

# Aqua4Trans

## 4 Wire Dual Channel/Multiparameter Transmitter

Versatile Controller for pH, Redox, Conductivity, Chlorine, 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, 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	
<b>Display</b>	Backlit display dot matrix (128 x 64 dot matrix liquid crystal display) Programmable for multichannel display of measured value, temperature, units and error messages
<b>Keypad</b>	Tactical 4 keys for menu, up/down scroll, enter, menu interface
<b>Input</b>	Analogue Sensors; pH, ORP, conductivity/ TDS, chlorine, turbidity, TSS, 4-20 mA
<b>Output</b>	Dual current output per channel, 4-20 mA DC, galvanically isolated, max load 750Ω Option of linear, bilinear and logarithmic
<b>Maths functions</b>	% accepted : $X/Y*100$ [%] % rejection : $(1-X/Y)* 100$ [%] Difference : X-Y Addition : X+Y Comparator or ratio function : X/Y or Y/X Note - X, Y : channel 1 or 2
<b>Temperature</b>	-20 to 200 Deg C Pt100, Pt1000, 2 wire Temperature compensation, linear (ref. temp – 25 Deg.C) auto/manual
<b>Modules</b>	Factory installed function cards can be reconfigured in the field
<b>Parameters</b>	Card 1: communication RS 485 (MODBUS-RTU) Card 2: pH, ORP, conductivity, TDS, Chlorine, Turbidity, TSS, 4-20 mA Card 3: pH, ORP, conductivity, TDS, Chlorine, Turbidity, TSS, 4-20 mA Card 4: Relay 6 nos. Rated 250 VAC 5A
<b>Power</b>	110 - 240 VAC, 50/60 Hz (UPS recommended), 40 watt
<b>Electrical</b>	EMC : IEC 61326-1 Vibration : IEC 60068-2-6 Ingress Protection (IP) : IEC60529 Safety/LVD : IEC/EN 61010-1 CE Compliant*
<b>Service test</b>	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
<b>Housing</b>	MOC polycarbonate, 10% glass filled Colour RAL 9007 Panel, wall and 2" pipe mounting Ingress protection IP66
<b>Dimensions</b>	H 144mm X W 144mm X Depth 103mm
<b>Cable Gland</b>	M20 X 6 nos
<b>Weight</b>	1 Kg
<b>Environmental</b>	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	
<b>Type</b>	Amperometric free chlorine Cathode: Gold, Anode: Silver chloride (AgCL)
<b>Sample pH range</b>	5.5 - 8.5
<b>Body material</b>	PVC, O-ring material: Viton
<b>Membrane cap material</b>	PVDF
<b>Temperature range</b>	0 - 45 degrees C
<b>Maximum pressure</b>	14.7 psig (1 Bar)
<b>Temp compensation</b>	Integrated
<b>Process connection</b>	Flow cell 1/4 inch FNPT threads
<b>Output</b>	4-20mA
<b>Flow range</b>	Min 0.2 gpm (45 l/hr), max 0.6 gpm (135 l/hr)
<b>Calibration</b>	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	10 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: Amperometric 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
FMCLD5	0-5 ppm	mg/L	0.01	± 5% of measured against reference test
FMCLD10	0-10 ppm	mg/L	0.01	± 5% of measured against reference test

