

Friedrich® S/SR Series Super High Efficiency Condensing Tankless Gas Water Heater

EASY INSTALLATION

- PVC Vent runs up to 70' (2"), 150' (3")
- Easy set up with full text digital display and no dip-switches
- Field gas convertible from natural gas to LP - conversion kit included

READY FOR RETROFITS

- Allows flex venting through existing B-vent up to 50'
- 1/2" Gas line compatibility (subject to local code)
- Approved for installations in Manufactured Home (Mobile Home) environments

KEY FEATURES

- Stainless steel Primary and Secondary heat exchangers provide increased efficiency and durability
- **Exclusive!** Hot-start programming™ ensures the unit is in a ready state between back-to-back usage, avoiding any cold water bursts
- Built-in Recirculation pump for no wait continuous hot water at the tap (SR models)
- Built-in Wi-Fi powered by EcoNet® technology for direct control from your device (optional for S models)

Specifications

Friedrich Model Number		FDTGH-S84i FDTGH-SR84i	FDTGH-S10i FDTGH-SR10i	FDTGH-S11i FDTGH-SR11i
Gas Input Rate	MAX	157,000 BTU/h	180,000 BTU/h	199,900 BTU/h
	MIN	11,000 BTU/h	11,000 BTU/h	11,000 BTU/h
Uniform Energy Factor (UEF)		0.96		
Hot Water Flow Rate Capacity - Gallons Per Minute (GPM)	MAX (35°F)	8.4	10.1	11.2
	45°F Rise	6.9	7.9	8.8
	67°F Rise	4.6	5.3	5.9
Number of Bathrooms ¹		3	4	5
Temp. Range		85°F - 140°F		
Temp. Setting from Factory		120°F		
Installation Type		Indoor (Outdoor Conversion Kit sold separately: RTGH-SX)		
Fuel Type		Compatible with Natural Gas and LP (ships NG with LP conversion kit included)		
Heat Exchanger Material		Primary: Stainless Steel - Secondary: Stainless Steel		
Minimum Activation Flow		0.4 GPM		
Minimum Continuous Flow		0.26 GPM		
Maximum Altitude		10,200 ft.		
Ultra Low NOx		Meets 14 ng/J NOx requirements - SCAQMD Rule 1146.2 compliant		
Warranty		15 Year Heat Exchanger 5-Year Parts 1-Year Labor		

Model Number	FDTGH-S	FDTGH-SR
Height	28-9/16"	
Width	17-5/16"	
Depth	13-11/16"	
Weight	77.6lbs	86lbs
Venting Diam. Allowed	2" / 3"	
Max. Single Vent Run (straight pipe)	70 ft (2") / 150 ft (3")	
Venting Materials	Sched. 40 PVC, CPVC, Polypropylene	
Common Venting (max. units)	2 units ³	
Flex Venting	Allowed: 2" up to 50'	
Manifold Controls (max. units)	Up to 20 units without external control required ⁴	
Controls	Built-in digital display with full-text menus	
Power Supply	120V 60Hz	
Max. Power Consumption	85W (Normal use), 0.7Amps 132W (Anti freeze only), 1.1Amps 3.5W (Standby), 0.03Amps ⁵	100W (Normal use), 0.83Amps 200W (Anti freeze), 1.67Amps 3.5W (Standby), 0.03Amps ⁵
Gas Connection	3/4" NPT	
Hot Water Connection	3/4" NPT	
Cold Water Connection	3/4" NPT	
Condensate Connection	1/2" NPT	
Vent Connections Diameter	2" Band Connections (Adapter required to vent with 3" PVC from unit)	



FDTGH-S/SR Models

Indoor Models

(Outdoor Conversion Kit Available:

RTGH-SX)

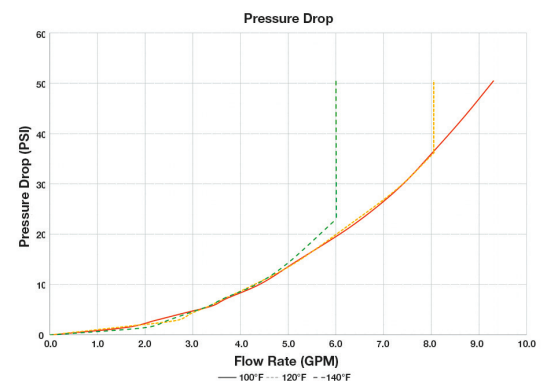
11,000-199,900 BTU/h

Natural Gas/LP Convertible



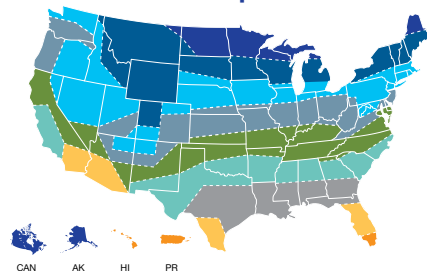
CLEARANCES	
Top / Bottom	12"
Front	1/2"
Sides	1/2"
Back / From Vent Pipe	0"

RECIRCULATION LENGTH (SRI MODELS)	
Pipe Diameter	Max. Recirculation Loop
3/4"	400 ft.
1/2"	100 ft.



