SARVESH ANALYTICS Pvt. Ltd.

Analysis Simplified

i-Cons

Your Sampling Panel compressed in a Compact 19" Cabinet

i-Cons is the most Advanced, Intelligent and Compact Extractive Sampling System based on Powerful Peltier cooler. It includes all the essential Sampling Components, Realtime Diagnostics with Auto Correction and Early Warnings, History and Modbus communications. It helps you to achieve quickest integration time with minimal tubing and electrical.

Salient Features

- Plug n Play Menu Driven
- Engineered for Online Processes and Analysers
- Auto Start-up Sequence
- Peltier Cooler with PTFE heat exchanger
- Controls output for Blowback, Sample SOVs & Heated Hose
- Auto Blowback on Flow Failure
- Peristaltic Pump with variable discharge rate
- Built in Sample Pump, Condensate Sensor, Flow detector, Autocal SOVs & Filter
- Pulsating Blowback for efficient Cleaning
- Alarm and Fault History
- Remote Monitoring with Modbus RTU over RS 485
- Auto Shutdown on Hardware Failure

Maintenance Reminder for
- Peristaltic Pump tube
- Sample Filter
- Sample Probe Filter
- Sample Pump kit

- Consumes Less Panel Space
- Needs very few external components
- Enables fastest Integration time
- Reduces Direct and Indirect Cost

Tele: 91 - 94 2300 4179 email: info@sarveshindia.com
www.sarveshindia.com

SARVESH ANALYTICS Pvt. Ltd.

I-CONS

Salient Features

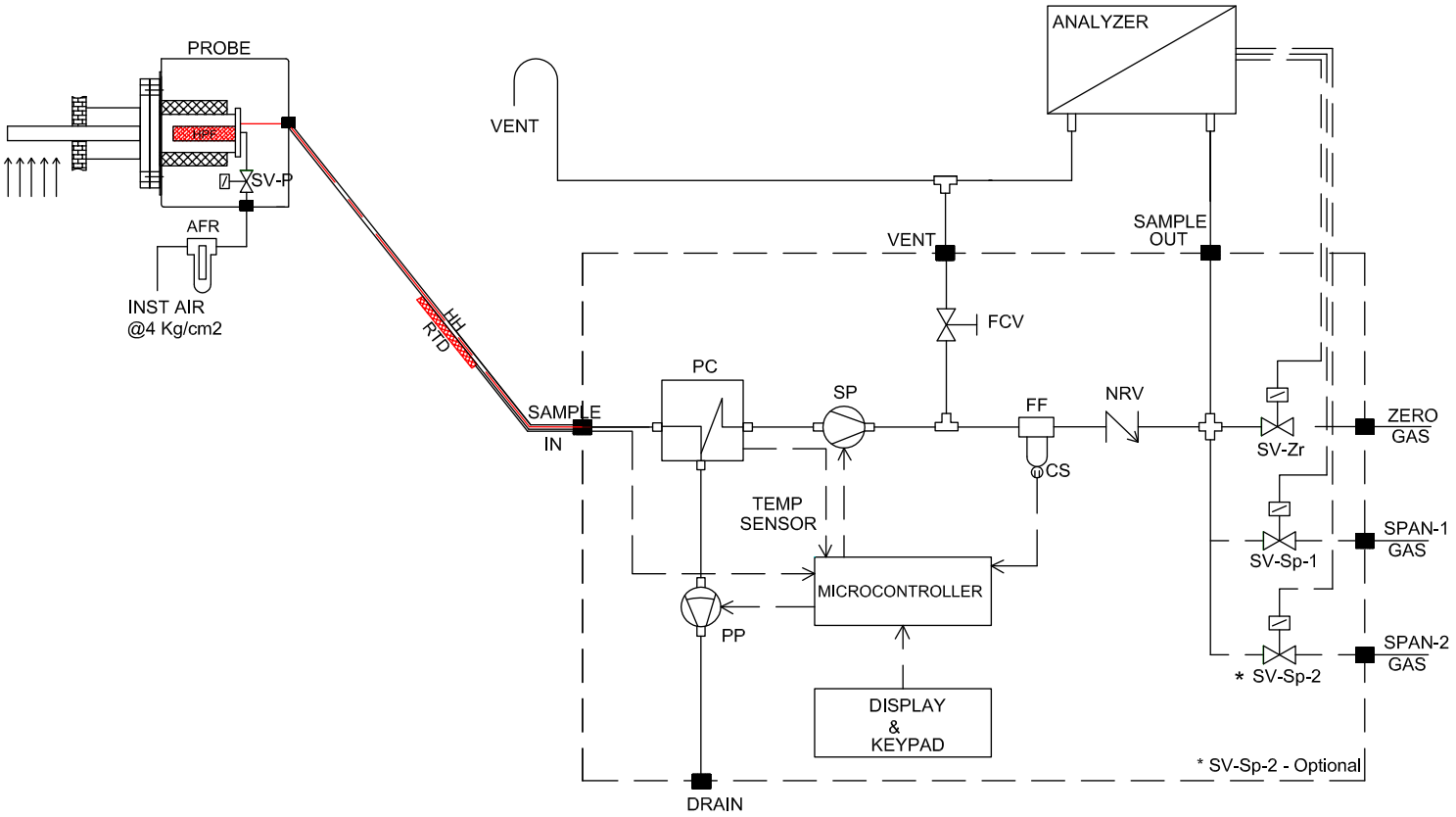
i-Cons is a Sample Conditioner based on Peltier Cooler - a solid state technology. It is highly efficient, robust and has a long life as compared to conventional system. It has inbuilt Condensate Sensor and Flow Sensor to detect fault and trip the Sample Pump thereby avoiding conditions which can give rise to faults. **i-Cons** also continuously monitors system health and hardware. In case of any fault, which is rare, it goes into Shutdown thus avoiding running the system with fault and causing complications & damages.

