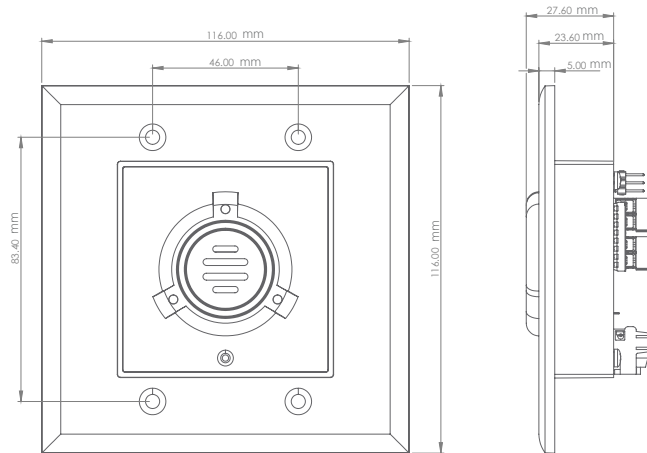




## VARIABLE REFRIGERANT FLOW SENSOR



### QVRF SERIES

## PRODUCT DESCRIPTION

The QVRF transmitter is a cutting-edge refrigerant gas transmitter that significantly advances HVAC technology by providing customized climate control, better energy efficiency, and enhanced comfort for various buildings. It is housed in a IP 54 enclosure and complies with ASHRAE 15 and IEC 60335-2-40 standards. The QVRF uses Non-dispersive Infrared (NDIR) absorption to ensure precise readings at specific frequencies. It features an LED status indicator, a buzzer, and two user-programmable SPDT fixed relay outputs. The units can operate independently or be networked with controllers via an RS-485 with Optomux , Modbus or Bacnet communication port. Calibration is straightforward, non-proprietary, and can be performed by any qualified technician. For specific gases, consult the factory

- **> 12 years life expectancy in normal commercial environments**
- **Non-dispersive infrared (NDIR), immunity to poisoning.**
- **2 SPDT Relay outputs**
- **RS-485 protocol:** OptoMux or Modbus RTU or BACnet
- **Multicolor LED Status Indicator**
- **Easy installation** to a two-gang electrical box
- **IP Rate:** IP54 with splash guard
- **Compliance:**
  - IEC 60079-29-1
  - ARHRAE Standard 15
  - IEC/UL 60335-2-40

## SPECIFICATIONS

VOLTAGE	24VDC nominal, range 18 to 30VDC 24VAC nominal, range 15 to 24VAC 50/60HZ
FUSE	F1 on the Main Board: Polyswitch 750mA Polyswitch device resets after the fault is cleared and power to the circuit is removed.
SENSING ELEMENT TECHNOLOGY	Non-dispersive infrared (NDIR)
SENSOR LIFE	> 12 years life expectancy in normal commercial environments
ACCURACY	± 2.5%LFL at 0 – 25%LFL standard measurement range ± 5.0%LFL at 25 – 50%LFL extended measurement range
COVERAGE AREA	(see table of gas)
MOUNTING HEIGHT	(see table of gas)

## SPECIFICATIONS

FACTORY CALIBRATION RANGE	(see table of gas)
DISPLAY	n/a
PANEL CONTROL	n/a
PANEL INDICATOR	LED Status: Green blinking: Normal status with communication Yellow flash: Sensor Fault Red flash: Alarm and purge
WARM UP TIME	15 minutes @ 25 C using 24VDC power
RELAYS OUTPUTS	2 Relays SPDT (Form C), dry contacts R1 > 20% LFL    R2 < 15% LFL    R2 fault 1.0 A maximum at 30 VDC (resistive load) 0.3 A maximum at 125 VAC (resistive load)
RELAYS LIFE EXPECTANCY	Mechanical : 50,000,000 Operations minimum @36000 operations/hours electrical : 200000 operations minimum @ rated load
DIGITAL OUTPUT	RS-485 Modbus (Proprietary GES Controller Protocol) connects to Q4C Controller, M-Controller and Q-Controller and BACnet /MSTP
BAUD RATE	2400, 4800,9600, 19200, 38400 Bits/Second (Default: 4800 BPS)
BUZZER	50 db at 10 cm, 2700 Hz When Relay 1 is ON , The buzzer is on Buzzer
OPERATING ENVIRONMENT	Indoor Use only
OPERATING TEMPERATURE	(see table of gas)
STORAGE TEMPERATURE	-49 to 185°F (-45 to 85°C)
OPERATING HUMIDITY	5% to 95% RH non condensing
OPERATING PRESSURE	Atmospheric +/-10%
ENCLOSURE	IP54 ratings with splash guard
WIRING	12 AWG to 24 AWG for Screw Terminals Blocks(De -Pluggable), 16 AWG or 18 AWG wire for Power supply ( 1km max)
CABLE SPECIFICATION	BELDEN 9841 or equivalent ,120 ohms Input
DIMENSIONS	5.9"x5.9"x1.9"(150mm x 150mm x 50mm)
WEIGH	Less than 0.5lbs

Ensure a complete understanding of all applicable Federal, State, Provincial and Local Health and Safety laws and regulations before using these products.

