

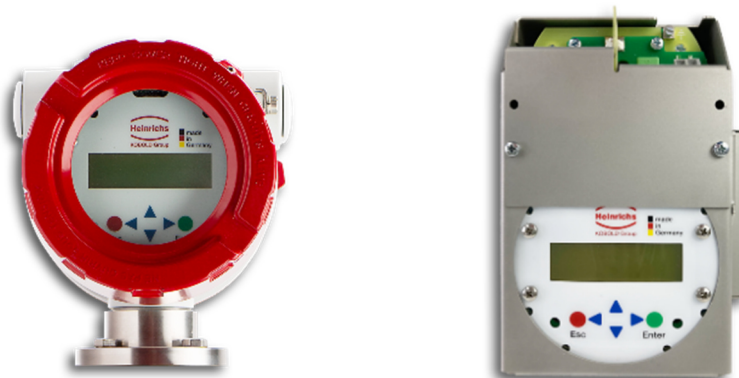
Transmitter

For Coriolis mass flow meters

UMC4

Technical information

- Field housing (compact or remote mounted)
- Rack-Mount (remote mounted)
- 4...20mA HART®
- Modbus®



Function

Reliable signal processing – transmitter for Coriolis mass flow meters

The specially developed transmitter ensures precise and stable evaluation of mass flow, density, and temperature values. It is available for field mounting as well as for control-cabinet installation, offering maximum flexibility for a wide range of application environments. The compact, robust design is also available in an explosion-proof version (ATEX/IECEx) — ideal for use in safety-critical areas such as chemical processing, oil & gas, or hydrogen technology.

The transmitter can be adapted to the user's requirements via an operating unit (BE4). While the basic configuration—e.g., calibration of the transmitter—is carried out by Heinrichs Messtechnik, further settings can be made by the customer and changed again if required.

In addition, the transmitter features an integrated data storage module (DSB) located in the UMC4 operating unit. It contains all characteristic sensor data such as the sensor constant, version/variant, serial number, etc.

Seamless integration with proven communication standards

With 4...20 mA, HART, and Modbus RTU interfaces, the transmitter can be integrated easily and reliably into existing control systems. Integrated diagnostic functions and a user-friendly interface support fast commissioning and condition-based maintenance. Whether as part of a high-pressure system or for standard process applications, this transmitter delivers robust signal quality and seamless process integration.

Compatibility

Suitable for sensors of the TM, TMU, TM-SH and HPC series.

Technical data

Mounting Options:

- Field Housing
 - Integral Version. Electrical connection via
 - M20x1,5
 - 1/2"NPT(f) via adapter
 - Remote Version. Electrical connection via
 - Cable length up to 5m: permanently connected to the transmitter, without junction box.
 - Cable length above 5m: via junction box (1/2"NPT(f), M20x1,5) or connector (Harting Han® R23).
- Panel Mount Version (RM)
Remote-mounted version with screw terminals.
Protection class IP20 (must be installed inside a minimum IP54, ATEX-certified enclosure)

Power Supply:

- 19...36 V_{DC} / 24 V_{AC} (+5%...-20%), 50/60 Hz
- 90...265 V_{AC}, 50/60 Hz
not available for the panel mount version (RM)

Materials of Construction

Field Housing

Housing:	Die-cast aluminum; with chemically resistant coating.
Junction Box:	Die-cast aluminum with chemically resistant coating.
Connection Piece:	Stainless steel 1.4301 (AISI 304)
Mounting Bracket:	2 mm stainless steel sheet (6 mm version available with marine approval)
Weight:	Field housing only (transmitter without mounting accessories): approx. 2.4kg With pipe/wall mounting and junction box: approx. 3.5kg Rack mounting version: approx. 1kg

Rack Mount Version (RM)

Housing:	Stainless steel
Base plate:	Aluminum plate
Display Foil:	Polyester

The aluminum base plate is electrically connected to the functional ground of the electronics and provides an optimal grounding potential for connection to the system grounding plate.

