

process measurement solutions



7829 Visconic industrial viscosity transmitter on line real time viscosity measurement

IP7001

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



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 Solartron Mobrey 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.

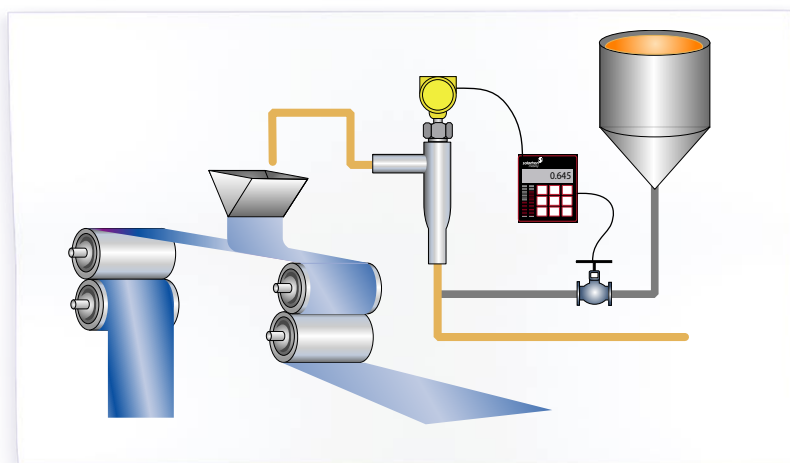
An on line device, Visconic measures the viscosity at real process conditions.

Solartron Mobrey 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

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 fluorescent layer
- ▶ Interface detection of chemical batch production
- ▶ Turbine flowmeter correction



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 Solartron Mobrey 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.

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/m ³ / 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**	-50°C to +200°C / -60°F to +392°F
Ambient	-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

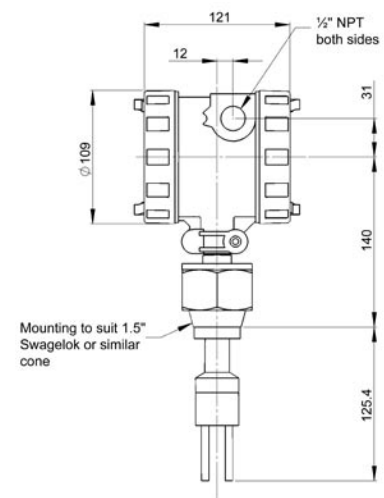
- ▶ A range of installation accessories are available for tank, pipe or slip stream (by-pass) installation.
- ▶ For pipe sizes 1" (25mm) to 3" (80mm) flow through chambers are available.
- ▶ For pipe diameters 4" (100mm) and larger, "Weldolets" or pipe nipples are available.
- ▶ For full details of installation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



Flow through chambers



Cone seat connection details



Dimensions



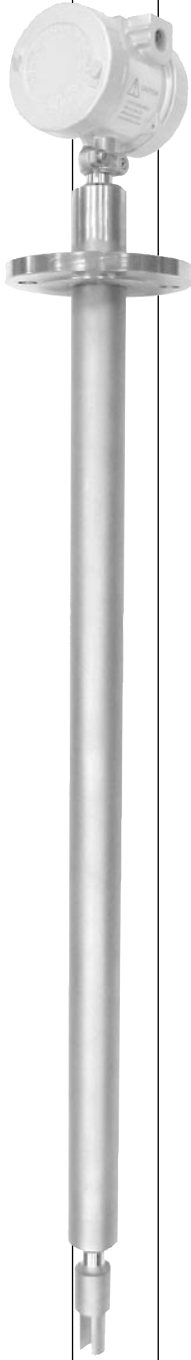
Ordering information for standard forks

7829	Visconic viscosity transmitter		
	Code	Materials of construction	
	A	316 Stainless steel	316 Stainless steel tines
	E	Hastelloy C22	Hastelloy C22 tines
	H	Monel 400	Monel 400 tines
	V	304 Stainless steel	304 Stainless steel tines
	T	Titanium	Titanium tines
	U	Hastelloy B2	Hastelloy B2 tines
	C	316 Stainless steel	316 Stainless steel tines
	D	Hastelloy C22	Hastelloy C22 tines
	F	316 Stainless steel	316 Stainless steel tines
	J	Monel 400	Monel 400 tines
	G	Hastelloy C22	Hastelloy C22 tines
	L	Monel 400	Monel 400 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	A
	H	B	A
	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
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Configuration



Windows based ADView from Solartron Mobrey 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.

