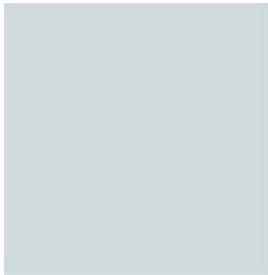
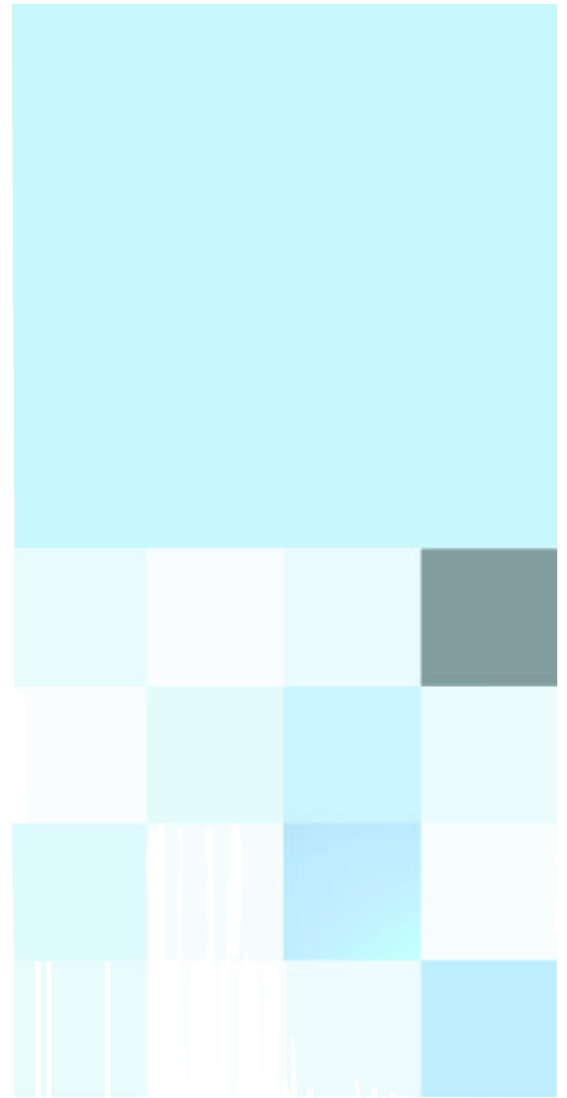
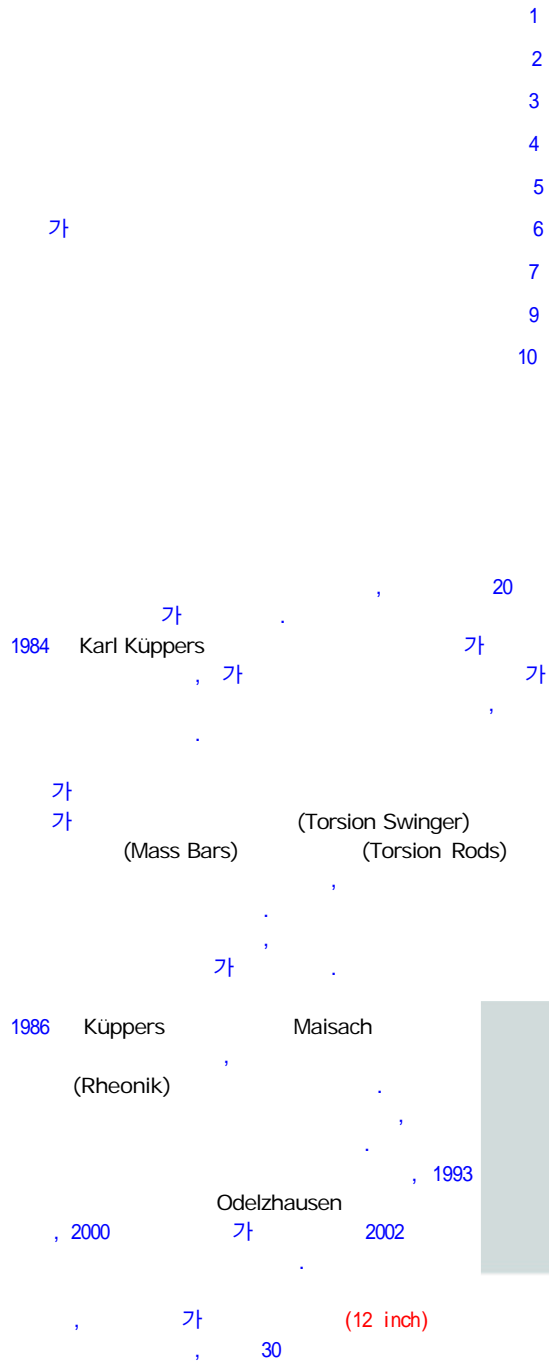