The Micro controller controls the following operations

- ✓ Sample Probe Blowback
- ✓ Heated Hose Temperature
- ✓ Sample Cooler Output Temperature
- ✓ Operates the Sample pump below 12^{0} C
- ✓ Operates the Peristaltic Pumps periodically
- ✓ Trips the Sample Pump when condensate is detected
- ✓ Operates Blowback in case of Flow Failure
- ✓ Maintains History and Maintenance Records

FAULT ALARM relay is Failsafe.
It is generated in following cases

- Blowback in Progress
- Heated Hose Temperature - Extra Low / Extra High
- Condensate detected in Sample Line
- Flow Fail Alarm
- Maintenance Alarms
- .... AND MANY MORE ....



Sample Probe Blowback

i-Cons controls the cyclic Blowback of the Filter in Sample Probe. The interval and duration of blowback is user settable. The Blowback is pulsating which ensures efficient cleaning of filter. In case the filter gets choked mid-cycle and Sample Flow fails, **i-Cons** will initiates an Automatic Blowback. This immediate automatic action avoids manual interventions.
During blowback Sample Pump is OFF. It also has a separate output to control the Sample Solenoid valve.

Heated Sample Line

The **i-Cons** controls the Heated Hose. The Sample Heated Hose temperature is user programmable. It is controlled based on RTD (Pt100) input from the Heated hose.

Tele: 91 - 94 2300 4179 email: info@sarveshindia.com
www.sarveshindia.com

SARVESH ANALYTICS Pvt. Ltd.

I-CONS

Sample Pump and Autodrains

i-Cons uses a sample pump to draw sample from the process. This Pump is off during Blowback and Calibration. It is also off during condensate detection and hardware fault.

The Auto-drains in **i-Cons** run periodically. The discharge rate of these auto-drains are user programmable.

History & Maintenance Records

i-Cons keeps a record of Faults and Usage of consumables or spares such as Filters, Autodrains Tubes and Sample Pump in real time. And at the end of life, it gives a message to Check and Replace the same. This feature is very helpful and act as an early warning system.

Calibration in Progress

i-Cons has a digital input which can be connected to the 'Cal-in-Progress' output of Analyser. So when the analyser goes into Calibration the Sample Pump is switched OFF.

Modbus on RS485

i-Cons has a Modbus RTU communication. All the status, health, history and maintenance records are available remotely through modbus. The user can also set many parameters in **i-Cons** through modbus command.

Hardware Specifications

Display & Keypad:	Backlit LCD, 4 Line x 20 Alphanumeric Character, with 7 Keys.

Input (External):

- Analog: 1 x RTD (Pt100) from Heated Hose
- Digital: 1 x Calibration in Progress from Analyser

Outputs:

1 x Triac	To drive SSR / Contactor for Heated Hose
1 x Relay	For Sample Probe Blowback Solenoid Valve
1 x Relay	For Sample Probe Sample Solenoid Valve
1 x Relay	Fault

All outputs are rated @ 230V AC 1 A

All relays have 1 Changeover contacts

Communication: RS-485 with MODBUS RTU protocol

Cooler Specifications:

Heat Exchanger	1 x PTFE
Sample Inlet Temperature	Max 140^0 C
Sample Dew Point	65^0 C max
Sample Flow	240 LPH (4LPM)max
Sample Outlet Temperature	5^0 C
Sample Dust Level	< 3 micron

Peristaltic Pump:	1 No.
Sample Fine Filter:	0.1 Micron Coalescing Type
Condensate Sensor:	Long life corrosion free Sensor
Sample Pump with Fast Loop Valve:	Free Flow - 5 LPM
	Optional: Free Flow - 9 LPM

Material in contact with Sample:

SS 316, PTFE, Viton, Silicon, Engineering Plastic

Environmental Conditions

Ambient Temperature:	+10^{0}C to + 40^{0}C
Storage Temperature:	+0^{0}C to + 50^{0}C
Relative Humidity:	< 90% RH non-condensing
Area Classification:	Safe Area

Sample Condition @ Tapping Point

Suitable for Sample where SO_2, NO, CO < 1000ppm.

