



## **ACCURRA-S** **TCD**

### **Thermal Conductivity Based Analyser**

**H<sub>2</sub> He Ar N<sub>2</sub> N<sub>2</sub>O Ne Kr**

#### **Applications**

**Process Monitoring**

**Inward Quality Check**

**Purity Measurements**

**Gas Certifications**

**Gas Storage Tanks**

**Welding Gases**

**Platinum based Sensor Technology**

**Reference Gas is not required**

**Lowest Cost of Ownership**

**Reliable and Accurate**

**Excellent Long term Stability**

**Long Calibration Interval**

#### **Salient Features**

In-built Fine Filter  
& Flow Indicator

Calibration History  
with Deviation values

Alarm and Fault  
History

Backlit LCD Display  
20 x 4 Character

Isolated 4-20 mA Output:  
Dual Range with Range ID  
relay output

Output  
Hold / Freeze

Calibration Check  
Facility

Password Protected Calibration,  
Setup & Diagnostics Menu

Modbus RTU  
over RS 485

4-20mA output range is USER  
configurable over entire  
measurement range

Alarm Set Points are USER  
configurable & can be set as  
Lo - LoLo / Lo - Hi / Hi - HiHi

Cyclic and Remote  
Auto-calibration (Optional)

Internal Sample Pump for  
Low pressure Sample (Optional)

For Binary Gas Application ACCURRA-S-TCD comes with a accurate, highly sensitive and stable Thermal Conductivity sensor. It can have customised and linearised compensation for various background gases making it suitable for complex binary gas applications.

### Measurement Capabilities

Measured Gas	in Background of	Measurement Range	Minimum Range	Suppressed Range
<b>HYDROGEN</b>	N2 / Air / CO2 / CH4	0 - 100%	0 - 3 %	97 - 100%
	Argon	0 - 100%	0 - 3 %	97 - 100%
	Helium	20 - 100%	20 - 40 %	85 - 100%
	Oxygen	0 - 100%	0 - 4 %	97 - 100%
<b>HELIUM</b>	N2 / Air	0 - 100%	0 - 3 %	97 - 100%
	Argon	0 - 100%	0 - 3 %	97 - 100%
<b>ARGON</b>	N2 / Air / O2	0 - 100%	0 - 5 %	96 - 100%
	Carbon Di-oxide	40 - 100%	N. A.	80 - 100%
	Xenon	0 - 100%	0 - 5 %	97 - 100%
<b>NITROGEN</b>	Argon	0 - 100%	0 - 5 %	97 - 100%
	Carbon Di-oxide	0 - 100%	0 - 5 %	96 - 100%
	Hydrogen	0 - 100%	0 - 5 %	97 - 100%
<b>NITROUS OXIDE</b>	N2 / O2	0 - 100%	0 - 5 %	96 - 100%

Sensor Technology Thermal Conductivity  
 Display Resolution 0.01  
 Linearity < 1% of the Range

Repeatability < 1% of the FS  
 Response Time-T90 < 10 sec @ 1 LPM  
 Errors & Drift < 2 % of the FS/wk

### Dual Channel Accurra- S



ACCURRA-S-TCD has the capability to house two measurements. Each Sensor has it's own electronics, micro controller and power supply, making the hardware completely independent.

Further each sensor has its own Display, Keypad, Current output, set of Relays and Modbus ID. The pneumatic Lines is however common. This architecture makes ACCURRA-S-TCD amongst the most reliable Analysers in the industry.

## Salient Features

### Output Freeze Function

Output signals- 4-20mA and Alarm Relays can be hold to last value during Calibration Check, Calibration and Auto Calibration. This is a user configurable feature.

### Dual Range Current Output

Two ranges can be defined for the current output. e.g. 0 - 10% and 0 - 25%. When the reading is below 10% the current output will correspond to 0 - 10%. When the reading crosses 10% the current output will correspond to 0 - 25% and vice versa. This feature is very useful during start up. The Range ID Relay when configured can be used for remote indication.

