InsuLogix® G2
Acetylene, Hydrogen, and Moisture Monitor

- **Laser technology - detects down to 0.5 ppm acetylene in oil**
- **Provides actionable information for oil-filled transformers**
- **Easy to install - proven installation in 1.5 hours**
- **Long life, low maintenance (10+ years)**
- **High performance acetylene measurement**

DESCRIPTION

The InsuLogix® G2 provides early detection of faults in power transformers. The G2 measures the presence of two key gases, plus moisture, for early onset detection of internal faults.

Gases created during an internal fault are a key indicator used to flag the fault's severity and evolution in power transformers.

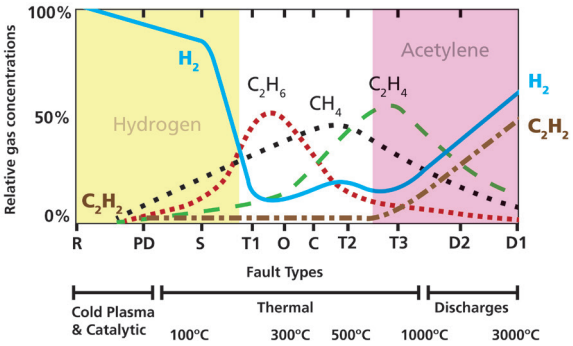
By detecting and measuring both hydrogen and acetylene, the InsuLogix® G2 is the only monitor that a transformer operator needs to efficiently and cost effectively monitor the health of the active part of power transformers.

WHY ACETYLENE AND HYDROGEN?

Hydrogen is an important gas used for early detection of majority of incipient faults. Hydrogen gas is generated during a low temperature fault (>150 °C). Monitoring the hydrogen rate of change in oil to detect the faults in their early stages is a strategy that many utilities have following for the last 30 years.

Acetylene is a gas generated in oil when high energy faults create temperatures exceeding 700 °C. When levels of acetylene exceeding 1 ppm concentration in oil are detected, operators begin planning action for the asset.

In most situations, the alarms generated by gas monitors (multigas or single gas) are validated by testing an oil sample in a laboratory before the transformer expert makes a decision.



The graph above shows the value of hydrogen (H_2) in detecting the early phases of a fault as well as the critical value of acetylene (C_2H_2) if and when the fault progresses to a level which requires immediate attention.

*IEEE C57-104 2019: Figure 1 – Relative percentage of dissolved gas concentrations in mineral oil as a function of temperature and fault type [B86]**

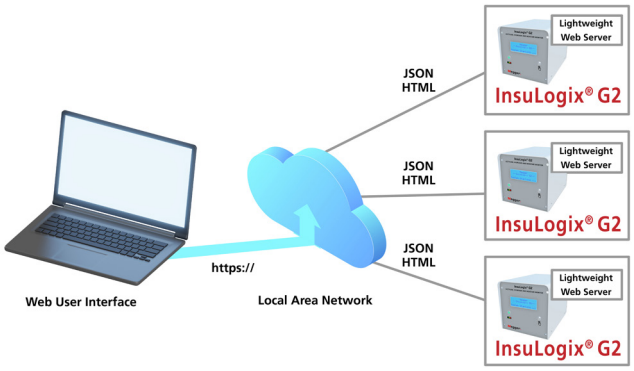
** [B87] Duval, M., "Ongoing Activities at IEEE, IEC and CIGRE on DGA", Proceedings of the Transformer & Switchyard Users Group (TSUG) Meeting, St-Louis, Aug 5, 2013*

InsuLogix® G2
Acetylene, Hydrogen, and Moisture Monitor

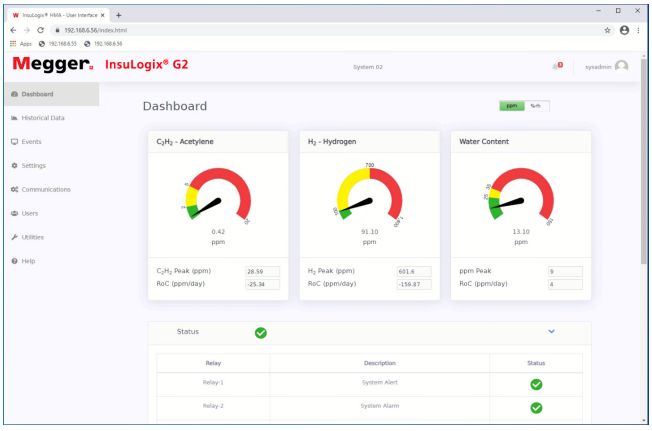
ADDITIONAL FEATURES

- Modbus, DNP3, and IEC 61850 communication protocols available
- RS485 and Ethernet ports
- 12 Configurable solid-state relays
- Web user interface for data visualization and administrative tasks
- Multiple G2 units can be accessed via a single web server session
- LED status indicator
- LCD display of key gases
- Fully compliant to industry guidelines for instrumentation operating in substation environment

