Solartron® 7829 Visconic industrial viscosity transmitter

on line real time viscosity measurement

- On-line real time viscosity measurement
- Hazardous area approvals
- 4-20mA viscosity output
- Minimal maintenance required
- Field proven
- Better than 1% accuracy

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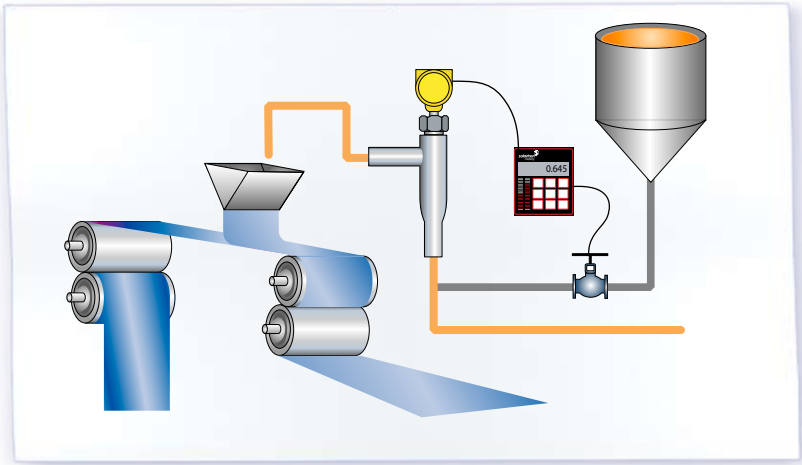
Visconic: on-line real time viscosity measurement
with integral plug and play electronics

- 4-20mA output of viscosity
- MODBUS output of all parameters including density and base density
- Dynamic and Kinematic Viscosity
- Factory calibrated for plug and play operation
- No moving parts, virtually maintenance free
- Special equation functions including solutions for °Brix, °Twaddell, Baumé % solids etc.

The 7829 Visconic is a digital viscosity transmitter with a 4-20mA output of viscosity.
All calibration data and calculations are performed in the transmitter without the need for remote electronics. The unit is supplied fully set up for immediate "plug and play".
The Visconic transmitter is designed for on line, continuous real time measurement and as such can be installed directly into tanks or pipelines or it may be installed in slip streams (by-passes). The 7829 Visconic digital viscosity transmitter is now available for top mounting in open or closed tanks as a long stem version with stem lengths of up to 4000mm.
All versions are available with ATEX certification for hazardous area operation.
An on line device, Visconic measures the viscosity at real process conditions. Mobrey Measurement vibrating fork transmitters, including the 7829 Visconic, are unique in successfully combining density and viscosity measurements in a single device. This provides true dynamic and kinematic viscosity measurement in real time with unparalleled accuracy.

Applications



The Visconic transmitter is one of a family of new vibrating fork transmitters, already tried and tested in demanding applications which have been developed specifically for what Mobrey Measurement terms “behavioural” applications. These are applications where the viscosity is measured at the process temperature in order to control the behaviour of the fluid.
In these applications the viscosity of the fluid is a measure of how it will behave during the process of spraying, atomising, transfer coating or dipping. The more viscous the fluid, the larger the drop size when sprayed or atomised, the less likely the fluid is to run when applied to a surface and the thicker the resultant coating.
An increase or reduction in viscosity away from the target or optimum value is corrected by modulating temperature; by adding solvents or thickeners, or by adding viscosity modifiers.

