UPAS – FID Series

General Technical Description

Technical data

Housing-Type	ES, PT, FE, MK
MSU-Versions	High-Temperature, Steam, Ambient air
Ambient temperature	+5°C to 40°C (IP40) -20°C to 50°C (IP65)
Air humidity	< 90% rel. humidity, + 20°C
	< 50% rel. humidity, + 40°C
	No condensation
Geographical altitude	0 to 1500 m above NN
Connections	2 x 0/4-20mA galvanically isolated (NE43),
	4x status and alert relays
	2x digital inputs (DIN EN 60947-5-6)
	MODBUS RTU/ASC. MODBUS TCP
	USB Host (printer and memory stick)
Protection class	Rack mounted IP40 Field mounted IP65

***** QAL1 / EN 15267

The UPAS – FID Series is a combination between a flame ionization detector, driven by the UPAS- communication and analytical open platform. With the flame ionization detector, you can measure volatile hydrocarbons of a wide range.

Solution for your measurement task

For the multiple measurement tasks, installed within various applications, we developed a modular solution for your specific customer requests. Different case studies, settings and options are adapted to the application. Furthermore, we offer a wide range of sample gas probe systems. Existing UPAS – FID Series can be adapted to further measurement tasks as well as new components can be customized and developed.

General application

The UPAS – FID Series is applied in a variety of applications for all kind of industries, environmental protection and as well for research and development. The applications reach from a LEL-control, over emission- and ambient air monitoring to analytical exhaust control for the chemical industry and in the field of engine-development. Apart of that, the FID is used for process optimization and for analytical control of the TLV- and TRC-values.

Technical design

Within the UPAS-series we offer a certain range of housing options as well as detector versions adapted to the variety of applications in the field, so there is a very modular and easy to fit system at hand to solve your specific measurement task. Please contact our Technical Sales Department for consultancy, so we can offer a possible adaption by providing additional electronical or mechanical components if needed for your application.

Analyzer Technology	Flame Ionisation Detector (FID)		
Detector types	single-channel, double-channel (separate datasheet)		
Measured variable	Hydrocarbon (TOC/THC/VOC/HC)		
Type studies	Rack mounted: ES - 19” Rack, PT (optional bottle holder) – Portable version Field mounted: FE, MK – in-situ (measurement head)		
Vacuum system	Injector < 1 Nm³/h	Internal pump	
Measurement range	1 mg org.C/m³ to 100.000 mg org.C/m³	2 mg org.C/m³ to 100.000 mg org.C/m³	
Lower detection limit	0,02 mg org.C/m³	0,2 mg org.C/m³	
Span drift	<1% measurement range /24 h		
Linearity	<1% measurement range		
Sample gas (self-drawn)	25 Nl/h with 1013 hPa	25 Nl/h with 1013 hPa	
Response time (T10/T90) increasing	< 0,5 s with measurement value > 20 mg org.C/m³ < 5,0 s with measurement value < 20 mg org.C/m³		
Sample gas inlet	Pressure: 800 - 1600 mbar	Pressure: 900 - 1200 mbar	
Fuel gas	Hydrogen < 80 ml/min; Helium / Hydrogen < 240 ml/min		
Burner air	Internal catalyst with active coal or synthetic air		
Calibration	Automatic time scheduled calibration or external actuated calibration span gas and internal catalyst or synthetic air or nitrogen < 130 Nl/h		
Detector temperature	95°C-195°C, according to the temperature classes		
Supplementary heating system (PT100)	0 °C bis 260 °C		
Catalyst temperature	Burner air catalyst: 400°C		
Power	**Voltage / Frequency**	**UPAS - FID**	**Probe, external catalyst**
	230V ± 10%; 48 Hz to 62 Hz	550 W	900 W
	115V ± 10%; 48 Hz to 62 Hz	550 W	450 W

Options

Position	Description	A	FE	MK	PT	ES
UPAS GUI	Graphical User Interface		x	x	x	x
UPAS IOC	Input Output Carrier Board (maximum 2 boards in one system / a board could supply 4 modules)		x	x	x	x
UPAS IOC DO	8x8 Valve matrix - connections for up to 64 sample point switching		x	x	x	x
UPAS IOC REL	8 x digital outputs potential-free		x	x	x	x
UPAS IOC DI	8 x digital inputs (DIN EN 60947-5-6)		x	x	x	x
UPAS IOC AO	8 x 0/4-20mA galvanically isolated (NE43)		x	x	x	x
UPAS Internal dilution probe (MK)	1:50 Dilution probe heated without enclosure			x		
UPAS Internal dilution probe	1:5 Dilution probe within the detector		x		x	x
UPAS External dilution probe	1 : 100 Dilution probe	x	o		o	o
	1 : 50 Dilution probe	x	o		o	o
	1 : 20 Dilution probe	x	o		o	o
	1 : 10 Dilution probe	x	o		o	o
	1 : 6 Dilution probe	x	o		o	o
UPAS MSU Ambient air	8-channels		x			
	16- channels		x			
UPAS MSU- Internal High-Temperature	2-channels		x			
UPAS MSU- High-Temperature	2-channels	x	o			
	4-channels	x	o			
	6-channels	x	o			
	8-channels	x	o			
	10-channels	x	o			
UPAS MSU- Steam	2-channels		o			
	4-channels		o			
	6-channels		o			
	8-channels		o			
	10-channels		o			

Position	Description	A	FE	MK	PT	ES
UPAS-Steam unit	Measurement VOC in steam		o			
UPAS- Inline dilution probe (MK-version)	With additional heated-line system adapted to the application	x	o		o	o
UPAS- Mini-Stripper (quality measurement)	Strip-system for small measurement ranges (VOC in HCL, H_2O and in other components)	x	o			o
UPAS Inline stripper (quantity measurement)	Strip-system for high measurement ranges (VOC in H_2O and in other components) Wastewater Monitoring	x	o			o

A- Additional equipment not only for the UPAS-FID product line (stand-alone installation, also for other systems possible)
X – Integrated possible components
O – Options for the UPAS-FID product line