The World's Largest Range of Mass Flowmeters



ATEX **PTB**





Rheonik Messgeräte GmbH, Germany

() 1830
 Gustave Gaspard Coriolis
 " (frame)

가 , 가

가 20

가 (12") 가

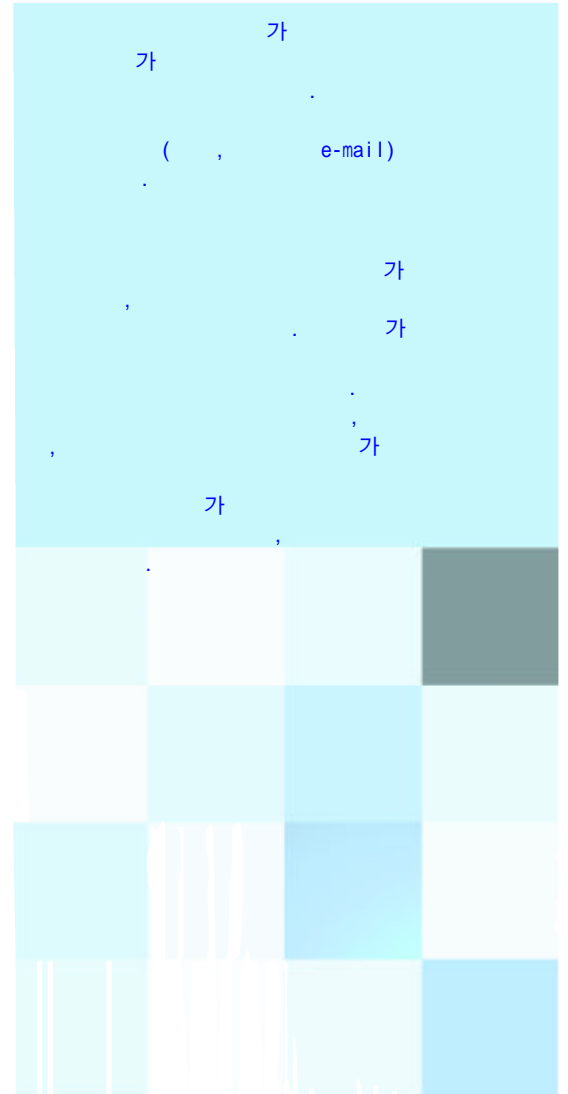
- 가 (sludges),
- 가 : 0.03 kg/hr ~ 1,500 ton/hr
- Size : 1/4" ~ 12" / DN300
- 가 : 890 bar
- 가 : -200 C ~ +400 C
- 가 (OIML R117)
- ATEX CSA