### Auto-Calibration

This feature is optional. If selected then you can initiate Auto calibration through keypad or by setting the internal cyclic timer or initiate remotely through MODBUS command. The Auto-calibration relays used are internal to the analyser.

### Sample Pump

The ACCURRA-S-TCD can control an external Sample pump. It can also have an option of Internal Sample Pump. This pump will be off during calibration. When Sample Pump option is selected Range change option is unavailable.

### History

The ACCURRA-S-TCD store Calibration, Alarm and Fault record. This is helpful in analysis of process. Calibration History helps to know Drift / Residual Sensor Life.

### Diagnostics

The ACCURRA-TCD has inbuilt hardware diagnostic check which can be used for various hardware simulation during failure.

## Sample Condition

Suitable for Non- Corrosive, Non-Toxic, Non Flammable, Non-condensing dry, free from entrained oil.

In case your Sample does not comply to the specifications, please contact us for a Sample Conditioning System that is customised to your application needs.

Sample Flow rate: 1 LPM  $\pm$  0.1 LPM

ACCURRA-S-TCD has a in-built Flow indicator. Reading is flow sensitive hence flow has to be regulated externally by user.

Sample Temperature : 5° C - 45° C Max

Sample Pressure: 2 - 10 psig Max

The Sample Pressure has to be regulated externally by the user.

Sample Dust/Particulate: < 3 Micron

ACCURRA-S-TCD has in-built Sample Filter however if the dust level is high install upstream Filter externally.

Sample Dew Point: 5° C less than the lowest ambient Temperature

Material in Contact with Sample : SS316, Viton, PTFE, Glass, Aluminium, Acrylic.

## Hardware Specifications

Display	Backlit LCD, 4 Line x 20 Character, Alphanumeric.
Analog Output	1 x 4-20 mA, isolated, Max Load 500 $\Omega$ Range Dual Range. Analog Output range is freely selectable by user over entire measurement range.
Output Relays	6 x 1CO rated @ 1A 230V AC. All relays are configured as Failsafe Relay 1 : Alarm 1 Relay 2 : Alarm 2 The Alarm set points are user configurable and can be set as Lo - LoLo / Lo - Hi / Hi - HiHi . Relay 3 : Fault Alarm The Fault is activated during Calibration or Instrument Failure. Relay 4 : Sample Pump / Range ID This relay can be used to run a Internal Sample Pump OR indicate Output Range Change. The Internal Sample pump is an optional feature. Relay 5 and 6 : For Internal Auto-calibration (Optional)
Modbus Communication:	MODBUS protocol over RS 485. READ: Measured Value, Status, Setup Parameters & History. WRITE: Initiate Auto Calibration

## Optional Hardware

### Auto - Calibration

This option includes the necessary Solenoid Valves and the software & hardware associated with it. The Solenoid Valves are internal and are controlled by ACCURRA-S-TCD.

### Sample Pump

This option includes internal Sample pump which is controlled by ACCURRA-S-TCD. During calibration this pump is OFF. When Sample Pump option is selected Range ID option is unavailable.

## Environmental Conditions

Ambient Temperature: +5°C to + 45°C

Storage Temperature: +0°C to + 50°C

Area Classification: Safe Area

## Other Specifications

Gas Inlet / Outlet	1/4" OD SS316
Enclosure	19" Rack / Panel mounted
Dimension	134 (H) x 483 (W) x 180 (D) mm
Protection	Suitable for Safe Area, IP 20
Weight	Approx. 7 Kgs
Power Supply	100 - 240 V AC 50/60 Hz, 45W

## Ordering Code

	1	2	3	4	5	6	7	8	9	10	11
<b>ACCURRA-S -</b>									A		

**1st Component - Gas**

Hydrogen	1	0
Helium	7	1
Argon	7	2
Nitrogen	7	3
Nitrous Oxide (N <sub>2</sub> O)	7	5