Not suitable for samples containing, HCL, HF, H2S and other highly Corrosive, Toxic and Flammable Samples.

Sample Dew Point:	60 ^{0}C
Dust Level:	< 10 gm/Nm3 in process *(< 10 mg/Nm3 at inlet of I-cons)*
Sample Gas Velocity:	between 5 - 20 m/sec
Sample Line Distance:	Max 50m*
Sample Temperature:	120 - 550 ^{0}C
Sample Pressure:	800 mbar - Atm

Other Specifications

Sample Connection	Inlet	- 1/4" OD PTFE
	Outlet	- 1/4" OD PTFE
	Bypass	- 1/4" OD PTFE
	Drain	- Flexible tube connection
Calibration Connections	1/4" OD PTFE	
Enclosure	19" Rack / Panel mounted	
Dimension	310 (H) x 483 (W) x 285 (D) mm	
Protection	Suitable for Safe Area, IP 20	
Weight	Approx. 16 Kgs	
Power Supply	230 VAC, 50 Hz, 600 VA (excluding Heat Tracer)	

Tele: 91 - 94 2300 4179 email: info@sarveshindia.com
www.sarveshindia.com

SARVESH ANALYTICS Pvt. Ltd.

I-CONS

Optional Hardware

Sample Probe - SP 200 (for Low Dew Point Sample)
with unheated Filter and Blowback Solenoid Valve

Sample Probe - SP 300 (for High Dew Point Sample)
with Heated Filter and Blowback Solenoid Valve
*Refer catalogue for more details

Heated Sample Line - Prefabricated Heated Hose
Recommended Length - 50m Max Sample Tube - 1/4"OD PTFE
Power Supply - 230V AC 50Hz; 40 W/mtr

Auto - Calibration

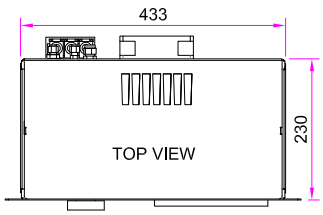
i-Cons can be internally fitted with either 2 or 3 Auto calibration solenoid valves which needs to be controlled by your Analyser directly through hard wire. The Solenoid Valve are of 24V DC.

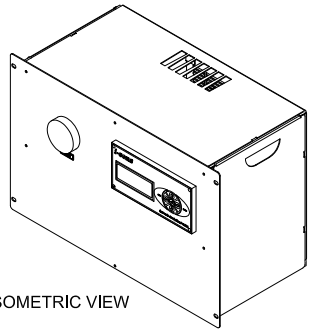
Water Separator with Auto-drain

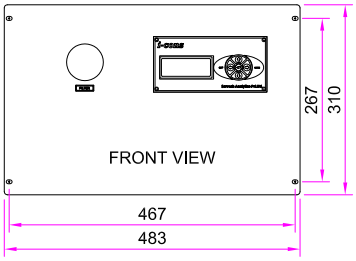
This unit separates and removes excess water from Sample Gas. The collected water is removed by an auto drain controlled by **i-Cons**.

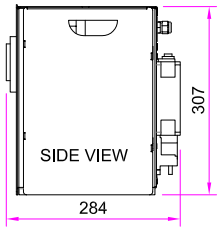
Sample Pump - High Flow Rate

This Sample pump should be selected when the sample line distance is between 60 - 90m. It has free flow of 9 LPM.









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.

		1	2	3	4	5	6	7	8	9	10
Description	Order Code:	I	C	O	N	S	1				X

Sample Probe

None	X
SP- 200 for Low Dewpoint Sample	2
SP- 300 for High Dewpoint Sample	3

Probe Insertion Length

500 mm	0	5
1000 mm	1	0
1500 mm	1	5

Sample Line distance (in meters)

Heated Hose

None	X
Yes (Length = Sample Line Distance)	Y

Auto Calibration Solenoid Valves

None	X
Yes - Zero + Span	2
Yes - Zero + Span 1 + Span 2	3

Catchpot with autodrain

None	X
Yes	Y

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
Website: www.sarveshindia.com
Telphone: 91 94 2300 4179