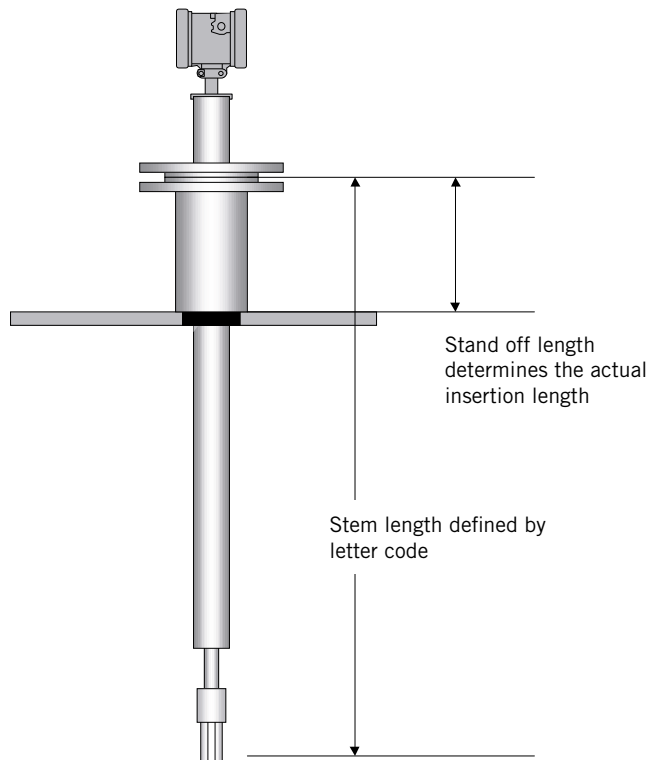
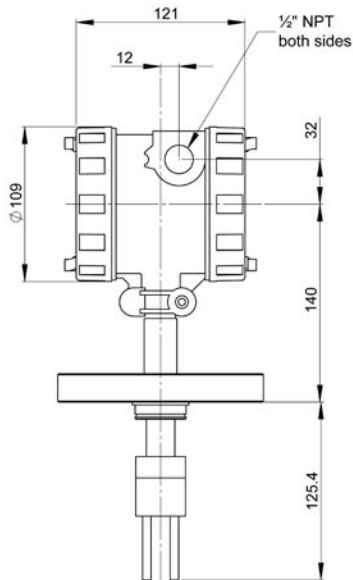
ADView also provides full diagnostic access to all measured and calculated parameters, and allows the storage of the unique sensor configuration to disc.

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



Solartron Mobrey Limited
158 Edinburgh Avenue Slough
Berks UK SL1 4UE
Tel: 01753 756600
Fax: 01753 823589
e-mail: sales@solartron.com
www.solartronmobrey.com

Solartron Mobrey
19408 ParkRow, Suite 320,
Houston, TX 77084 USA
Tel: 281 398 7890
Fax: 281 398 7891
e-mail: sales@solartron.com
www.solartronusa.com

**solartron
mobrey**
a Roxboro Group Company

Solartron Mobrey GmbH	Deutschland	tel: 0211/99 808-0
Solartron Mobrey Ltd	China	tel: 021 6232 7972
Solartron Mobrey sp z o o	Polska	tel: 022 871 7865
Solartron Mobrey AB	Sverige	tel: 08-725 01 00
Solartron Mobrey SA	France	tel: 01 30 17 40 80
Solartron Mobrey SA-NV	Belgium	tel: 02/465 3879
Solartron Mobrey	USA	tel: (281) 398 7890



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