¹ Based on simultaneous showers using 2 GPM flow rate pre-mixed with cold water line. Flow rates vary depending on temperature of incoming cold water and water heater set temperature. Refer to capacity table by zone for accurate sizing.
² For indoor application, this is the temperature of outdoor intake air.
³ External check valve required for installation.
⁴ Manifolds with standard RJ25 communication cables.
⁵ If anti freeze is on and combustion is on, total W will be 217W (85+132).
⁶ Recommended 24" clearance for service.

US Ground Water Temperature Zone Map



Average Flow Rates (GPM) by Application

Low Flow Faucet	0.5
Bathroom Faucet	1
Kitchen Faucet	1.5
Shower	2
Dishwasher	2
Washing Machine	3

Flow rates may vary.

Flow Rate Capacity Table by Zone (Gallons Per Minute - GPM)

Use the U.S. Ground Water Temperature Map to locate your zone. Then use the Flow Rate Capacity Table to determine model flow rate by zone. Flow rates calculated for tankless set temperature of 120°F with a mixed shower temperature of 105°F. Ground water temperature varies seasonally.

MODEL #	Zone 1 37°F	Zone 2 42°F	Zone 3 47°F	Zone 4 52°F	Zone 5 57°F	Zone 6 62°F	Zone 7 67°F	Zone 8 72°F	Zone 9 77°F
FDTGH-S(R)11i	4.7	5.1	5.4	5.9	6.3	6.8	7.4	8.2	9.2
FDTGH-S(R)10i	4.3	4.6	4.9	5.3	5.6	6.1	6.7	7.4	8.3
FDTGH-S(R)84i	3.7	4.0	4.2	4.6	4.9	5.3	5.8	6.4	7.2

Venting

SINGLE UNIT: MAX. EQUIVALENT VENT LENGTHS - STRAIGHT PIPE		
Number of 90° Elbows	Max Length 2" straight pipe	Max. length 3" straight pipe
0	70 ft. (21.3 m)	150 ft. (45.7 m)
1	64 ft. (19.5 m)	145 ft. (44.2 m)
2	58 ft. (17.7 m)	140 ft. (42.7 m)
3	52 ft. (15.8 m)	135 ft. (41.1 m)
4	46 ft. (14.0 m)	130 ft. (39.6 m)
5	40 ft. (12.2 m)	125 ft. (38.1 m)
6	34 ft. (10.4 m)	120 ft. (36.6 m)

MIN. VENT LENGTH STRAIGHT PIPE	
Number of 90° Elbows	Min. Length 2" 3" pipe
1	1.0 ft (0.3 m)

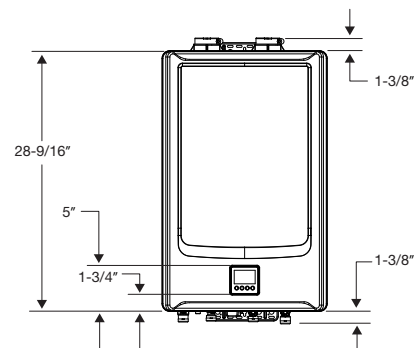
COMMON VENTING	
# of Water Heaters	3" Common Vent
2	60 ft.

SINGLE UNIT: MAX. FLEX VENTING
Max Length 2" flex vent
50 ft.

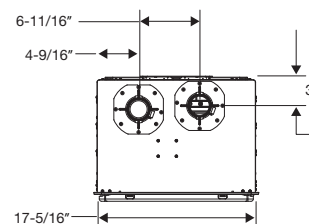
EQUIVALENT FT. OF ELBOWS		
	2" Pipe	3" Pipe
90° Elbow	6 ft (1.83 m)	5 ft (1.52 m)
45° Elbow	3 ft. (0.9 m)	2.5 ft. (0.75 m)

Venting Materials Allowed: Schedule 40 PVC, CPVC, Polypropylene

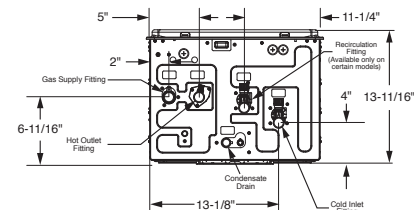
Dimensions



TOP VIEW





BOTTOM VIEW



Hanging bracket, bird screens, LP gas conversion kit are included with water heater.

Parts & Accessories

Condensate Neutralizer	Non-Return Valve	Flex Vent Kit	Pipe Cover	Horizontal Vent Termination	Concentric Vent Termination	AllClear® Water Treatment System	Isolation Valve Kit	Manifold Cables	Outdoor Conversion Kit	Crossover Valve
RTG20329AR (optional)	SP21088	SP21091	RTG20322	2" US: SP21069G 3" US: SP21069E	2" - SP20897 3" - SP20245	RTG20251	RTG20326	RCPN-AMP03-0013111101-0003 (48")	FDTGH-SX	RTG20285
										

In keeping with its policy of continuous progress and product improvement, Friedrich reserves the right to make changes without notice.

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