가 (gas bubbles)
 가

- Stainless steel, hastelloy, monel, tantalum

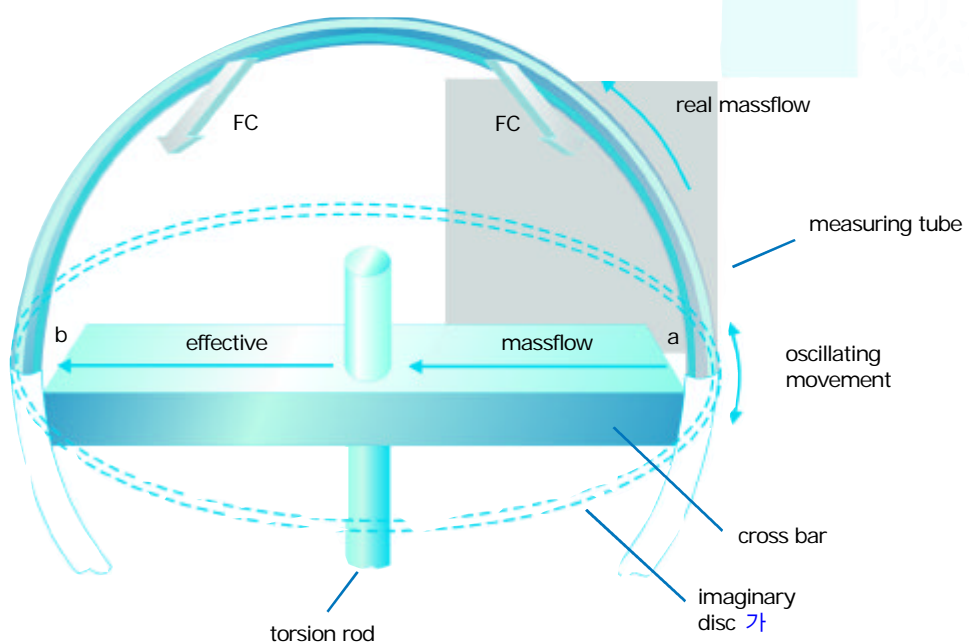
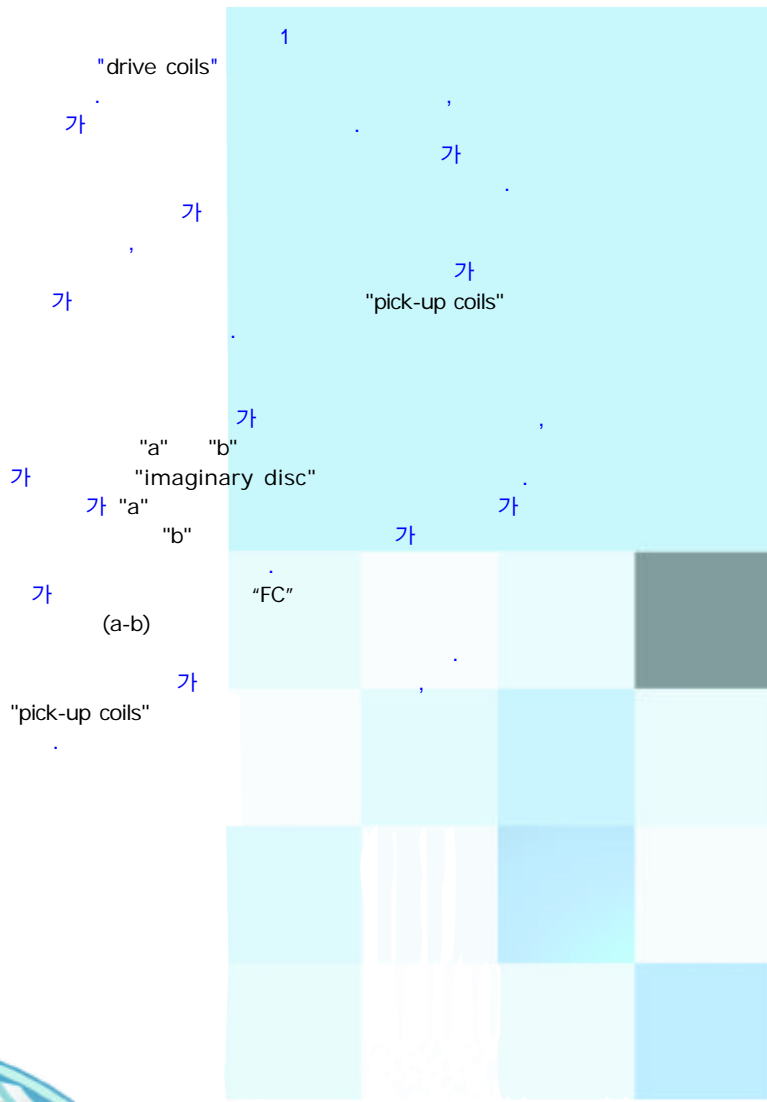
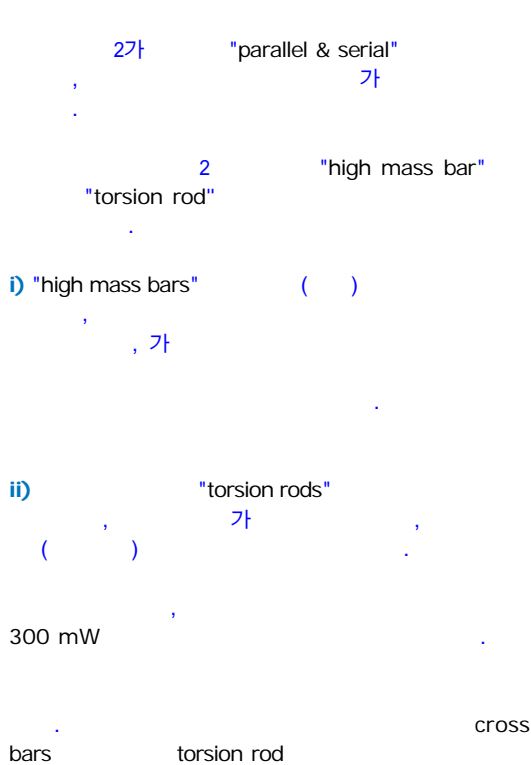


