx SIR 07.0111U which has two cable entries for the connection of suitably certified cable entry devices, adaptors or blank plugs. The FlowPod meets the ingress protection requirements of IP66/IP68 (2m) and is rated, 12 – 30 V, 2 W maximum.

Remote Mounting Option

The FlowPod enclosure body can be mounted remotely from the sensor with a junction box fitted in place of the FlowPod enclosure body on the meter cap. The stainless steel junction box is an Ex d certified IME Type 1080SM flameproof enclosure with certification IECEx SIR 09.0006U.

Conditions of manufacture

The Manufacturer shall comply with the following:

1. The equipment covered by this certificate incorporates previously certified devices; it is therefore the responsibility of the manufacturer to continually monitor the status of the certification associated with these devices, and the manufacturer shall inform Sira of any modifications of the devices that may impinge upon the explosion safety design of the equipment.

CONDITIONS OF CERTIFICATION: NO

3. General Instructions

The FlowPod display is housed in a Stainless Steel enclosure that can be mounted directly on to the flow meter, with integral connections, or remotely via a suitable cable and glanded cable entries.

3.1. Cables and Glands

All cables, glands and cable in conduit should be suitable for the operating temperature, which will be within the range of -20 °C to +75 °C [-4 °F to +167 °F].

To maintain ratings of the enclosure all glands or plugs must be suitably rated, i.e. NEMA 4X or IP66/IP68, and sized correctly for the cable used.

All cable entries will be either ¾" NPT or M20 thread sizes. These can be identified by the relevant code in the instrument part number on the instrument:

- FlowPod
  E1 – 2x ¾" NPT Field Entry 1x ¾" NPT Meter/Sensor Entry
  E2 – 2x M20 Field Entry 1x ¾" NPT Meter/Sensor Entry

A seal shall be installed within 50 mm of the enclosure, if not incorporated in to suitable barrier glands.

3.2. Grounding and Bonding Terminals

The Enclosure and remote Junction Box include a supplementary external grounding or bonding terminal that is identified by being either colored green and/or by being marked "⏚".

The internal grounding terminal shall be used for the equipment grounding connection and the external terminal is for a supplementary bonding connection where local codes or authorities permit or require such connection.

The Enclosure will require external bonding to the flow meter body. Wire used for this purpose must be a minimum of 4 mm² (or equivalent).

4. Safety Parameters

4.1. Temperature

- Operating Temperature Range: -20 °C up to +75 °C [-4 °F up to +165 °F]
- Storage Temperature Range: -30 °C up to +80 °C [-22 °F up to +176 °C]
- Max. Surface Temp. (T5): +75 °C [+167 °F]

4.2. Electrical Connections

- Externally Powered 4 … 20 mA loop, with HART communications
- External DC Power supply (version dependent)
- RS485 interface (version dependent): pending
- 2x Transistor outputs (external power required): pending
- Sensor signal(s) and internal DC Excitation Supply (version dependent): pending

All electrical connections will require external fuses or protection circuits, as required. No internal fuses are fitted. This equipment does not contain any batteries.

DC Power supply for all inputs: 12 - 30 V DC
Total Current consumption: 0.09 A max.
Total Power Dissipation: 2.0 W max.

5. Installation

5.1. Assembly and Disassembly

The unit will normally be supplied assembled onto a flow meter, for Direct-mount versions.

The system includes a union that can be split to separate the display from the flow meter. This is achieved by loosening the counter nut and carefully unscrew the threaded shaft of the display.

NOTE:

Care must be exercised to avoid damage to the flame-path surfaces and also the sensor wiring. Once separated slightly is will be possible to access the sensor connector inside the mounting stem. Undo the locknut of the connector and remove from the sensor assembly. The instrument can now be removed from the flow meter.

Assembly is the reverse of this procedure.

5.2. Field Connections

All sensor and Field connections are made to a terminal board mounted in the base of the enclosure. Terminals are two-part and can be removed for ease of assembly.

NOTE:

Max. wire capacity for each terminal is 1.5 mm².

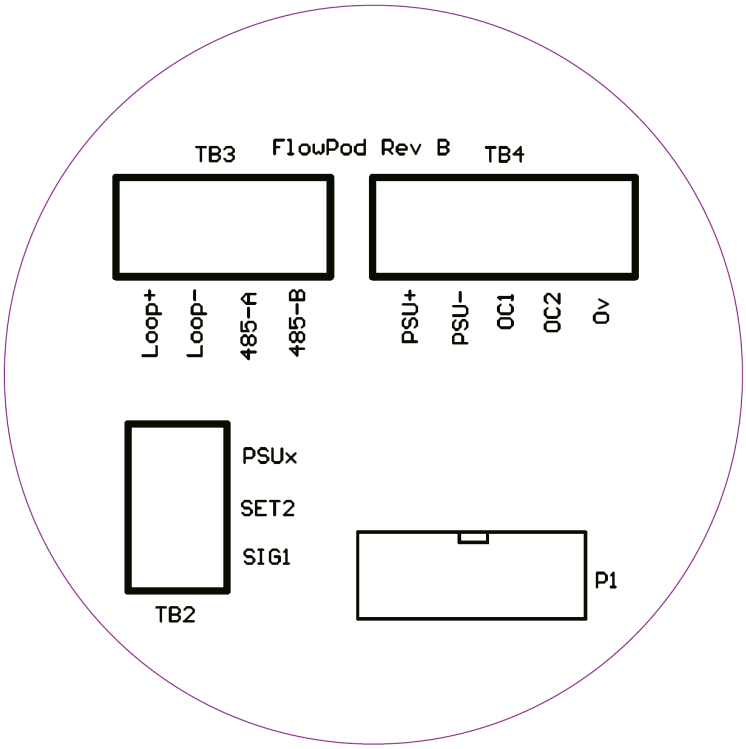
Where supplied as a system with a flow meter, or where a specific sensor type has been specified, the device will be configured for the appropriate sensor. In all other cases, please consult the supplier for details and advice BEFORE connections are made.

