SF Cylinder Heater

Ordinary Areas – 120 Vac

Application

The SF Cylinder Heater provides a clean, simple and quick method for applying heat to cylinders containing SF6. A 130°F (54°C) cut-out thermostat is designed into each heater to prevent overheating. Heater efficiency is improved through the use of a custom designed cylinder blanket.

SF6 is stored in 9.25" diameter cylinders in liquid form under pressure. Utilities (Transmission and Distribution Divisions) use SF6 circuit breakers for their high voltage (69,000-400,000 volts) transmission lines. The SF6 provides an inert blanketing media that prevents arcing when the breakers open and close. Periodically, maintenance crews need to hook up the storage cylinders to the circuit breakers to add SF6 to the breaker and increase the system's operating pressure. When the valve is opened and gas flow begins, the cylinder temperature drops rapidly and slows down the flow of SF6 into the circuit breaker. Heat must be added to the cylinder to make up the heat losses caused by vaporizing from a liquid to a gas.

Applying heat safely not only converts this time-consuming activity into an efficient and convenient operation but, also ensures maximum removal of SF6 from the cylinder and eliminates the return of partially filled cylinders.

Ratings/Specifications

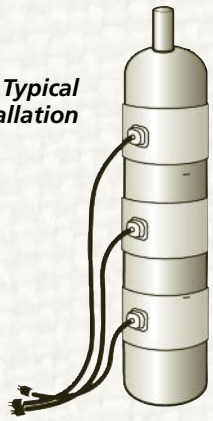
Size: 12" x 24" (305 mm x 610 mm)

PowerOutput:
500 watts @ 120 Vac, 4.2 amps

Watt Density:
1.8 w/in2 (2790 w/m2)

Attachment Method:
quick release spring system

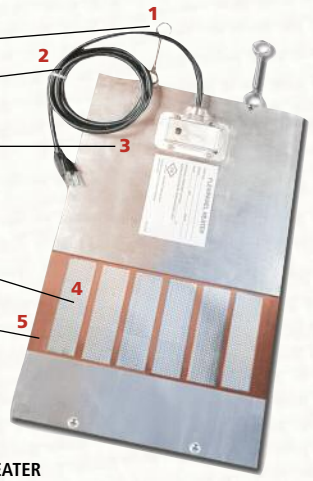
Ground Plane
hardened 10mil aluminum sheet



Typical Installation

Construction

1. Quick Release Spring System
2. 6' Cordset with 120 Vac Plug
3. Protective Metal Jacket
4. Parallel Circuit High Temperature Alloy Heating Element
5. Heat-Laminated, High Temperature Silicone Rubber Insulation



Part # CYL-SFHEATER

Product Features

- Operates at less than 2.0 w/in 2 (3100 w/m2 allowing for even heat distribution and maintenance of a stable temperature over the entire surface.
- Integral 130°F (54°C) thermal cut-out thermostat provides protection from burnout. The heating panels operate safely below the 135°F (57°C) maximum allowed on most cylinders.
- Proprietary heating element is stamped from a high-temperature alloy, INCONEL 600. Multiple electrical paths (minimum of six) eliminate series wire burnouts.
- INCONEL heating element is laminated in silicone rubber and encased in a metal jacket providing a tough, watertight seal.
- Spring mounting for quick installation and removal.

SF Cylinder Heater Performance

Three 500 watt RT FlexiPanel heaters attached and operating:

1. at 70°F (21°C), the heating system will maintain the cylinder at or above 70°F (21°C) with flow rates of up to 150 lbs/hr.
2. at 0°F (-18°C) the heating system with an SF insulation blanket will maintain a 70°F (21°C) cylinder at or above 70°F (21°C) with flow rates of up to 100 lbs/hr.
3. at -20°F (-29°C) the heating system with an SF insulation blanket will maintain a 40°F (4°C) cylinder at or above 40°F (4°C) with flow rates of up to 100 lbs/hr.
4. at 0°F (-18°C) without a heating system, loading 115 lbs of SF6 into a circuit breaker system can take up to 8 hours.