Coriolis in action at an olive oil canning factory



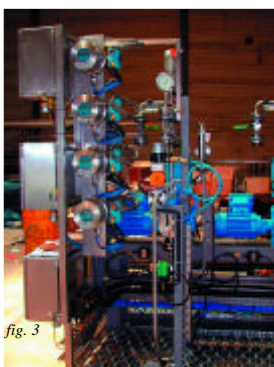
Highly accurate truck filling station with (RHM 60 FNT for custody transfer)





가 , 가
 , 가
 0.001kg/min (1 gram/min) 가
 25,000 kg/min (1500 ton/hr) 가
 -200 °C +400 C 가
 890 bar 가
 EEx de IIC (ATEX & CSA) EEx ia IIC,
 Fiscal (OIML R117)
 Hastelloy & Tantalum 가
 가 가

- -193 C (fig. 1)
- Pilot plant (fig. 2)
- CO₂
- -256 C
- (bitumen at 363° C)
- (fig. 3)
- HCL meters (fig. 4)
- Tantalum (fig. 5)



IP65
 o-ring
 (moulded)
 PT-100 ohm
 400 C

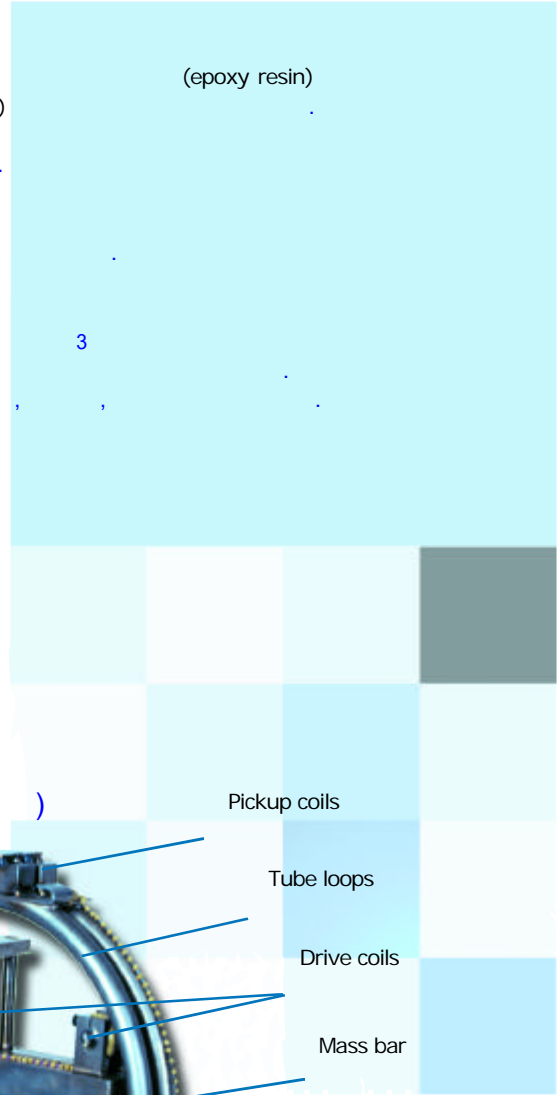
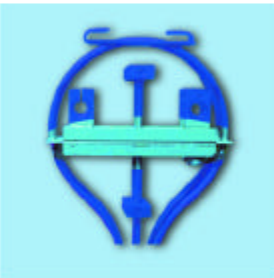
Omega Form(가)



Patented Torsion Rod(가)



Dual Cross Bar Support



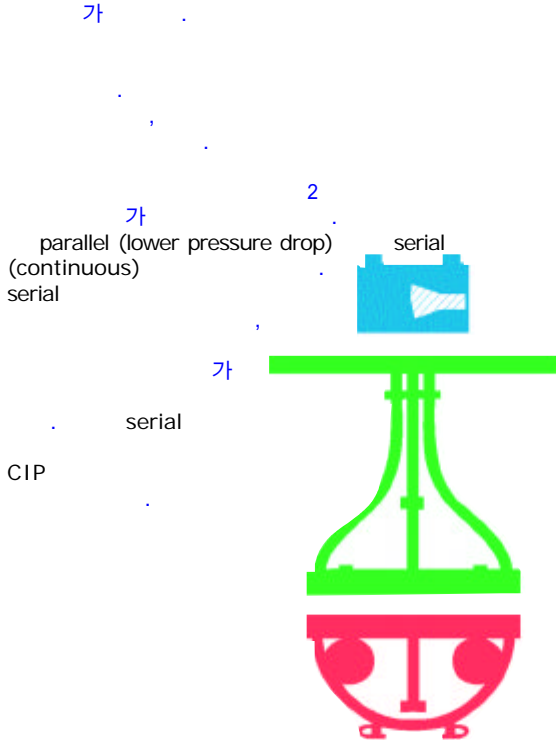
Process connection

Removal flange manifold
 (also sealless available)

Process connection block

Product Supply Tubes

Measuring Tubes



Omega Form Advantages

Increased Wall Thickness

Integral Part of Torsional Movement

Large Active Measurement Section

