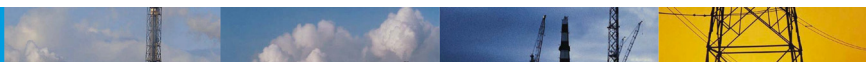




WIM 9900 Wobbe Index - and Calorimeters

Measures Wobbe Index, Combustion Air Requirement (CARI) and Calorific Value of Natural Gas, Fuel Gas, COG/BFG etc.

- Rugged design
- Epoxy coated stainless steel enclosure
- Residual oxygen content principle
- Suitable for outdoor installation (no need for expensive HVAC unit)
- Insensitive to ambient temperature fluctuations
- Fast response ($T_{90} < 5$ sec)
- High accuracy and low noise
- Automatic calibration
- Effective measuring range 0-100% FS
- Output in MJ/Nm³, MJ/Sm³ and BTU/SCF
- MODBUS RTU (RS485)
- Optional specific gravity output
- Minimal maintenance
- Flameless analyser
- Suitable for corrosive and dirty applications
- Suitable for high sulphur applications
- Suitable for installation in EX environment





Specifications

| | |
|---------------------|--|
| Service | Natural gas, Fuel gas, Biogas, Flare gas etc. |
| Measuring principle | Residual Oxygen Method |
| Sample wetted parts | SS316, Hastelloy C and Platinum |
| Installation | Safe Area ATEX Cat 2G EExp dem (ib)IIC T3/T4 (Zone 1) ATEX Cat 3G Ex purge (Zone 2) NEC/NFPA Zone 2 purge |

Measuring ranges

| | |
|---------------------------|--|
| Wobbe Index | 50 MJ/Nm ³ span in 0-100 MJ/Nm ³ range |
| Accuracy | ± 0,4 % of measured value for natural gas |
| Repeatability | ± 30KJ/Nm ³ |
| Drift | <±30KJ/day (typical) |
| Response time | T90 < 5 seconds (2.6 sec. dead time, 2.2 sec. rise time) |
| Calorific Value (option) | 50 MJ/Nm ³ span in 0-120 MJ/Nm ³ range |
| Specific Gravity (option) | 0-3 |

Outputs

| | |
|------------------|--|
| Display | Full colour TFT screen for trend display |
| Analogue outputs | 2 off isolated 0/4-20 mA (optionally up to 4) |
| Digital outputs | Malfunction, calibration status, calibration alarm |
| Digital input | Start calibration / Start validation |
| Communication | MODBUS RTU (RS485) Bidirectional |

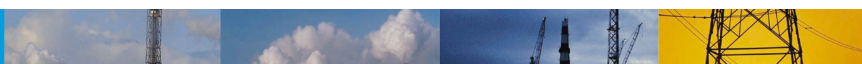
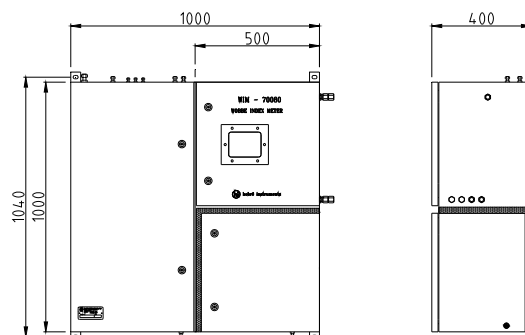
Utilities

| | |
|-------------------|--|
| Power supply | 230 VAC,50 Hz / 110 VAC,50/60 Hz |
| Power consumption | Indoor installation 350 VA max; outdoor installation 850 VA max Instrument air 10 NI/min at 3barG minimum 50 NI/min for Ex purge option (170NI/min pre purge flow) 50 NI/min for vortex cooler option |
| Sample flow | 1 NI/min |
| Sample pressure | 1,5 – 5 Barg (20-70 PSIG) (consult factory for lower or higher supply pressure) |

Installation

| | |
|----------------------|--|
| Mounting | Wall mounting / mounted on a free standing frame |
| Dimensions (HxWxD) | 1 x 1 x 0,4 m / 1.8 x 1.2 x 0.5 m depending on version |
| Weight | 120 - 250 kg, depending on version |
| Enclosure protection | IP65 |

