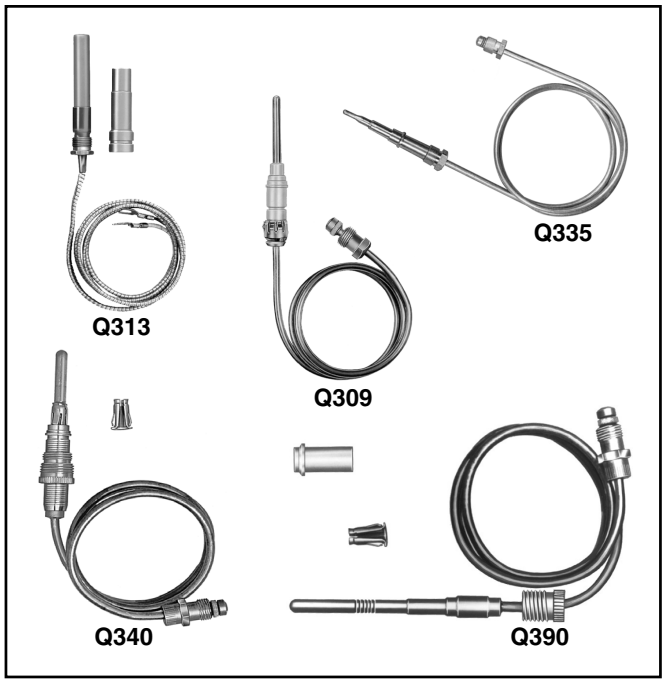
Honeywell

Q309A,B; Q335C; Q340A; Q390A Thermocouples and Q313A,B,C,F Thermopile Generators

PRODUCT DATA



FEATURES

- **Push-in clip, split nut, and adapter assembly for easy pilot burner installation.**
- **Spade or quick-connect terminals available for millivolt gas control connections.**
- **Male nut connector for Pilotstat® safety control power units.**
- **Available in a variety of lead lengths.**

APPLICATION

Q309, Q340, and Q390 Thermocouples generate a thermoelectric current that senses a pilot flame on gas-fired heating systems. The pilot flame heats the tip of the thermocouple, producing a temperature differential between it and the base. This temperature difference generates a small amount of DC power, measured in millivolts.

Q335 Thermocouple is a quick dropout thermocouple used in conjunction with the Q313 Thermopile Generator in the Q382 Pilot Burner. The flame in the pilot burner is directed toward the thermocouple and the thermopile. As long as pilot flame is present, the millivolt output from the thermocouple keeps the safety valve in the gas control open, allowing the main gas to flow to the appliance on demand. The millivolt output from the thermopile energizes the operator in the valve on demand.

Q313 Thermopile Generator contains multiple thermocouples connected in series to increase the millivoltage output. The power generated is sufficient to operate an automatic millivolt gas control system, independent of any outside power source.

Contents

60-2087-4

SPECIFICATIONS

Models:
Thermocouples:
Q309A.
Q309B Includes junction box for series hookup with high limit switch.
Q335C Quick dropout model.
Q340A.
Q390A.
Thermopile Generators:
Q313A.
Q313B Includes junction box for series hookup with high limit switch.
Q313C with 1/4 in. female quick-connects.
Q313F with polarity identified spade terminals.

Dimensions:
See Fig. 1.

Lead Lengths in in. (mm):
Q309:
Standard: 18 (457), 24 (610), 30 (762), 36 (914).
Other: 13 (330), 21 (533), 48 (1219).
Q335:
17.75 (450), 23.6 (600), 29.5 (750), 39 (1000)
Q340:
Standard: 18 (457), 24 (610), 30 (762), 36 (914).
Other: 48 (1219).
Q390:
Standard: 18 (457), 24 (610), 30 (762), 36 (914).
Q313:
Standard: 15 (381), 23 (584), 35 (889).
Other: 47 (1192).

