

Outstanding Heater Performance

Frontier is designed for heating chemicals and solvents in hazardous operating environments. Suitable for heating a wide variety of flammable and non-flammable chemistries using electropolished stainless steel wetted materials for improved cleanliness. Offers outstanding performance over a wide range of flow and temperature requirements. Available up to 36kW, the Frontier is the most powerful inline solvent heater available.



Frontier

| | |
|---|--|
|  <p>Watts: 3kW- 36kW, *ATEX Zone 1 & 2, 3-18kW</p> |  <p>Pressure: Up to 690 kPa (100 PSI)</p> |
|  <p>Volts:120 to 480 volts, (3 phase standard), single phase (optional), *ATEX Zone 1 & 2, 200-480V, Single or 3 Phase</p> |  <p>Certification: CE, S2, UL823, CSA22.2, ATEX II 2G Ex eb IIc T2 Gb, ATEX II 3G Ex nc IIc T4 Gc</p> |

 Compatibility

| | | | | |
|--|---|---|---|--|
| <input checked="" type="checkbox"/> NO | <input checked="" type="checkbox"/> YES | <input checked="" type="checkbox"/> YES | <input checked="" type="checkbox"/> YES | <input checked="" type="checkbox"/> NO |
| acids | water | bases | solvents | gases |

FEATURES

Engineered for Safety

- Heat source isolated from flammable chemistries
- Certified to UL823 compliant and ATEX
- Suitable for Class I, Div 2 and Zone 1 & 2 hazardous environments

Indirect Heating Design

- Provides an evenly heated surface and reduces surface temperatures and hot spots
- Improves chemical longevity and performance for temperature-sensitive chemicals

Advanced Cleanliness

- Electropolished 316SS wetted surfaces and no o-rings in the flow path minimizes contamination of the process liquid
- Crevice-free design reduces risk of contamination
- Non-cast design maintains quality of electropolished surfaces

Designed for Performance

- More available heating power than other inline solvent heaters (up to 36kW)
- Lower mass for faster response time
- Minimizes fluid pressure drop even at very high flow rates (>60 LPM)

APPLICATIONS

- Semiconductor
- Sterilization/Cleaning
- Electroless Nickel Plating

Frontier Chemical and Solvent Heater

APPLICATIONS

- Semiconductor
- Medical Device Cleaning
- Electroless Nickel Plating

SPECIFICATIONS

| | |
|-------------------|--|
| Wattages | 3 kW to 36 kW |
| Voltages | 120 volts to 480 volts, Single phase or 3 phase |
| Pressure Range | 689 kPa (100 PSI) |
| Fluid Connections | 12mm, 19mm, or 25mm Custom connections available |
| Safety Features | Grounded construction Bimetallic TCO Insulated Housing |

DIMENSIONS



| Wattage | L - Length | |
|---------|------------|------|
| | kW | Inch |
| 3-6 | 12.63 | 321 |
| 9-12 | 18.13 | 461 |
| 18-24 | 29.13 | 740 |
| 36 | 40.13 | 1019 |

MODEL NUMBER BREAKDOWN

| Series | Element Type | Wetted Material | Wattage | Voltage | Phase | Plumbing Connections (316SS) | # of Sensors | Overtemp Sensor Type | # of TCO | TCO type | Flow Configuration | Overall Length | Options |
|-------------|---|-----------------|--|--|-------------------------------------|---|--------------|---|----------|--|---|--|--|
| F = Frontal | R = Resistive style P = PTC style (coming) | S = 316SS (EP) | 3 = 3000 6 = 6000 9 = 9000 12 = 12000 18 = 18000 24 = 24000 36 = 36000 | 1 = 208V 2 = 240V 3 = 360V 4 = 480V 5 = 415V 6 = 480V 7 = 440V 8 = 575V 9 = 220V 10 = 200V 11 = skip 12 = 120V 13 = skip 14 = 600V 15 = 230V | 1 = single phase 3 = three phase | --SN50 = 1/2" Non Threaded Tube Stub --SN75 = 3/4" Non Threaded Tube Stub --SN100 = 1" Non Threaded Tube Stub --V50 = 1/2" Swagelok VCR connections --V75 = 3/4" Swagelok VCR connections --SF50 = 1/2" Sanitary Flange --SF75 = 3/4" Sanitary Flange --SF100 = 1" Sanitary Flange | 1 3 | K = K-type TC E = E-type TC H = 100 Ohm RTD (D wire) R = 1000 Ohm RTD (2-wire) | 1 3 | 1 = 232°C TCO for applications up to 125°C 2 = 268°C TCO for applications between 125-300°C 3 = Non-Hermetically sealed 270°C TCO 4 = Non-Hermetically sealed 232°C TCO (for applications up to 125°C) 5 = Non-Hermetically sealed 288°C TCO (for applications up to 200°C) <small>* Are not UL 623</small> | L = Low flow range: (1-30) lpm M = Medium flow range: (20-80) lpm H = High flow range: (50-1) lpm | 1 = 12.63" Overall Length 2 = 18.13" Overall Length 3 = 29.13" Overall Length 4 = 40.13" Overall Length | Blank = No Options X_# = With Wire (specify length in inches and conduit position (ex. X180A) NE = Non-electropolished ## = TBD as needed ### = Custom Clean req |