

Aqua4Trans

4 Wire Dual Channel/Multiparameter Transmitter

Versatile Controller for pH, Redox, Conductivity, Chlorine, Chlorine Dioxide, Turbidity, TSS and DO



Aqua4Trans 4 Wire Dual Channel/ Multiparameter Transmitter

The Forbes Marshall Aqua4Trans, 4 wire transmitter series is a versatile solution to measure various analytical parameters with state-of-the-art online water and process monitoring.

The transmitter series offers single as well as dual channel measurement for pH, conductivity, ORP, TDS, chlorine, chlorine dioxide, turbidity, TSS and temperature with flexible combinations and is suitable for field as well as panel mounting.

The Aqua4Trans is feature-packed, covering the needs of almost every industrial process under water chemistry and makes this a new age solution for online monitoring.

Features

Single, dual and multi parameter sensor input platform

Two analogue outputs per channel, configured as linear, or as a mathematical function

Fully programmable, calculated measurements between channels, comparator, etc.

6 relay contacts as optional, programmable between the channels, set as alarm, error

Extendable architecture, add-on cards for digital communication (MODBUS)

Wash mode provided with wash timer

Polycarbonate, IP66 enclosure, suitable for field/pipe, panel, wall as common version

Backlit display with flexibility of multichannel viewing options

Applications

High purity applications, pure and ultra pure water analysis

Water and wastewater effluents analysis

Raw and municipal water treatment applications

Rugged industrial environments

Pollution monitoring

Process analysis and control applications

Steam production

Condensate return

Boiler blowdown

Cooling towers

Leak detection (heat exchangers)

Demineralisers

Reverse osmosis

Concentration (regenerations)

Waste streams

Desalination

Drinking water treatment

Industrial wastewater

Cooling water

Irrigation, river water

RO plants

Specifications	
Display	Backlit display dot matrix (128 x 64 dot matrix liquid crystal display) Programmable for multichannel display of measured value, temperature, units and error messages
Keypad	Tactical 4 keys for menu, up/down scroll, enter, menu interface
Input	Analogue Sensors; pH, ORP, conductivity ./ TDS, chlorine, chlorine dioxide, turbidity, TSS, 4-20 mA
Output	Dual current output per channel, 4-20 mA DC, galvanically isolated, max load 750Ω Option of linear, bilinear and logarithmic
Maths functions Note - X, Y : channel 1 or 2	% accepted : $X/Y \times 100$ [%] % rejection : $(1-X/Y) \times 100$ [%] Difference : X-Y Addition : X+Y Comparator or ratio function : X/Y or Y/X
Temperature	-20 to 200 Deg C Pt100, Pt1000, 2 wire Temperature compensation, linear (ref. temp : 25 Deg.C) auto/manual
Modules	Factory installed function cards can be reconfigured in the field
Parameters	Card 1: communication RS 485 (MODBUS-RTU) Card 2: pH, ORP, conductivity, TDS, Chlorine, Chlorine Dioxide, Turbidity, TSS, 4-20 mA Card 3: pH, ORP, conductivity, TDS, Chlorine, Chlorine Dioxide, Turbidity, TSS, 4-20 mA Card 4: Relay 6 nos. Rated 250 VAC 5A
Power	110 - 240 VAC, 50/60 Hz (UPS recommended), <40 watt
Electrical	EMC : IEC 61326-1 Vibration : IEC 60068-2-6 Ingress Protection (IP) : IEC60529 Safety/LVD : IEC/EN 61010-1 CE Compliant*
Service test	Current: test current can be specified for output 1 and 2 In-built power supervisory circuit for data integrity and memory Display of last error that occurred Sensor test, display of direct, raw sensor signal
Housing	MOC polycarbonate, 10% glass filled Colour RAL 9007 Panel, wall and 2" pipe mounting Ingress protection IP66
Dimensions	H 144mm X W 144mm X Depth 103mm
Cable Gland	M20 X 6 nos
Weight	1 Kg
Environmental	Ambient temperature: -20 to 60 DegC Transport, storage temperature: -20 to 80 DegC Relative humidity: 95% at temperature up to 55 DegC

Chlorine Monitoring System	
Type	Amperimetric free chlorine Cathode: Gold, Anode: Silver chloride (AgCL)
Sample pH range	5.5 - 8.5
Body material	PVC, O-ring material: Viton
Membrane cap material	PVDF
Temperature range	0 - 45 degrees C
Maximum pressure	14.7 psig (1 Bar)
Temp compensation	Integrated
Process connection	Flow cell 1/4 inch FNPT threads
Output	4-20mA
Flow range	Min 0.2 gpm (45 l/hr), max 0.6 gpm (135 l/hr)
Calibration	Process calibration with sample, validation against DPD method