Output (Open Circuit):
Q309, Q340, and Q390:
Normal Range: 26 to 32 mV.
Lowest Acceptable: 18 mV.
Turndown: 2 mV
Q335:
Normal Range: 20 to 30 mV.
Lowest Acceptable: 15 mV.
Turndown: 4 mV
Q313:
Normal Range: 600 to 750 mV.
Lowest Acceptable: 540 mV.
Turndown: 141 mV

Maximum DC Cold Resistance at 80°F (27°C):
Q309, Q340, Q335, and Q390:
For all lead lengths *less than 39 in.*: 0.02 ohms.
For 39 in. and 48 in. lead lengths: 0.03 ohms.
Q313 Resistance (Lead Length):
2.87 ohms (15 in.).
2.88 ohms (23 in.).
2.89 ohms (35 in.).
2.90 ohms (47 in.).

NOTE: Use W129A Millivoltmeter to determine maximum resistance.

Hot and Cold Junction Temperature Ratings:
Q309, Q340, Q390, Q313:
Hot Junction: 1400°F (760°C).
Cold Junction: 780°F (416°C).
Q335:
Hot Junction: 1200°F (649°C).
Cold Junction: 775°F (413°C).

Accessories:
390012C Power Unit Female Adapter.
392451 ECO Adapter.
Q357A Thermocouple Terminal Adapter.

Pilot Burner Usage:
See Table 1.

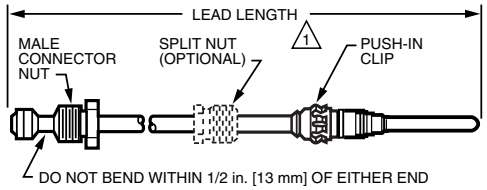
Q340 Replacement Information:
See Table 2.

ORDERING INFORMATION

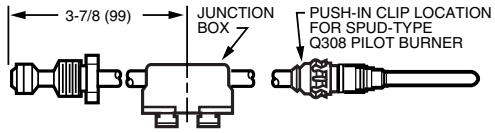
When purchasing replacement and modernization products from your TRADELINE® wholesaler or distributor, refer to the TRADELINE® Catalog or price sheets for complete ordering number.

If you have additional questions, need further information, or would like to comment on our products or services, please write or phone:
1. Your local Home and Building Control Sales Office (check white pages of your phone directory).
2. Home and Building Control Customer Relations
Honeywell, 1885 Douglas Drive North
Minneapolis, Minnesota 55422-4386

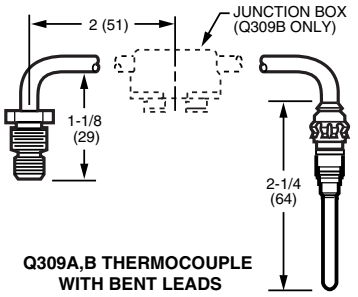
In Canada—Honeywell Limited/Honeywell Limitée, 35 Dynamic Drive, Scarborough, Ontario M1V 4Z9.
International Sales and Service Offices in all principal cities of the world. Manufacturing in Australia, Canada, Finland, France, Germany, Japan, Mexico, Netherlands, Spain, Taiwan, United Kingdom, U.S.A.



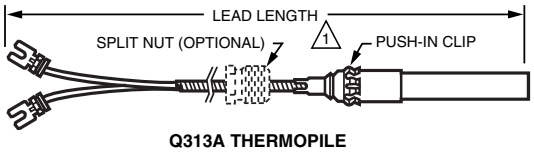
Q309A THERMOCOUPLE



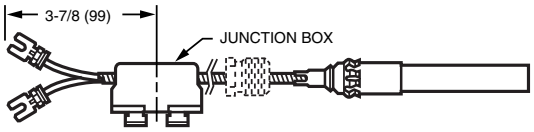
Q309B THERMOCOUPLE WITH JUNCTION BOX



Q309A,B THERMOCOUPLE WITH BENT LEADS

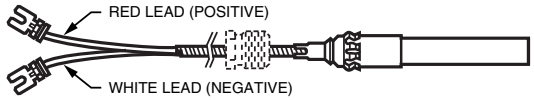


Q313A THERMOPILE

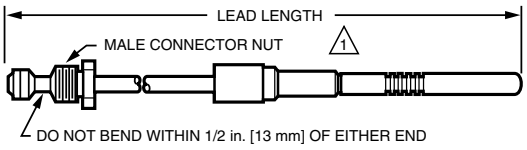


Q313B THERMOPILE WITH JUNCTION BOX

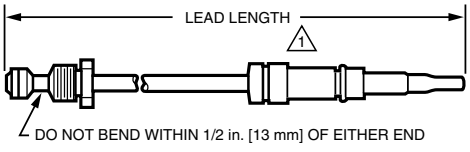
Q313C THERMOPILE WITH FEMALE QUICK CONNECTS