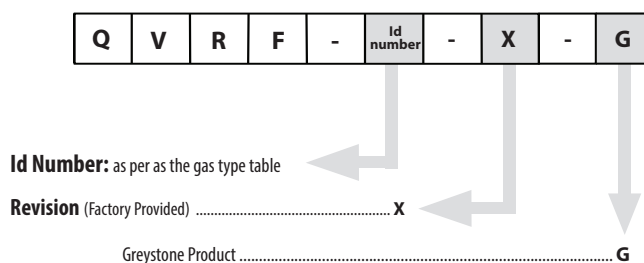
### Notes

1 QVRF has a half-wave rectifier circuit on board. You will damage devices if you mix half wave and full wave rectifiers on the same AC source. Use extreme caution when sharing a common AC source. Sharing a common DC source is less problematic.

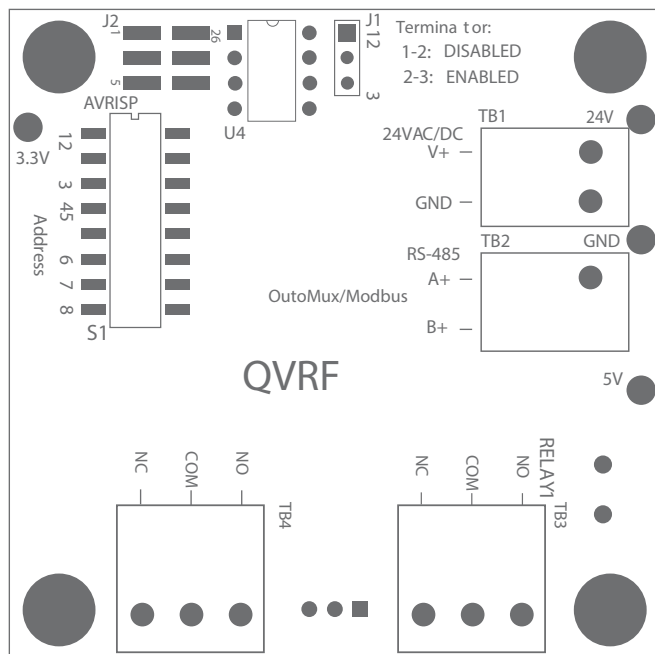
## ACCESSORIES

Q-CONTROLLER	Communication central unit, RS-485 port, Modbus protocol, BACnet /MSTP, 3 Relay , Analog outputs
M-CONTROLLER	Communication central unit, RS-485 port, Modbus protocol, BACnet /MSTP, 3 Relay , 8 Analog outputs
Q4C- CONTROLLER	Communication central unit, RS-485 port, Modbus protocol, BACnet /IP

## ORDERING CODE



## WIRING INFORMATION



## QVRF

TERMINAL		FUNCTION
TB3 TB4	NC: Normally Close COM: Common NO: Normally Open	2 x Relays Outputs R1 > 20%LFL R2 < 15%LFL
TB1	24VAC/VDC GND	Power IN
TB2	A+ B-	RS-485 port for OPTIMUX and MODBUS
S1	AVRISP	Dip switches for OPTOMUX and MODBUS settings

GAS TYPE	SPAN RANGE	ORDERING CODE	AREA FT <sup>2</sup> (M <sup>2</sup> )	RADIUS FT (M)	MOUNTING HEIGHT	OPERATING TEMPERATURE F ( C )
R32	0-50%LFL	R32	7500 (696.7)	49 (14.9)	6 inch to 18inch (0.16m to 0.46m)	- 50 to 122 ( - 45 to 50)
R454a	0-50%LFL	R454a	7500 (696.7)	49 (14.9)	6 inch to 18inch (0.16m to 0.46m)	- 50 to 122 ( - 45 to 50)
R454b	0-50%LFL	R454b	7500 (696.7)	49 (14.9)	6 inch to 18inch (0.16m to 0.46m)	- 50 to 122 ( - 45 to 50)
R454c	0-50%LFL	R454c	7500 (696.7)	49 (14.9)	6 inch to 18inch (0.16m to 0.46m)	- 50 to 122 ( - 45 to 50)