Density

0.03 kg/hr
+/-0.1%

General Description /Data:

Type	Typical measuring range ⁽²⁾		Nominal rate	Pressure rating ⁽⁷⁾	Standard Process Connections	
	Parallel (kg/min)	Single Path/Sanitary (kg/min)			Threaded ^(1/3)	Flanged
RHM015 ⁽⁴⁾	0,004 - 0.6 ⁽⁵⁾	0,002 - 0.3 ⁽⁵⁾	0,6	300 (400)	G ¼"	DN15 / ½"
RHM03	0,1 - 5	0,05 - 2,5	5	300 (150)	G ¼"	DN15 / ½"
RHM04	0,2 - 10	0,1 - 5	10	150	G ¼"	DN15 / ½"
RHM06	0,5 - 25	0,25 - 12,5	20	380 (190)	G ½"	DN25 / 1"
RHM08	1 - 50	0,5 - 25	50	300	G ½"	DN25 / 1"
RHM12	2 - 100	1 - 50	75	190 (290)	G ¾"	DN25 / 1"
RHM15	4 - 200	2 - 100	150	150 (300)	G ¾"	DN25 / 1"
RHM20	6 - 300	3 - 150	300	110 (225)	G 1"	DN50 / 2"
RHM30	12 - 600	6 - 300	500	150 (225)	G 1½"	DN50 / 2"
RHM40	30 - 1500	15 - 750	1250	40 (250 ⁽⁶⁾)	--	DN80 / 3"
RHM60	60 - 3000	30 - 1500	2500	40 (200 ⁽⁶⁾)	--	DN100 / 4"
RHM80	160 - 8000	80 - 4000	5000	40 (100 ⁽⁶⁾)	--	DN150 / 6"
RHM100	240 - 12000	--	10000	40	--	DN200 / 8"
RHM160	500 - 25000	--	23000	40	--	DN300 / 12"