Typical applications

- HFO pre-heater control to burners where heating is used to maintain a constant viscosity at the burner nozzle
- Crude oil product identification for drag reducer addition control
- Evaporator control in fish oil processing
- Cellulose acetate coating of cellophane film for surface finish quality control
- Vinyl coating of wallpaper where solvent addition is controlled
- Solvent addition to lacquers used to coat cans, headlight assemblies or PCBs.
- Heating control of bitumen emulsions during road surface dressing operations.
- “Red / Green / Blue” coating of TV tubes with a flourescent layer
- Interface detection of chemical batch production
- Turbine flowmeter correction

Specification

Sensor

Type	Vibrating fork sensor piezodrive (PLL) for digital density and viscosity measurement
Materials	316st. st, Monel 400 or Hastelloy C22,
Tine finish	standard shotblasted, electropolished or PTFE laminated*
Temperature Sensor (integral)	PT100 IEC 60751 Class B, DIN 43760 Class B

**PTFE is applied only to the tines for its anti-stick properties, not for corrosion protection.*

Process connections

See order code overleaf

Performance

Viscosity calibrated ranges	0.5 - 100cP, 10 to 1000cP
Viscosity accuracy	±1%span (±0.2cP in 0-10cP range)
Viscosity repeatability	±0.5% of reading
Density calibrated range	600 to 1250kg/m3 / 38 to 78 lb/ft^3
Density accuracy	±1.0kg/m^3 / ±0.0624 lb/ft^3
Density repeatability:	±0.1kg/m^3 / ±0.00624 lb/ft^3
Temperature range Process** Ambient	 -50°C to +200°C / -60°F to +392°F -40°C to +85°C / -40°F to +185°F
Pressure range***	207bar / 3000psi (max working)

** NOTE: Where ATEX is required the process temperature is further limited for long stem variants to -40°C to +150°C / -4°F to +302°F

*** Long stem variant limited to 100 bar / 1450 psi (max working)

Electronics

Power supply	20 to 28Vdc
Analog output	4-20mA, isolated (not self powered) Power supply: 15-28V dc Accuracy: ±0.1%reading, ±0.05%FSD @20°C (68°F) Repeatability: ±0.05%FSD over range -40°C to +85°C (-40°F to +185°F)
Communications	RS485 Interface: 9600 baud MODBUS (Modicon) RTU RS485/232 converter available

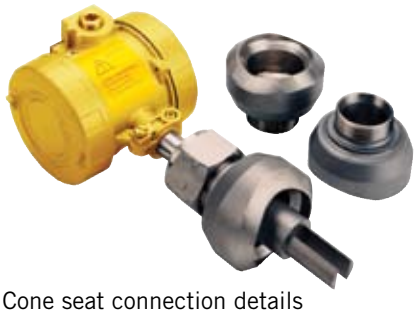
Approvals

Enclosure	IP66
ATEX	II 2G EEx d IIC T4
CSA	Class 1 Div. 1 Group C & D T4
EMC	EN61326

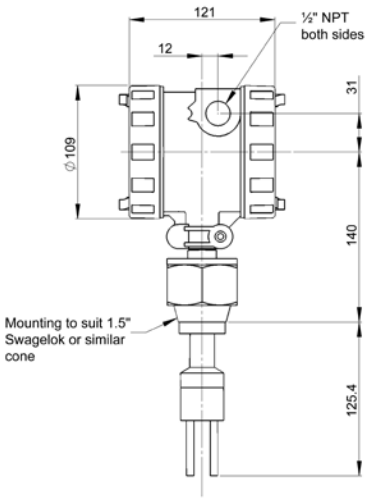
Accessories

- A range of installation accessories are available for tank, pipe or slip stream (by-pass) installation.
- For pipe sizes 1" (25mm) to 3" (80mm) flow through chambers are available.
- For pipe diameters 4" (100mm) and larger, "Weldolets" are available.
- For full details of installation accessories, refer to bulletin IP7005

Flow through chambers



Cone seat connection details



Dimensions

Ordering information for standard forks

7829	Visconic viscosity transmitter		
Code	**Materials of construction**		
A	316 Stainless steel	316 Stainless steel tines	Standard finish
E	Hastelloy C22	Hastelloy C22 tines	Standard finish
H	Monel 400	Monel 400 tines	Standard finish
V	304 Stainless steel	304 Stainless steel tines	Standard finish
T	Titanium	Titanium tines	Standard finish
U	Hastelloy B2	Hastelloy B2 tines	Standard finish
C	316 Stainless steel	316 Stainless steel tines	Electro-polished
D	Hastelloy C22	Hastelloy C22 tines	Electro-polished
F	316 Stainless steel	316 Stainless steel tines	PTFE laminated tines
J	Monel 400	Monel 400 tines	Electro-polished tines
G	Hastelloy C22	Hastelloy C22 tines	PTFE laminated tines
L	Monel 400	Monel 400 tines	PTFE laminated tines
Z	Special: Use this letter code during quotation request.		