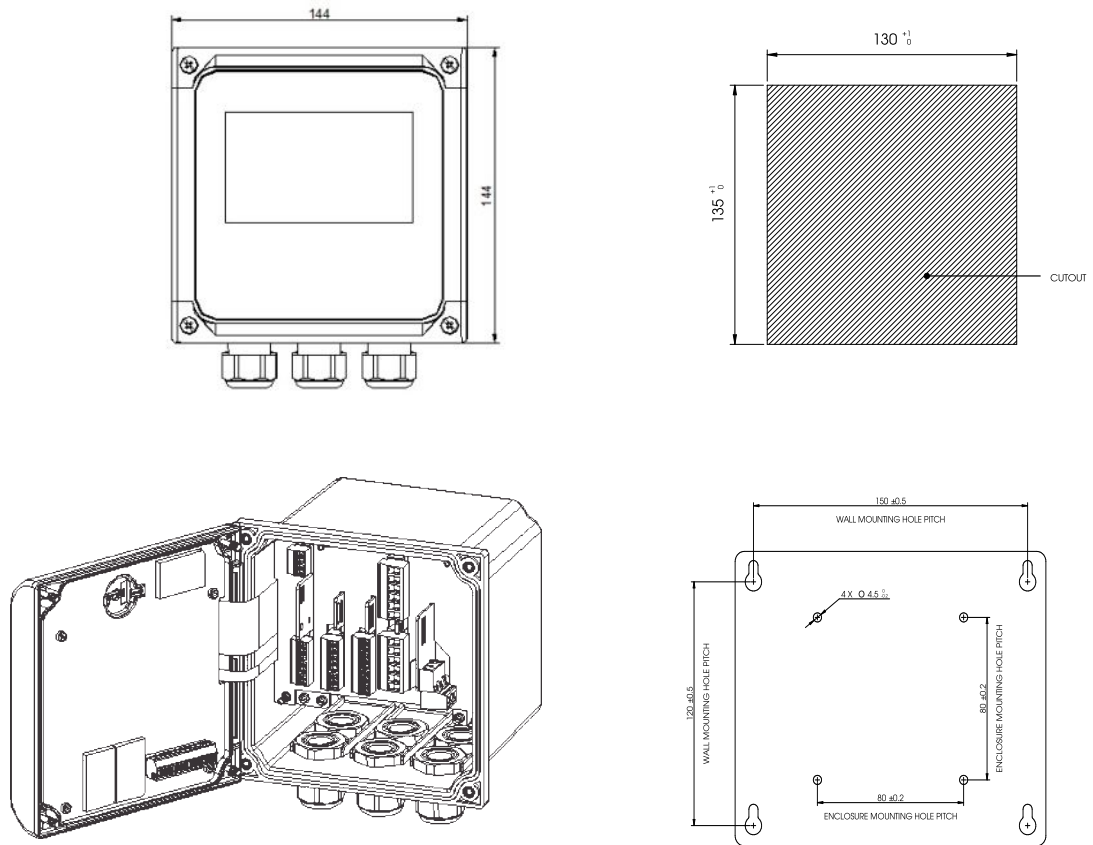
Turbidity and TSS Monitoring System				
Measurement	Range	Unit	Resolution	Accuracy
FMTTC100 (Turb)	0-100 FTU	FTU/NTU/FNU	0.1	±2% of measured
FMTTC500 (Turb)	0-500 FTU	FTU/NTU/FNU	1	±2% of measured
FMTTC3000 (Turb)	0-3000 FTU	FTU/NTU/FNU	5	±2% of measured
FMTCS1000 (TSS)	0-1000 mg/L	ppm, mg/L	0.1, 1	±3%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

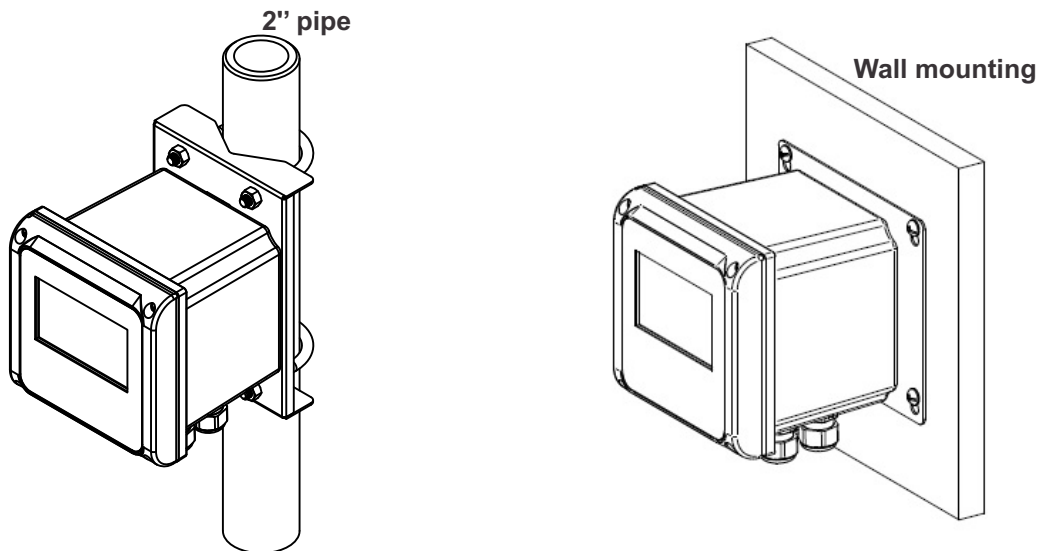
<b>A4T</b>	<b>Transmitter Type</b>						
	<b>P</b>	Panel mounting					
	<b>W</b>	Wall, common field mounting					
		<b>C1</b>	<b>Card Input # 1</b>				
		0	Nil				
		1	RS485 MODBUS				
			<b>C2</b>	<b>Card Input # 2</b>			
			1	pH			
			2	Redox/ORP			
			3	Conductivity/Ratio			
			4	TDS			
			5	Chlorine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

## 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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