- (1) NPT available on request
- (2) Standard meters only. Special range available on request
- (3) Standard version with PTFE sealing up to RHM30, different sizes available
- (4) Types RHM 007 and 01 are replaced by RHM 015
- (5) With fine tuning: parallel 0,002 - 0,6 [kg/min] (option on request) sanitary 0,001 - 0,3 [kg/min]
- (6) Max. pressure rating of tube (fitting to be clarified)
- (7) Pressure rating in (brackets) refers to heavy duty or special versions

For the selection of a suitable meter size, considering the relevant pressure drop, and other process conditions, please contact us.

Accuracy :

Range 1:20	±0,2% of rate and better
Range 1:50	±0,5% of rate and better
Repeatability	better than ±0,1% of rate
Gold Line models are fine tuned for your application	
Range 1:5	±0,10% of rate and better*
Range 1:10	±0,15% of rate and better*
Repeatability	better than 0,05% of rate*

*Only selected models available as Gold Line - consult factory

Accuracy, Repeatability (Reference conditions (incl. zero drift): H₂O, 1 bar, 20°C - Range is turn down from nominal flow rate). Special calibration and fine tuning with enhanced accuracy in customer flow range is possible - including low flow range.


General Technical Specifications :

Pressure rating	According to above table (for normal temperature version) Please note: pressure ratings decrease with higher temperature rating Higher pressure ratings are available on request (up to 1000 bar)		
Temperature range	RHM type	Temp. in °C	Temp. class (for EEX ia IIC version)
Normal	NT	-20 to + 120	T4 - T6
Extended 1	ET1	-200 to + 50	T6 (Ex-approval for T > - 45 °C only)
Extended 2	ET2	-45 to +210	T2 - T3
High	HT	0 to + 350	T1 - T3
Very high	VHT	0 to +400	No EEX/only selected sizes
Materials of wetted	Standard 1.4571 (316Ti) / 1.4539 (904L), Hastelloy, Tantalum, Monel, Inconel		


Above data table covers Rheonik standard program only.
All meters carry CSA and ATEX hazardous area approvals.

Please specify your special requirements.
All standard versions comply with new European pressure directive PED


General Description:




RHE 01.03
 Plastic housing for wall mounting
 Protection class: IP54
 Power supply: 230/115 VAC, 24 VDC
 Dimensions: 190x190x140mm




RHE 06/06F+ (ATEX, approved)
 Alum. housing painted, for wall mounting
 Protection class: IP64
 Power supply: 230/115 VAC
 Dimensions: 200x200x110mm
 RHE06F has PTB/OIML custody transfer approval




RHE 07 (ATEX, CSA optional)
 Rack version (1/3 19" - 28TE 3HE)
 Protection class: IP20
 Power supply: 230/115 VAC, 24 VDC
 Dimensions: 142x128x250mm
 RHE07C has NMI/OIML custody transfer approval



RHE 08 (ATEX, CSA optional)
 Alum. housing painted, for wall mounting
 Protection class: IP64
 Power supply: 230/115 VAC, 24 VDC
 Dimensions: 207x148x302mm