Field connections can be accessed by removing the front cover of the enclosure and removing the LCD module. (Note orientation of module when removing, to ensure correct re-fitting later.) The module is connected to the terminal board with a ribbon cable. If necessary, this may be disconnected from the LCD module to aid access to the terminals.

WARNING!

The LCD module is mounted on pillars with retaining springs. Care must be taken not to lose the springs when removing the LCD module. Ensure springs are re-fitted onto pillars prior to re-fitting LCD module. When refitting the LCD module, ensure it is correctly orientated and that the mounting pillars locate in the moulded holes in the plastic bezel.

5.3. Terminal Board Layout Diagram



5.4. Terminal Assignment

TB2 **Sig1** Primary Sensor +
Set2 Primary Sensor - or Secondary Sensor + (*)
PSUx Sensor Excitation or 0 V Return for Dual Reed Sensor (*)
(*) - Selected by factory-set links. Refer to calibration certificate for details.

TB3 **Loop+** 4 - 20mA Loop Input/Supply Voltage + (loop-powered version)
Loop- 4 - 20mA Loop Return/Supply Voltage - (loop-powered version)
485-A Optional RS485 Comms.
485-B Optional RS485 Comms.

TB4 **PSU+** External Power + (12 - 24 V DC) ('4-wire' version only)
PSU- External Power - (0 V DC) ('4-wire' version only)
OC1 Switch output 1
OC2 Switch output 2
0v Optional 0 V DC connection for sensors

5.5. Sensor Connections

Direct-mounted displays will include sensor wiring, which will normally be connected.

5.6. Display Orientation

The display can be mounted in many orientations, depending on the position of the flow meter.

Horizontal:
Assuming the meter is installed horizontally, with the display perpendicular, the horizontal orientation of the display can be changed simply by loosening the union in the mounting stem and rotating the display to the required position. Re-tighten the union nut.

WARNING!

Care must be exercised to ensure that the head is not rotated to far so as to twist the sensor wires unnecessarily.

Vertical:
The LCD module within the enclosure may be rotated in 90° steps:

- Remove front cover of enclosure.
- Carefully remove LCD/display module form enclosure. (CAUTION: Ensure retaining springs on mounting pillars are not lost.)
- Rotate display in required direction and refit module onto mounting pillars, ensuring that the springs are fitted and that the pillars locate into the moulded holes in the plastic bezel.
- Refit enclosure cover.

6. Maintenance and Repair

There are no user-serviceable parts inside this unit. Repairs should only be undertaken at the factory or by an approved distributor.

It may be possible to replace the LCD module; however, the calibration data will need to be transferred to the new module. Refer to the factory for assistance.

WARNING!

It is possible to damage the internal components if the unit is disassembled or assembled without the correct training.

Most configuration and calibration functions can be undertaken via HART or via a PC using RS485 communications. Some configuration settings can only be performed via a PC using either HART or RS485, and are not available via a Hand-Held Communicator or standard HART control system. Refer to the FlowPod Manual (FlowPod_M_EN_170112_E003) for details.

Some configuration can be achieved by using an external magnet. Please see section: Operating Functions in the menu in a Hazardous Area.

Typical Values

- 4 - 20 mA should limit to 24 mA; normal flow will limit to 21 mA or so. In fault condition 24 mA.
- 12 - 30 V DC
- Assuming VFF standard sensor

Power Parameters

Current – typical:

Loop current	20 mA
With backlighting	25 mA – i.e. using external power supply

90 mA at 2 V DC is the maximum current draw – limits to 2 W consumption.