Lead Wires and Terminations

Each RT-521 5F6 FlexiPanel heater is equipped with a 6' (1.83 m) long SJT cord with a standard three-prong male adapter.

Circuit Breaker Sizing and Type

Multiple panels can be energized from the same circuit breaker based on operating voltage and current draw. Breaker sizing should be based on the National Electrical Code, Canadian Electrical Code or any other applicable code.

The National Electrical Code and Canadian Electrical Code require ground-fault protection of equipment for each branch circuit supplying electric heating equipment. Check local codes for ground-fault protection requirements.

Cylinder Blanket Accessory

SF Cylinder Blanket is manufactured from silicone coated glass cloth with 1-1/2" fiberglass insulation. The cylinder blanket conserves heat and maximizes heat transfer into the cylinder.

Part # CYL-BLANKET

Gas Cylinder Warmers

Specifications

- Heat and Insulates
- Self-Regulating Grounded Heating Element
- Maintains Bottom between 90° - 130° F
- Maintains Top between 80° - 120 F° F
- Moisture and Oil Resistant
- Ability to Fit Most Gas Cylinders
- Available in 120 or 240 volts
- Up to 150 Watts
- Model for Outdoor Use Available
- Available for Hazardous Locations
  (Class I Division I Groups C & D)

AVAILABLE FOR
NON-HAZARDOUS & HAZARDOUS GAS APPLICATIONS

Available in these sizes:
8" diameter x 48" high
9" diameter x 51" high
10" diameter x 47" high
15" diameter x 43" high
120 volts & 240 volts

Gas Cylinder Warmers – Basic

Part #	Cylinder Diameter	Cylinder Height	Voltage
CYL-WM8X48-120V	8"	48"	120V
CYL-WM8X48-240V	8"	48"	240V
CYL-WM9X51-120V	9"	51"	120V
CYL-WM9X51-240V	9"	51"	240V
CYL-WM15X43-120V	15"	43"	120V
CYL-WM15X43-240V	15"	43"	240V

Gas Cylinder Warmers for CSA Approved Hazardous Locations Class 1 Div 1 Groups C & D

Part #	Cylinder Diameter	Cylinder Height	Voltage
CYL-WMCSA8X48-120V	8"	48"	120V
CYL-WMCSA8X48-240V	8"	48"	240V
CYL-WMCSA9X51-120V	9"	51"	120V
CYL-WMCSA9X51-240V	9"	51"	240V
CYL-WMCSA10X47-120V	10"	47"	120V
CYL-WMCSA10X47-240V	10"	47"	240V
CYL-WMCSA15X43-120V	15"	43"	120V
CYL-WMCSA15X43-240V	15"	43"	240V

For Industrial Environments

Electric Gas Heater for Argon, Carbon Dioxide, Nitrogen, Nitrous Oxide & Oxygen

Adjustable temperature range for Heated Gas 5-200° for outgoing Gas. 1/2" Tube Connections is standard, requiring compression fittings*.

Our Electric Gas Heater is an excellent alternative to the throw away styles that have been used on CO_2 high pressure bottle for years. When needing service, these heaters are able to be repaired, versus simply throwing the heater away and buying new.

Flow	up to 20,000 scfh
MAWP	4000 psig
Fluid	Gaseous Nitrogen / CO_2 / Argon / Oxygen
Rise in Temp	up to 200°F
Operating Press	300 psig
Pressure Drop	3 to 5 psig at 3000 psig & full rated flow
Fluid Passages	304 Stainless Steel
Power Required 9 amps, 60 hertz	120 vac, single phase,
Watts	500 or 1,000
Inlet Conn.	½" tube
Outlet Conn.	½" tube
Dimensions	30 tall x 12" wide x 6" deep
Weight	~ 30 lbs.

The unit generally includes the following:

- NEMA 4 Electrical Enclosure
- Aluminum heater assembly with replaceable heater element
- Control circuit fuse
- Outlet Gas Temperature Switch – range of -50 to +1200F

Electric Gas Heater

Part #	Description
EGH-1-500	500 Watt Version
EGH-1-1000	1,000 Watt Version

** Unit available with optional Pipe Thread Connections*