Code	Amplifier system
C	ADVanced: 4-20mA output ATEX II 2 G EEX d IIC T4 (Std.Fork,<200°C / 392°F)
D	ADVanced: 4-20mA output CSA Class 1 Div 1 Groups C&D (Std.Fork,<200°C /392°F)

Code	Amplifier housing
A	Alloy
Z	Special: Use this letter code during quote request. To order, a designated letter is required or a variant no.

Code	Process connections
A	2" ANSI 150 RF
B	2" ANSI 300 RF
G	50 mm DIN 2527 RF DN 50/PN 40
H	50 mm DIN 2527 RF DN 50/PN 100
R	50 mm DIN 2527 RF DN 50/PN 16
J	2" Ladish Triclamp (Hygienic)
K	3" Ladish Triclamp (Hygienic)
L	2" IDF (Hygienic)
M	3" IDF (Hygienic)
N	1.5" Cone Seat Compression Fitting
Z	Special: Use this letter code during quotation request.

Code	Stem length (nominal length)
A	0 mm : no stem extension and with standard spigot

Code	Default configuration (Amplifier outputs)
H	0-25cst
J	0-50cst
E	0-100cst
K	0-500cst
F	0-1000cst
Z	Special: Use this letter for any special configuration.

Code	Calibration type
B	0.5 to 100cP
F	10-1000cP
Z	Special: Use this letter for any special configuration.

Code	Calibration boundary
A	Free stream
B	2" schedule 40 boundary
C	3" schedule 40 boundary
D	2" schedule 80 boundary
E	3" schedule 80 boundary
F	2" Hygienic
G	3" Hygienic
Z	Special:Use this letter for any special configuration

Code	Reserved
B	Default

Code	Traceability
A	None
X	Certificates of material traceability

7829	A	C	A	A	A	H	B	A	B	A Typical ordering info

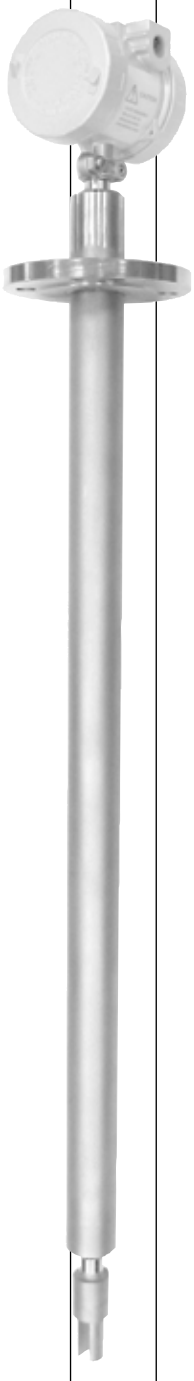
Ordering information for long stem forks

7829	Long stem Visconic viscosity transmitter

Code	Materials of construction
A	316 Stainless Steel, 316 Stainless steel tines, standard finish
C	316 Stainless Steel, 316 stainless steel tines, Electro-polished
F	316 stainless steel, 316 stainless steel tines, PTFE laminated tines
Z	Special: Use this letter code during quotation request

Code	Amplifier system
W	Safe Area: Advanced 4-20mA (long stem, <200°C / 392°F)
K	Advanced: 4-20mA output ATEX II 1/2 G EEX d IIC T4 (<150°C / 302°F)
Z	Special: Use this letter code during quotation request