The housing itself does not provide an environmental protection rating and must be protected against environmental influences.

Outputs:

All outputs are galvanically isolated from each other and from ground.

Output signal damping is valid for all outputs. Programmable from 1 to 60 s. Factory default setting: 3 s.

Option A

Analog: 1x 4...20 mA, passive, with HART®
1x 4...20 mA, passive
Mass flow, Volume flow, Density, Temperature.

Binary: Passive via optocoupler
Puls width: 50 ms
Adjustable from 0,1...2000 ms

Status: Passive via optocoupler
Forward-/reverse flow, MIN/MAX flow, MIN/MAX density, MIN/MAX temperature, Alarm, second pulse output (90° phase shifted).

Option M (None of the outputs, including sensor side, are Ex)

Modbus: 1x Modbus (RTU, RS485)
1x 4...20 mA, passive (non-Ex)

Binary: Passive via optocoupler
Puls width: 50 ms
Adjustable from 0,1...2000 ms

Status: Passive via optocoupler
Forward-/reverse flow, MIN/MAX flow, MIN/MAX density, MIN/MAX temperature, Alarm, second pulse output (90° phase shifted).

Certificates and Approvals

Field Housing:

ATEX / IECEx: II (1)2G Ex d [ia Ga] IIC T4-T3 Gb
 NEPSI: Ex db [ia Ga] IIC T4/T3 Gb
 KCS: Ex d[ia] IIC T4-T3
 OIML: R 139-1, Edition (year) 2018
 Marine approval: DNV

Protection Concept of Terminal Compartment: Ex d

- Protection Concept of Signal Outputs:
- Ex [ia Ga] intrinsically safe
 - Non-intrinsically safe

Panel Mount Version (RM):

ATEX / IECEx: II (1)3G Ex ec [ia Ga] IIC T6..T3 Gc
 OIML: R 139-1, Edition (year) 2018

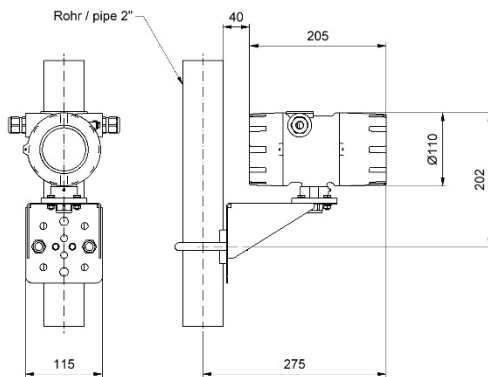
(The transmitter must be installed inside an IP54 ATEX-rated, ATEX-certified enclosure)

- Protection Concept of Signal Outputs:
- Ex [ia Ga] intrinsically safe
 - Non-intrinsically safe