RHE 11 (ATEX, CSA optional)⁽¹⁾
 S.S. housing for wall, hook or meter mounting
 Protection class: IP65
 Power supply: 230/115 VAC, 24 VDC
 Dimensions: 244x225x200mm



RHE 12 (ATEX, CSA optional)⁽²⁾
 S.S. housing for wall, hook or meter mounting
 Pressure safe painted aluminium housing
 Protection class: IP66
 Power supply: 24 VDC
 Dimensions: dia. 115mm
 height 200mm
 LCD display (servicing via 2 photo sensors)

(1) CSA by mid 2003

(2) CSA by end 2003

LED
 60 msec
 RHE 06+ 90 2 x

low flow cutoff, response time, in/outputs, units
 (open collector photocoupler)

RHE 07/08/11

Programming: Free programmable via 3 photo sensors, pushbuttons, µP based remote unit
Analogue outputs: 2 programmable 0/4-20 mA (flow, density, temperature, volume) Galvanically isolated, max. load < 1000 Ohm, Accuracy + 0,05% of full scale
Digital 1 frequency / pulse output (0-10000Hz, max. 30V/50mA), 3 status outputs (limit, error/alarm, flow direction etc.)
Digital inputs: 2 status inputs (zeroing, hold totalizer, tot. reset, quit error/alarm)
RS232/422/485: Serial interface optional. For details see individual datasheet.
LCD display: 2 lines, each 16 characters (character height 8mm)

RHE 12

Programming: Via 2 photo sensors behind the glass cover
Analogue outputs: 1 programmable 0/4-20 mA output, galvanically isolated (intrinsically safe optional)
Digital outputs: 1 frequency / pulse output (intrinsically safe optional) Error / Alarm condition output (22mA) HART optional, RS232 / 485 on request
LCD display: 2 lines, each 16 characters (character height 8mm)

RHE08/11/12 are available with HART functionality

General Data for all Remote Units:

Temperature range:	-40 to 60°C	RHE 06, RHE 06F+, RHE07 and RHE 08 remote units have to be installed outside of hazardous area.
Power consumption:	< 15 Watt / RHE12 < 5 Watt	RHM can be installed in hazardous area ATEX de [ia] IIC RHE 11/12 can be installed in the hazardous area

CLIENT	MEDIA	CLIENT	MEDIA
AMEC / BP MAGNUS PROJECT	HYDROCARBON	JACOBS MONTELL / SHELL	CATALYST SLURRY
AMEC/BP E4 PROJECT/FOXBORO	WATER	JORDAN KENT METERING SYSTEM	HYDROCARBON COND.
AMERADA HESS	LNG	KINGSPAN IRELAND	WATER & HCL
BAYER	TEST	KINGSPAN UK	SULFURIC ACID 58%, PHENOLIC RESIN
BP / PALPRO	SCALE INHIBITOR, H ₂ S SCAVANGER CORROSION INHIBITOR	KVAERNER / SINOPEC INT	ACETIC ACID, PARAXYLENE SLURRY
BRAN & LUEBBE UK	SCALE INHIBITOR WATER BREAKER	MARATHON OIL	METHANOL
CANNON VIKING	HCL SOLUTION POLYOL MIX	NRC BOTT	FREON 22
CELOTEX	POLYMER	OMS	ISOCYANATE POLYOL
CELTIC	CATALYST	PHARMACIA & UPJOHN, CORK	DICHLOROMETHANE, ACETONE, DMSO, ETHO-ORTHO-FORMATE, HYDROGEN BROMIDE, ACETONE, DMSO
DALLING AUTOMATION	ISOCYANATE, POLYOL	PHILLIPS PETROLEUM / JADE	SCALE INHIBITOR METHANOL
DEVRO-TEEPAK	VEGETABLE DYE, GLUTERALDEHYDE	PILKINGTON TECHNOLOGY	WATER & ORG SOLVANT
DOW CORNING	HYDROGEN, DPR (LIQUID) CHLOROSILANES, WATER SILOXANE HC1	SHELL OFFSHORE	CONDENSATE
DOW KVAERNER	20% HCL/WATER	SLP	MONOETHYLENE GLYCOL
ENICHEM	GAC13L	TARGOR	ALUMINIUM TRIETHYL
EUROPEAN VYNLS CORP	HCL/VCM/EDC, ORGANICS CRUDE EDC	TOTAL FINA ELF	BITUMEN
FIRESTONE	POLYOL, ISOCYANATE	UNI F. BEECHAMS	CO ₂ SUPERCRITICA, BROMINE, LIQUID COOLANT, NITROGEN, HCL 20%
GENERAL ELECTRIC	NATURAL GAS		
GREAT LAKES CHEMICALS	BROMINE		
IMPERIAL COLLEGE, LONDON	LIQUID NITROGEN, LIQUID PROPANE		