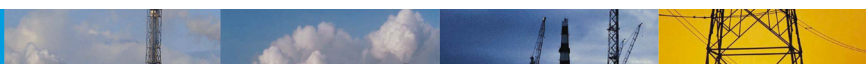
| | |
|------------------------------|--|
| Allowed ambient temperatures | 10..40°C |
| ATEX 2G (Zone 1) | 10..40°C as a standard |
| Safe area / ATEX 3G (zone 2) | -20..55 C with optional cooling or heating |





| Part number | |
|--------------------|--|
| WIM9901 | Standard range 40MJ/M3 (single mixing chamber) |
| WIM9902 | Extended range 95MJ/M3 (dual mixing chamber) |
| P | P version (sample pressure >1,5 barg) |
| LP1 | LP1 version with one pump (sample pressure <1,5 barg) |
| LP2 | LP2 version with two pumps (sample pressure <1,5 barg and high dewpoint) |
| 115 | Power supply 115VAC, 60Hz |
| 230 | Power supply 230VAC, 50Hz |
| 0 | No heated gas mixing compartment |
| H | Heated gas mixing compartment |
| HA | Hot application |
| 0 | No specific gravity meter |
| SGC | Vibrating spool specific gravity meter |
| SGU | Hobre specific gravity meter |
| 0 | Safe area version |
| 1 | Zone 1 IIC T3 / T4 hazardous area (excluding backup purge) |
| 2 | Zone 2 IIC T3 / T4 hazardous area |
| Z | Z-purge for NEC zone 2 |
| 2 | 2 analog outputs |
| 4 | 4 analog outputs |
| 2S | 2 analog outputs and serial communication |
| 4S | 4 analog outputs and serial communication |
| 0 | No isolated relais added |
| R | Isolated relais added |
| C | Volt free contacts |
| 0 | No fastloop inside the analyser |
| F | Fastloop installed inside analyser |
| FA | Fastloop with alarm installed inside analyser |
| 0 | No vortex cooler installed |
| C | Vortex cooler installed (Zone 1 above 40C zone 2 above 50C) |
| 1 | Analyser suitable for wallmounting |
| 2 | Analyser mounted on free standing frame (SS304) |
| 3 | Analyser mounted on free standing frame with sunroof |
| 4 | Zone 1 analyser (frame is already included) |

Separate back up purge for ATEX 2G (zone 1) IIC T3 / T4 is optional available





Hobre Instruments Specific Gravity cell (option SGU)

Designed for installation inside the gas mixing compartment of the Hobre Instruments Wobbe Index analysers and Calorimeters to generate a heating value output.

Specifications

| | |
|------------------------|---|
| Installation | General Purpose and ATEX 2G / 3G Group IIC T4 |
| Specific Gravity range | 0-3 |
| Analog output | 4-20 mA (error: 3 mA); max. load 800 ohm |
| Ambient temperature | 5...65°C |
| Connection | 1/8" OD (SS) |
| Material body | Aluminium (anodized) |
| Mounting | panel mounting |

Performance

| | |
|-------------|------------------|
| Update time | every 10 seconds |
| Accuracy | +/- 0,5% FS on n |

Oscillation type Gravity cell (option SGC)

Fast responding, high accurate SG cell to generate a heating value output

Specifications

| | |
|------------------------|---|
| Installation | General Purpose and ATEX 2G / 3G Group IIC T4 |
| Specific Gravity range | 0-3 |
| Analog output | 4-20 mA; max. load 800 ohm |
| Ambient temperature | -25...70°C (optional up to 200°C) |
| Material body | SS316 |
| Mounting | Inline |

Performance

| | |
|-------------|----------------------------|
| Update time | Continuous measurement |
| Accuracy | +/- 0,5% FS on natural gas |

Back up purge requirement for ATEX 2G (Zone 1) IIC T3 / T4 environments

The ATEX 2G (Zone 1) WIM will be supplied including a purge unit and is certified for use in a Zone 1, gas group IIC T3 / T4 environment (Certificate: KEMA 03 ATEX 2410 X). Due to the presence of the catalytic oven inside the oven compartment, precautions should be taken to prevent for unsafe situation during a purge failure. For this reason a purge back up system has to be installed to comply with the regulations prescribed in the EN50016 (Electrical apparatus for potentially explosive atmospheres. Pressurized apparatus "p").

This back up facility can be arranged locally or can be optionally supplied with the analyser. Please consult the factory for further information.

Rev. 2, 21-08-2009