Turbidity and TSS Monitoring System	
Type	IR LED 860 nm light attenuation / optical absorption
MOC	SS316 body
Cleaning	Automatic wiper cleaning function
Calibration	Single point zero calibration using DM/DI water
Detector	Scratch resistant safire glass
Operating temp	0-60 deg C non freezing
Protection	IP68
Cable	9 mtr integrated
Calibration	Single point zero calibration; DM/DI water

pH / ORP Measurement				
Measurement	Range	Unit	Resolution	Accuracy
pH	0 to 14	pH	0.01	± 0.01 pH
ORP	-2000 to +2000	mV	1	± 1 mV
Temperature	-20 to 200 Deg C	°C	0.1	±0.5% of full scale

Conductivity Measurement				
Measurement	Range	Unit	Resolution	Accuracy
Cell K: 0.01	0 µS/cm to 20 µS/cm	µS/cm, ms/cm	0.01 µS/cm	±0.5% of FS
Cell K: 0.01	0 µS/cm to 200 µS/cm	µS/cm, ms/cm	0.1 µS/cm	±0.5% of FS
Cell K: 0.1	0 µS/cm to 2000 µS/cm	µS/cm, ms/cm	0.1 µS/cm	±0.5 % of FS
Cell K: 1	0 µS/cm to 20 ms/cm	ms/cm	0.01 ms/cm	±0.5 % of FS
Cell K: 10	0 µS/cm to 200 ms/cm	ms/cm	0.1 ms/cm	±0.5 % of FS

TDS Measurement				
Measurement	Range	Unit	Resolution	Accuracy
Cell K: 0.01	0 to 140 mg/L	mg/L, g/L	0.01 mg/L	±0.5 % of FS
Cell K: 0.1	0 to 1400 mg/L	mg/L, g/L	0.1 mg/L	±0.5 % of FS
Cell K: 1	0 to 14 g/L	g/L	0.01 g/L	±0.5 % of FS
Cell K: 10	0 to 140 g/L	g/L	0.1 g/L	±0.5 % of FS

* Note: Above range with TDS factor as 0.7 other factor user programmable

Chlorine Monitoring: Amperimetric System				
Measurement	Range	Unit	Resolution	Accuracy
FMSNX2	0-2 ppm	mg/L, ppm	0.01	± 5% of measured against reference test*(DPD)
FMSNX5	0-5 ppm	mg/L, ppm	0.01	± 5% of measured against reference test*(DPD)
FMSNX10	0-10 ppm	mg/L, ppm	0.01	± 5% of measured against reference test*(DPD)

* Note: Constant pH value within range 5.5 - 8.5

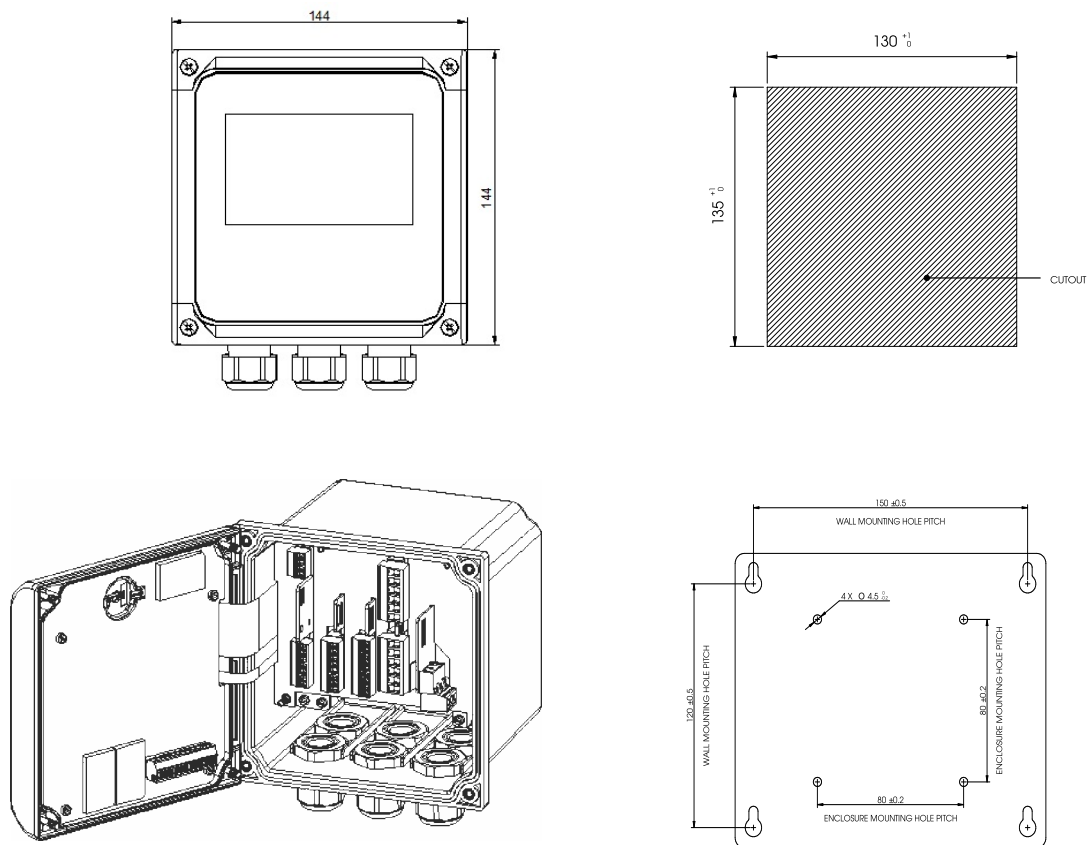
Chlorine Dioxide Monitoring				
Measurement	Range	Unit	Resolution	Accuracy
FMCLD2	0-2 ppm	mg/L	0.01	± 5% of measured against reference test*(DPD)
FMCLD5	0-5 ppm	mg/L	0.01	± 5% of measured against reference test*(DPD)
FMCLD10	0-10 ppm	mg/L	0.01	± 5% of measured against reference test*(DPD)