**1st Component - % / Purity**

Percentage	3	0
Purity (95- 100 %)	9	0

**2nd Component - Gas**

None	X	X
Hydrogen	1	0
Helium	7	1
Argon	7	2
Nitrogen	7	3

**Auto Calibration\***

X	None
S	Yes, Internal Solenoid Valve

**Range ID / Sample Pump\***

R	Range ID
P	Yes, Internal Sample Pump

**Power Supply**

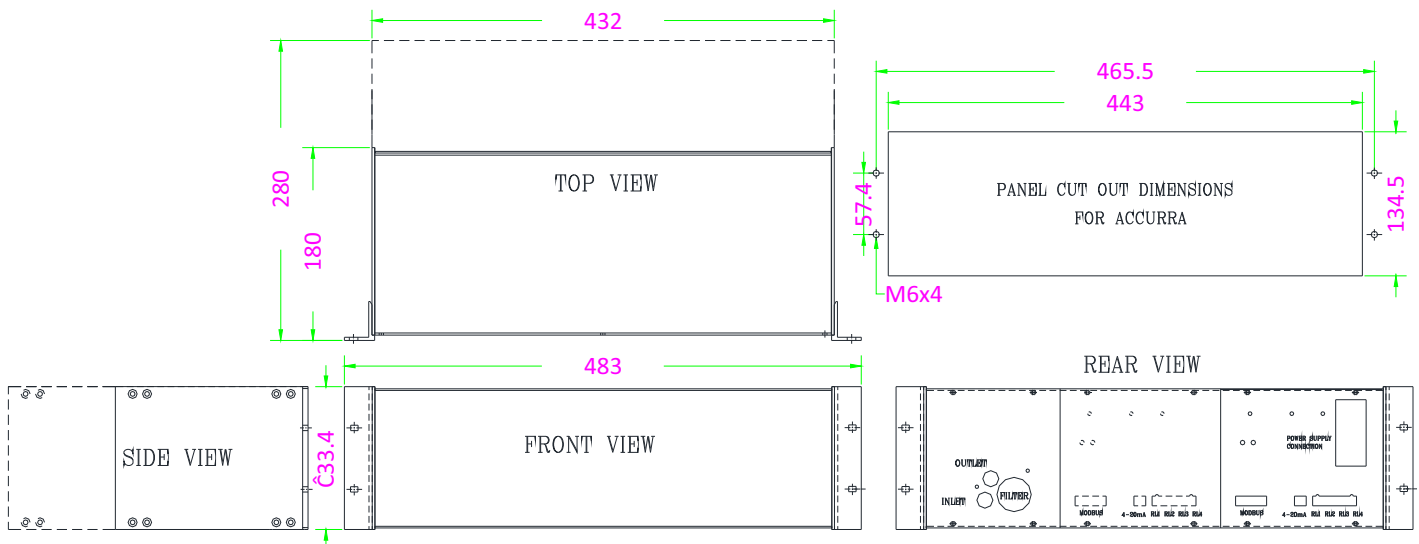
A	100 - 260 V AC
---	----------------

**2nd Component - % / Purity**

3	0	Percentage
9	0	Purity (95- 100 %)

\* Contact Sarvesh Analytics Pvt. Ltd. for more details

## Dimensional Details



Notes: - The final responsibility to check whether this product meets the requirement of the Process and / or Analyser remains solely with the customer.  
 - M/s SARVESH ANALYTICS PVT. LTD. has a policy of continuous improvement of product & services and hence reserves the right to change the specifications and features without prior notice.

## SARVESH ANALYTICS Pvt. Ltd.

Regd. Off: # 207, Vinayak Arcade, Akurdi, Pune - 411035, INDIA  
 Factory: Gat No.188, Jyotibanagar, Talwade, Pune - 411062 INDIA



Email: [info@sarveshindia.com](mailto:info@sarveshindia.com)  
 Website: [www.sarveshindia.com](http://www.sarveshindia.com)  
 Telephone: 91 94 2300 4179

