



Safety Guide

This Safety Guide is applicable for SmartTrak® 100HP Ultra-High-Pressure Mass Flow Meters and Controllers.

Ultra-High-Pressure Safety

Operating equipment under very high-pressure does have safety risks of which you should be aware. This guide is intended to educate the end user in general terms of the risks of high-pressure applications and to give a complete explanation of all high-pressure do's and don'ts. It is recommended that end users educate themselves on the specifics of their application and read any information that employee provides on the subject.

Proceed with this Safety Guide in its entirety, the [Quick-Install Guide](#), and refer to the [SmartTrak 100 Series Instruction Manual, Chapter 2](#) for complete installation and operation instructions.

Ultra-High-Pressure Specifications

The 100HP mass flow controller is rated for a variety of flow rates, pressure drops, inlet pressures, and gas types. However, each will need to be rated specifically for each of these different applications. The 100HP is rated to 1000 psig (69 barg) operating pressure, 1000 psig (69 barg) burst pressure (within otherwise listed on the enclosure data label). You must know the capacity of each specific model, as it will vary for specific gases and applications.



Warning!

The working pressure is defined on the flow meter and controller label. Check label and pressure pressure before installing in the line. If the pressure rating listed is not suitable for your application, the instrument should not be used. Consult the factory for the next steps.

SmartTrak has a maximum flow rate of 100 scf/hour at 1000 psig (69 barg) with a maximum of 1% of full scale flow. Some manufacturers (in case of a possible shut-off valve) advise with the 100HP. Make sure the Cv of the shut-off valve is sufficiently large so as the flow rate is limited. Flow coefficient must be less than the full scale of the 100HP.

Gas-Cylinder Pressure Specifications

As mass flow meter is controller is commonly featured for many applications and this is particularly true when dealing with pressures about 1000 psig (69 barg). The 100HP is designed to be used at a factor 1000 psig (69 barg).

Thus, the 100HP is fully capable of controlling CO₂ standard, trace gas and gas cylinders. However, some gas cylinders can reach pressure exceeding 1000 psig (69 barg) and therefore are not compatible with the 100HP. While the 100HP is designed to use with most gas cylinders, make sure the 100HP is rated pressure exceeding 1000 psig (69 barg).

It's important to note that gas properties are pressure dependent. All pressure ratings are based on compressed nitrogen, and many gases cannot be used with the 100HP at 1000 psig (69 barg). Oxygen is a good example of this. Please consult the data sheet of your meter or controller for the most specific ratings, or consult the factory.

Pre-Installation Safety Procedures

1. Please read all instructions and warning markings on the instrument, as well as all appropriate sections of the [SmartTrak 100 Series Instruction Manual](#), Chapter 2 and Chapter 3 before using this product.
2. General operation, display interface, PC software and electrical installation are same as a standard SmartTrak 100 Series mass flow meter and controller.
3. Verify proper connection of pressure sensor and electrical signal prior to applying pressure or power to the 100HP. See [SmartTrak 100 Series Instruction Manual, Chapter 2](#) for complete installation and operating instructions.