Turbidity and TSS Monitoring System				
Measurement	Range	Unit	Resolution	Accuracy
FMTTC100 (Turb)	0-100 FTU	FTU/NTU/FNU	0.1	±2% of measured
FMTTC500 (Turb)	0-500 FTU	FTU/NTU/FNU	1	±2% of measured
FMTTC3000 (Turb)	0-3000 FTU	FTU/NTU/FNU	5	±2% of measured
FMTCS1000 (TSS)	0-1000 mg/L	ppm, mg/L	0.1, 1	±3% of measured

Analogue Input Card (DO)				
Measurement	Range	Unit	Resolution	Accuracy
Visiwater Plastic	0-20 ppm	ppm	0.1, 0.01 ppm	Accuracy at 25 °C 0.4 ppm ± 5 %; 8 ppm ± 1 %; 20 ppm ± 5 %
Visitrace	0-2000 ppb	ppb	0.1 ppb	Accuracy at 25°C ± 0.5 ppb or 2% whichever is greater

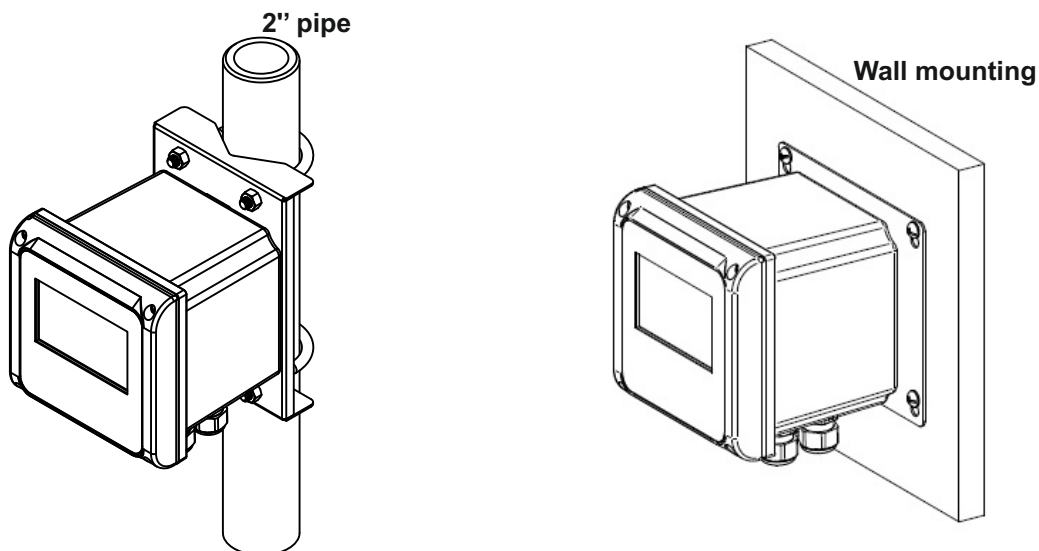
Ordering Information- Configuration Selection : A4T-P-C1-C2-C3-C4-C5							
A4T	Transmitter Type						
	P	Panel mounting					
	W	Wall, common field mounting					
			C1	Card Input # 1			
			0	Nil			
			1	RS485 MODBUS			
					C2	Card Input # 2	
					1	pH	
					2	Redox/ORP	
					3	Conductivity/Ratio	
					4	TDS	
					5	Free Chlorine(FRC) / Chlorine Dioxide(ClO ₂)	
					6	Turbidity	
					7	TSS	
					8	Analogue Input Card(DO) 4-20 mA	
						C3	Card Input # 3
						0	Nil
						1	pH
						2	Redox/ORP
						3	Conductivity/Ratio
						4	TDS
						5	Free Chlorine(FRC) / Chlorine Dioxide(ClO ₂)
						6	Turbidity
						7	TSS
						8	Analogue Input Card (DO) 4-20 mA
						C4	Card Input # 4
						0	Nil
						1	Relay- 6 nos
						C5	Configuration*
						00	Default
						01	Ratio conductivity
						02	Chlorine Dioxide
A4T	P	0	1	2	0	XX	Complete Ordering Code

Dimensional Drawings



Note : All dimensions in mm.

Mounting Drawings



Forbes Marshall
Krohne Marshall
Forbes Marshall Arca
Codel International
Forbes Solar
Forbes Vyncke
Forbes Marshall Steam Systems

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