Code	Amplifier housing
A	Alloy (cast)
C	Stainless Steel



Code	Process connections
A	2" ANSI 150 RF
B	2" ANSI 300 RF
C	2" ANSI 600 RF
G	50 mm DIN 2527 DN 50/PN 40
H	50 mm DIN 2527 RF DN 50/PN 100
R	50 mm DIN 2527 DN 50/PN 16
T	No Connectors (open tank) - safe area only
Z	Special: Use this letter code during quotation request

Code	Stem length (nominal length)
C	500 mm / 20" with removable transit cover
D	750 mm / 30" with removable transit cover
E	1000 mm / 40" with removable transit cover
F	1500 mm / 60" with removable transit cover
G	2000 mm / 80" with removable transit cover
H	3000 mm /120" with removable transit cover
J	4000 mm /160" with removable transit cover
Z	Special: Use this letter code during quotation request

Code	Default configuration (Amplifier outputs)
H	0-25cSt
J	0-50cSt
E	0-100cSt
K	0-500cSt
F	0-1000cSt
Z	Special: Use this letter for any special configuration

Code	Calibration type
B	0.5 to 100cP
F	10-1000cP
Z	Special: Use this letter for any special configuration

Code	Calibration boundary
A	Free Stream
Z	Special: Use this letter for special configuration

Code	Reserved
B	Default

Code	Traceability
A	None
X	Certs. of material traceability

7829	A	W	A	A	C	H	B	A	B	A	Typical ordering information

Configuration

Windows based ADView from Mobrey Measurement allows the Visconic transmitter to be configured using the RS485 communications if desired. For example, the user can change the span and bias of the 4-20mA output, or change the output from dynamic to kinematic viscosity.

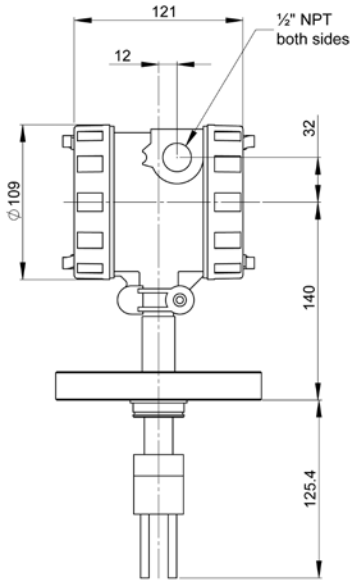
ADView also provides full diagnostic access to all measured and calculated parameters, and allows the storage of the unique sensor configuration to disc.

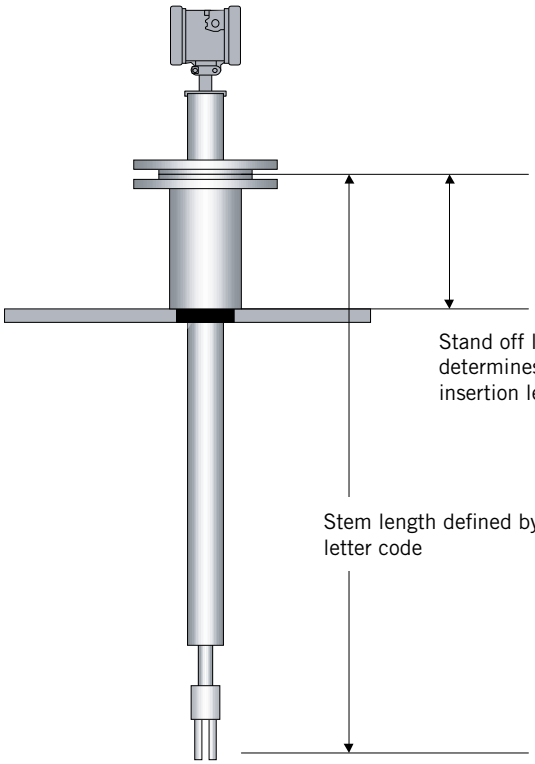
Data logging of parameters is also possible including logging several Visconic transmitters linked together by multi-drop communications.

Download from www.solartronmobrey.com/downloads

Dimensions

Flange connection details





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