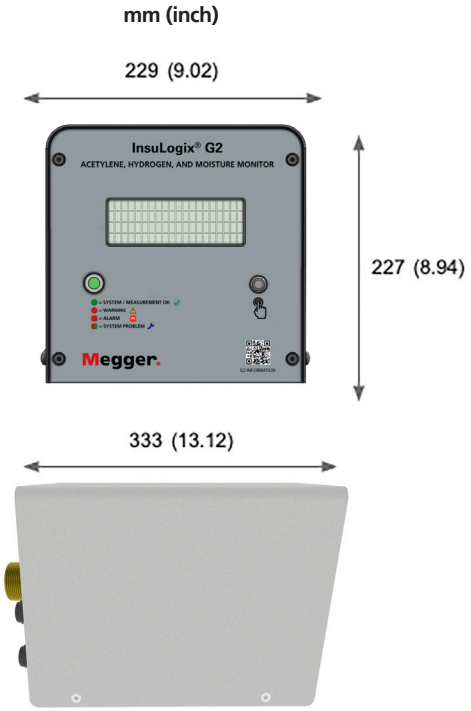
Web user interface – communication architecture



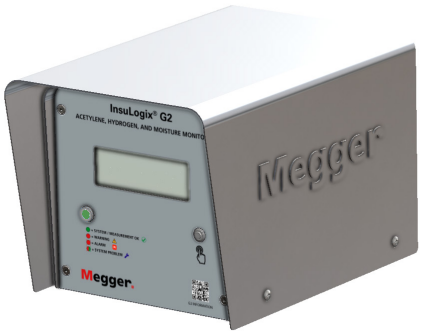
User interface main dashboard



General Dimensions



DISCLAIMER: Illustrations, specifications, and average values are subject to change. Megger reserves the right to revise the datasheet at any time, without notification



Sunshade Kit – G2, Part # 1015-561

InsuLogix® G2
Acetylene, Hydrogen, and Moisture Monitor

SPECIFICATIONS

Measuring range	C_2H_2: 0.5-500 ppm (dissolved-in-oil) H_2: 25-5000 ppm (dissolved-in-oil) H_2O: 0-95 % RH
Accuracy	C_2H_2: ±0.5 ppm or 15 % of reading** H_2: ±25 ppm or 15 % of reading** H_2O: ±4 ppm or 2 % RH ** whichever is greater
Low detection limit (LDL)	C_2H_2: 0.5 ppm (dissolved-in-oil) H_2: 25 ppm (dissolved-in-oil)
Repeatability	C_2H_2: 14 % H_2: 10 %
Oil pressure rating	Full vacuum - 100 psi
Alarm relays	12 programmable relays solid state (Form C)
Signal relays (1-8)	Rated load: 0.50 A at 125 V AC, 1 A at 24 V DC Max switching voltage: 125 V AC, 60 V DC
Power relays (9-12)	Rated load: 10 A at 120 V AC, 8 A at 30 VDC Max switching voltage, 250 V AC, 125 V DC
Analog output	4 DC current outputs: 0/4-20 mA (optional)
Communication protocols	Modbus, DNP3, IEC 61850
LED status indicator	Multicolor; Green-Red
Display type	80 character LCD (4 x 20)
Display size	146.00 mm x 62.50 mm (5.75 in. x 2.46 in.)
Backlight:	White LED
Data recording and event logs	10 years at default (1 hour) recording frequency; minimum 2 years
User interface software	Residing in unit, web-server based
Input power supply	AC input voltage range: 90 – 264 V AC (47 – 63 Hz); 1.4 A (3 A Max) DC input voltage range: 127 – 370 V DC 120 W Internally fused at 3 A
Rear panel RJ45	IP67 RJ45 female connector with bayonet style locking cap; 10/100Base-T
Conduit glands	3/4 in. Liquidtight style 0.315 in. to 0.630 in. diameter cable capacity

ENVIRONMENTAL

Operating temperature	-40 to +65 °C
Storage temperature	-40 to +85 °C
Operating humidity	5 to 95 % RH non-condensing

PHYSICAL

Storage humidity	5 to 95 % RH non-condensing
Dimensions	227 mm x 229 mm x 333 mm (8.9 in. x 9.0 in. x 13.1 in.)
Weight	13.5 kg (29.76 lb)
Installation	1.5 in. NMPT connection from monitor
Operating altitude	0 - 2000 m
Protection class	IP66 (NEMA 4X)
Pollution degree	4 – Electrical equipment for outdoor use
Regulatory compliance	IEC 61010-2 081-2020 IEC 60529-2013 IP66 EN 61326-1:2013 EN 61326-6 EMCS111203-FCC_IC ESLU111203 - C22.2 No. 94.2-07 ESLU111203-IEC

Note: Testing performed in both N2 blanketed and free breathing environments showed no significant difference in results

Reported values are resultant from testing with ball valves

ORDERING INFORMATION

Description	Part number
Online DGA InsuLogix G2	1015-313
Included Accessories	
Oil sample port quick connector with 25 cm (10 in) tubing	1015-318
Oil port sample tubing 61 cm (24 in)	2016-324
Modbus protocol	Included in unit
IP67 rear panel Ethernet connector	1015-317

Description	Part number
Optional Accessories	
DNP3 protocol	1015-314
IEC 61850 protocol	1015-316
Analog output module	1015-315
Mounting hardware kit (Union + Nipple, 1.5 in)	1015-565
Sunshade kit - G2	1015-561
G2 Extended warranty/year (2 year included) (3 Additional years maximum available)	Y12-WARRANTY-G2
	Y24-WARRANTY-G2
	Y36-WARRANTY-G2

SALES OFFICE
Megger Valley Forge
400 Opportunity Way
Phoenixville, PA, 19460, USA
T. 1-610 676 8500
F. 1-610-676-8610

InsuLogixG2_DS_V01b
www.megger.com
ISO 9001

Megger®