Sensor excitation dependent on sensor, VFF standard sensor: 0 mA

7. Appendix

7.1. Sensor Type Selection Links

Code	Sensor Type	Signal Input	Links Fitted
.LM	LM NPN Type	Pull-up	S7, S11
.LM+	LM+ NPN Type	Pull-up	S7, S11
.MAG	Mag. Coil (Inductive)	Sine Wave	S8
.NMR	Namur Pulse	Namur	S7, S11
.NMR-LP	Namur Pulse	Namur + Debounce	S7, S11
.NPN	NPN Pulse	Pull-up	S7, S11
.NPN-LP	NPN Pulse	Pull-up + Debounce	S7, S11
.OT	Open Collector (NPN)	Pull-up	S7, S11
.PNP	PNP Voltage	Pull-down	S7, S11
.PNP-LP	PNP Voltage	Pull-down + Debounce	S7, S11
.RS	Reed Switch	Pull-up + Debounce	S9, S10
.RSX	LM Field Sensor	Pull-up + Debounce	S9, S11
.VR	Variable Resistor	Pull-up + Debounce	TBC
.X	Other Sensor	Pull-up	S7, S11

7.2. Terminal Function/Sensor Signal Selection Links

Link	TB2-1 (SIG1)	TB2-2 (SET2)	TB2-3 (PSUx)	TB4-5 (0 V DC)
None	Sensor 1 +			Optional 0 V Return
S7	Sensor 1 +	Sig. 1 Return/0 V DC		Optional 0 V Return
S8	Sensor 1 +	Sig. 1 Return (Sine)		Optional 0 V Return
S9	Sensor 1 +	Sig. 2 + (Reed)		Optional 0 V Return
S10	Sensor 1 +		Sig.1 & 2 Return (0 V)	Optional 0 V Return
S11	Sensor 1 +		Sensor 1 Excitation +V	Optional 0 V Return

Sensor Excitation Voltage Selection Links

Excitation	Links
12v	S4
15v*	S5
3v3	S1
5v	S2
8v2	S3
Int. 3v3	S6
None	None

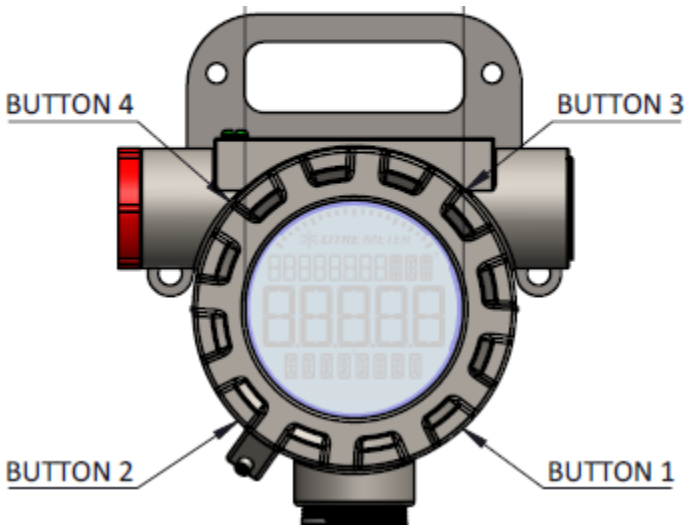
Notes
Excitation Supply only available on ‘4-wire’ version, except “Int. 3v3”, which can provide limited power for sensor.

Some sensor types not compatible with 2-wire loop-powered version, unless externally powered.

*15 V option may be factory modified for alternative voltages.

7.3. Operating Functions in the menu in a Hazardous Area

Various functions can be accessed using a magnet external to the housing and while the unit is still powered up. This enables the total to be reset (for example) without undoing the front cover.



Totalisers

Cycle through **Accumulated Total** (non-resettable), **Reverse Total**, and **Total** (default) using **Button 4**. Hold **Button 3** for 5 seconds to reset selected totaliser (display counts down during 5 seconds). Reverts to default display after approx. 5 seconds.

Alarms

Button 2 will display active alarms in order of priority, with 5-second delay between. Returns to default display after last alarm display.

Memory

Hold **Button 1** for 5 seconds to access Memory Card menu. Display shows “NO CARD” and reverts to default display if LM-MC memory card is not installed. Use **Button 3** to cycle through options. Use **Button 4** to select displayed option:

- Save Log: Saves logged data to memory card.
- Load Sys: Load calibration data to device from memory card.
- Save Sys: Save calibration data from device to memory card.
- Restore: Restores all configuration data from memory card to device.

Internal Memory

In the event of corrupted memory that cannot be recovered by HART, RS485 or External memory card, please contact factory for advice.

KEM Headquarters

Liebigstraße 5
85757 Karlsfeld
Deutschland

T. +49 8131 59391-0
F. +49 8131 92604

info@kem-kueppers.com

KEM Manufacturing Center

Wettzeller Straße 22
93444 Bad Kötzting
Deutschland

T. +49 9941 9423-0
F. +49 9941 9423-23

production@kem-kueppers.com

KEM Sales

Liebigstraße 5
85757 Karlsfeld
Deutschland

T. +49 8131 59391-100
F. +49 8131 92604

sales@kem-kueppers.com

KEM Service & Repairs

Wettzeller Straße 22
93444 Bad Kötzting
Deutschland

T. +49 9941 9423-37
F. +49 9941 9423-24

service@kem-kueppers.com

More distributors and partners can be found at:
www.kem-kueppers.com

Original KEM document: FlowPod_IO_EN_170516_E005