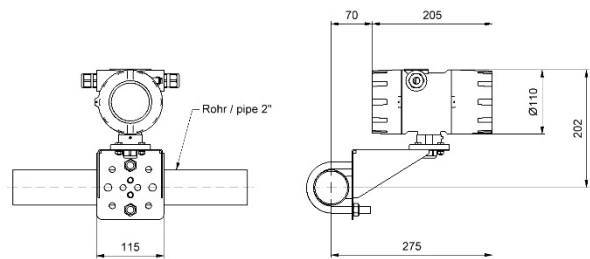
Dimensions

Field Housing

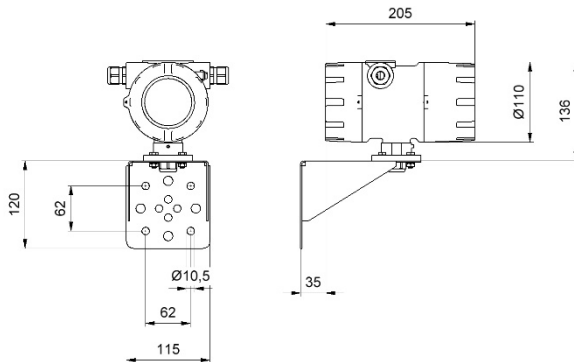
Vertical Pipe Mounting



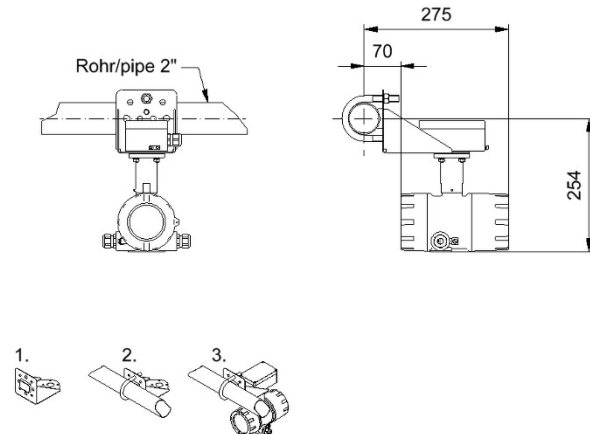
Horizontal Pipe Mounting



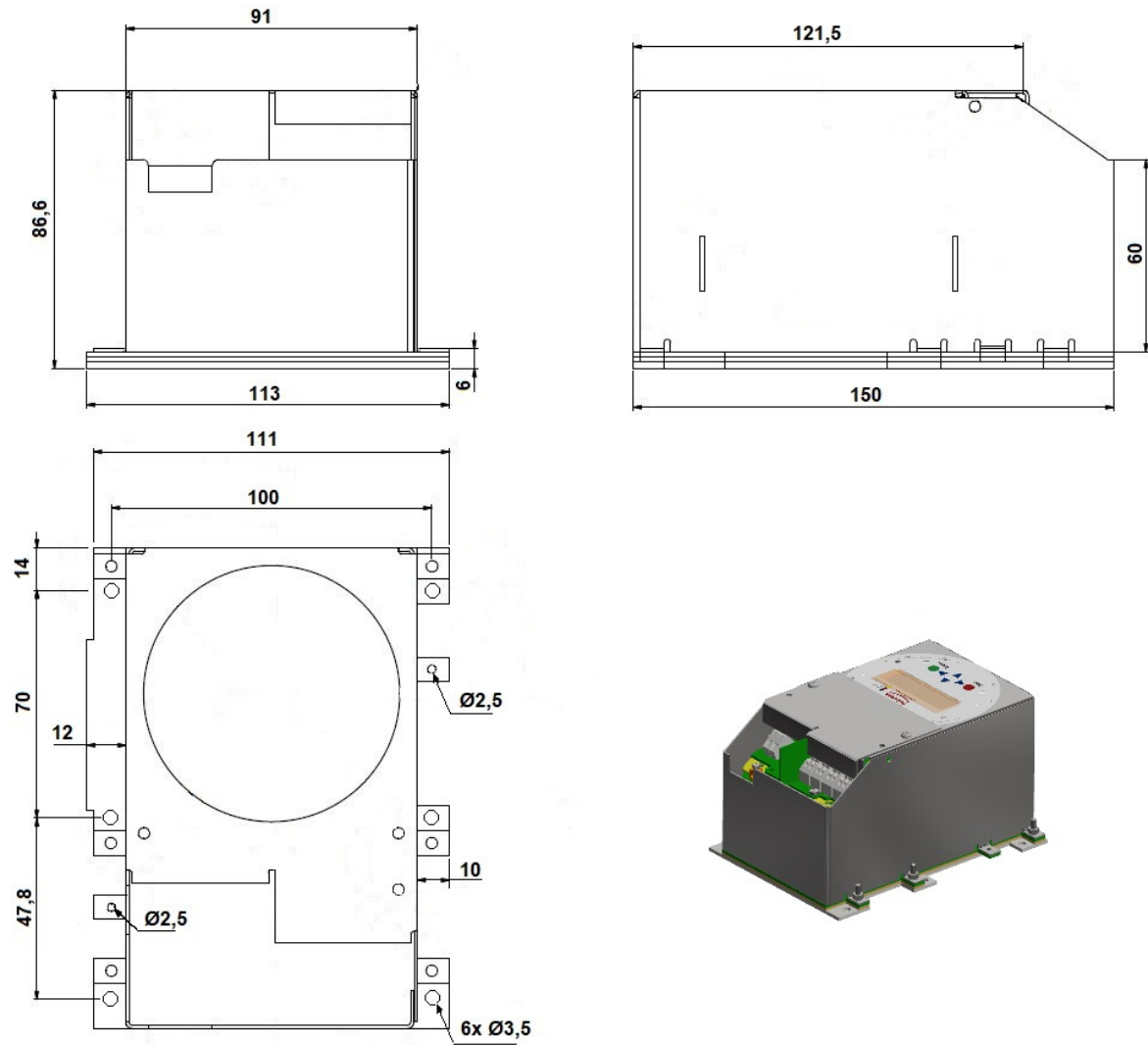
Wall Mounting



Pipe Mounting with Junction Box



Panel Mount Version (RM)



Ordering Code

Example: UMC4-B11A00H

Model Code		Description			
UMC4					
-	Mounting Option			Conduit port opening	
B	Integral mount			IP68	M20x1,5 ^{4) 6)}
E	Remote mount	Without connection box	Transmitter with 5m cable	IP68	M20x1,5 ¹⁾
D	Remote mount	Terminal connection box		IP68	M20x1,5 ¹⁾
F	Remote mount	Screw terminal	Rack mount version	IP00	Without ⁶⁾
Display / Interface board					
1	Integral within transmitter housing, for ambient temperature up to 60°C				
Power supply					
1	90...265V AC, 50/60Hz ^{3) 4)}				
2	19...36V DC, 24V AC (-20%...+5%), 50/60Hz				
Outputs					
A	Output 1:	Analog, passive, 4...20mA with HART®			
	Output 2:	Analog, passive, 4...20mA			
	Pulse output:	passive, U _m =30V DC			
	Status output:	passive, U _m =30V DC			
M	Output 1:	Modbus (RTU via RS485)	None of the outputs, including sensor side, are Ex		^{3) 5) 6)}
	Output 2:	Analog, 4...20mA			
	Pulse output:	passive, U _m =30V DC			
	Status output:	passive, U _m =30V DC			
Approval					
0	Without	non Ex		⁵⁾	
2	ATEX, IECEx, NEPSI, KCS	Terminal compartment Ex d			
3	ATEX, IECEx	Rack mount version		²⁾	
S	Ships approval version (incl. IECEx)			IP67	
Type of protection (signal output)					
0	Without Approval ⁵⁾				
1	Ex [ia Ga] intrinsically safe				
2	Non intrinsically safe				
Design					
H	Heinrichs				
K	Kobold				

- 1) Includes mounting bracket for wall and 2" pipe.
- 2) Only for option F
- 3) Not for option F
- 4) Not for OIML R139:2018 (for TMU-W)
- 5) Only for approval "0"
- 6) Not for ship approval