Contact:	<input type="text"/>	Qty. of meters:	<input type="text"/>
Company:	<input type="text"/>	Delivery date:	<input type="text"/>
End user/location:	<input type="text"/>	Telephone no.:	<input type="text"/>
Address:	<input type="text"/>	Email address:	<input type="text"/>

Application Data

Tag No:	<input type="checkbox"/> Liquid	<input type="checkbox"/> Gas	
Process medium:	<input type="text"/>		
	Minimum	Normal	Maximum
Flow rate <input type="checkbox"/> kg/min or <input type="checkbox"/> lbs/min			
Viscosity at process temperature <input type="checkbox"/> cP or <input type="checkbox"/> cSt			
Operating pressure <input type="checkbox"/> bar or <input type="checkbox"/> psi			
Operating density <input type="checkbox"/> kg/m ³ or <input type="checkbox"/> lbs/gal			
Process temperature <input type="checkbox"/> °C or <input type="checkbox"/> °F			
Max. allowable pressure drop <input type="checkbox"/> bar or <input type="checkbox"/> psi			

FLOW BY Centrifugal pump _____ Tr/min Piston pump _____ Strokes/min Gravimetric Others

(If not listed below, please specify) _____

Please specify type of industry i.e. plastic industries _____

Please specify purpose of measurement

- General flow control
 Filling process
 Custody transfer
 Flow detection/flow switch
 Dosing
 Else _____

Flow Sensor Requirements

- Process connection Flange/Threads _____ Others _____
 Material of wetted parts* **1.4571/316 Ti** (1.4539/904L) Hastelloy C22 Tantalum
*please note that RHEONIK takes no responsibility for the choice of material
 Others _____
 Construction design Parallel tubes (std) Single path Sanitary
 Area classification Safe Hazardous
 Distance sensor-transmitter _____ Meters/Feet Transmitter in safe area? Yes No

Transmitter Requirements

- Supply voltage 230 VAC +/- 10% 115 VAC +/- 10% 24 VDC +/- 10%
 Output/interfaces 4/20 mA Impulse (1-10 kHz) HART (not for RHE 07)
 RS 232 RS 422/485 (not for RHE 11)
 Display/totaliser Yes No
 Mounting Wall mount Panel mount Others _____

Comments _____

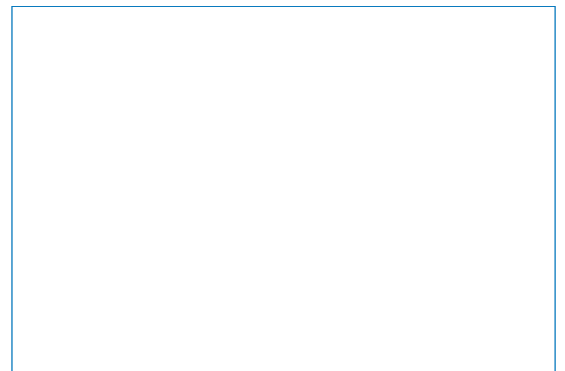
*The world's
largest range
of mass flowmeters*

*No other design
offers such versatility
and rangeability*

*Worldwide
distribution
and service*



Rheonik Messgeräte Korea : 02-3664-5015



Rheonik Messgeräte GmbH

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