Accessories

Interconnecting cable – Sensor to transmitter. Wire termination.					
TMKBL-K-K-005	5m (15ft)	non Ex	TMKBL-K-K-005 Ex	5m (15ft)	Ex
TMKBL-K-K-010	10m (30ft)	non Ex	TMKBL-K-K-010 Ex	10m (30ft)	Ex
TMKBL-K-K-015	15m (50ft)	non Ex	TMKBL-K-K-015 Ex	15m (50ft)	Ex
TMKBL-K-K-020	20m (65ft)	non Ex	TMKBL-K-K-020 Ex	20m (65ft)	Ex
TMKBL-K-K-030	30m (100ft)	non Ex	TMKBL-K-K-030 Ex	30m (100ft)	Ex
TMKBL-K-K-040	40m (131ft)	non Ex	TMKBL-K-K-040 Ex	40m (131ft)	Ex
TMKBL-K-K-050	50m (164ft)	non Ex	TMKBL-K-K-050 Ex	50m (164ft)	Ex
TMKBL-K-K-XXX	Customer specified	non Ex	TMKBL-K-K-XXX Ex	Customer specified	Ex
Interconnecting cable – Sensor to transmitter. End 1: Plug in connector (Harting Han® R23). End 2: Wire termination.					
TMKBL-S-K-010	10m (30ft)	non Ex	TMKBL-S-K-010 Ex	10m (30ft)	Ex
TMKBL-S-K-015	15m (50ft)	non Ex	TMKBL-S-K-015 Ex	15m (50ft)	Ex
TMKBL-S-K-020	20m (65ft)	non Ex	TMKBL-S-K-020 Ex	20m (65ft)	Ex
TMKBL-S-K-030	30m (100ft)	non Ex	TMKBL-S-K-030 Ex	30m (100ft)	Ex
TMKBL-S-K-040	40m (131ft)	non Ex	TMKBL-S-K-040 Ex	40m (131ft)	Ex
TMKBL-S-K-050	50m (164ft)	non Ex	TMKBL-S-K-050 Ex	50m (164ft)	Ex
TMKBL-S-K-XXX	Customer specified	non Ex	TMKBL-S-K-XXX Ex	Customer specified	Ex
Interconnecting cable – Sensor to transmitter. Plug in connector (Harting Han® R23) at both ends					
TMKBL-S-S-010	10m (30ft)	non Ex	TMKBL-S-S-010 Ex	10m (30ft)	Ex
TMKBL-S-S-015	15m (50ft)	non Ex	TMKBL-S-S-015 Ex	15m (50ft)	Ex
TMKBL-S-S-020	20m (65ft)	non Ex	TMKBL-S-S-020 Ex	20m (65ft)	Ex
TMKBL-S-S-030	30m (100ft)	non Ex	TMKBL-S-S-030 Ex	30m (100ft)	Ex
TMKBL-S-S-040	40m (131ft)	non Ex	TMKBL-S-S-040 Ex	40m (131ft)	Ex
TMKBL-S-S-050	50m (164ft)	non Ex	TMKBL-S-S-050 Ex	50m (164ft)	Ex
TMKBL-S-S-XXX	Customer specified	non Ex	TMKBL-S-S-XXX Ex	Customer specified	Ex
Cable gland set					
TMKV-AUNEM20	Integral mount transmitter, non Ex, M20x1,5				
TMKV-AUNENPT	Integral mount transmitter, non Ex, ½" NPT				

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TMKV-AUDEIAM20	Integral mount transmitter, Ex de - Ex ia, M20x1,5
TMKV-AUDEIANPT	Integral mount transmitter, Ex de - Ex ia, 1/2" NPT
TMKV-AUDEEM20	Integral mount transmitter, Ex de - Ex e, M20x1,5
TMKV-AUDEENPT	Integral mount transmitter, Ex de - Ex e, 1/2" NPT
TMKV-GUNEM20	Remote mount transmitter, non Ex, M20x1,5
TMKV-GUNENPT	Remote mount transmitter, non Ex, 1/2" NPT
TMKV-GUDEIAM20	Remote mount transmitter, Ex de - Ex ia, M20x1,5
TMKV-GUDEIANPT	Remote mount transmitter, Ex de - Ex ia, 1/2" NPT
TMKV-GUDEEM20	Remote mount transmitter, Ex de - Ex e, M20x1,5
TMKV-GUDEENPT	Remote mount transmitter, Ex de - Ex e, 1/2" NPT