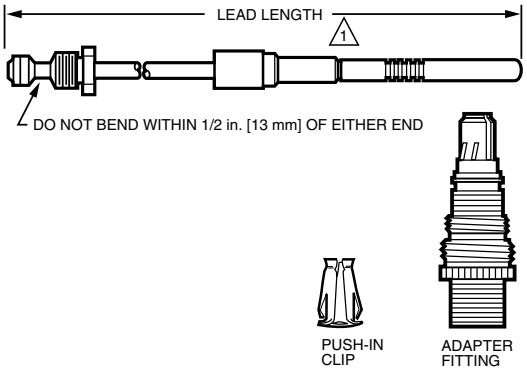
Q313F THERMOPILE WITH POLARITY IDENTIFIED SPADE TERMINALS



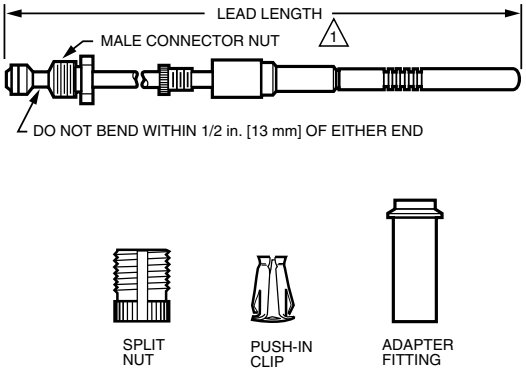
Q340A,B THERMOCOUPLE



Q335 THERMOCOUPLE



Q340A TRADELINE® THERMOCOUPLE



Q390A TRADELINE® THERMOCOUPLE

1 LEAD LENGTH IS DEPENDENT ON THE SPECIFIC MODEL NUMBER. SEE SPECIFICATIONS, LEAD LENGTH IN in. (mm) SECTION FOR AVAILABLE LENGTHS.

M12765

Fig. 1. Thermocouple and Thermopile Generator Dimensions in in. (mm).

Table 1. Pilot Burner Usage.

Thermocouple or GeneratorThermopile	Pilot Burner									
	Q303	Q308	Q314	Q324	Q327	Q350	Q380	Q382[a]	CS894	CS897
Q309	■	■	■	■	■	■	■			
Q313			■	■	■			■[a]	■	■
Q335								■[a]		
Q340 (with adapter) Q390 (with adapter)	■	■	■	■	■					

[a]The Q382 Pilot Burner requires both a Q313 *and* a Q335.

Table 2. Q340 Replacement Information.

The Q340A TRADELINE® replaces all of the following thermocouples:

HONEYWELL	ROBERTSHAW	PENN-BASO	ITT-GENERAL	WHITE ROGERS	JADE
Q309	1980	K15	2500 SERIES	HO SERIES	TK5
Q326	T45	K16	2600 SERIES		
Q337	T46	K19 88D			

INSTALLATION

When Installing this Product…

1. Read these instructions carefully. Failure to follow them could damage the product or cause a hazardous condition.
2. Check ratings given in instructions and on product to make sure product is suitable for your application.
3. Installer must be a trained, experienced service technician.
4. After installation is complete, check out product operation as provided in these instructions.

⚠ WARNING

Fire or Explosion Hazard.
Fuel gas accumulation can cause property damage, severe injury, or death.
Turn off gas supply at appliance service valve before starting installation.

⚠ CAUTION

Equipment Damage or Electrical Shock Hazard.
Can short equipment circuitry or shock individuals.
Disconnect power supply before installation.

Follow appliance manufacturer's instructions, if available. Otherwise, use instructions provided below as a guide.

Push-in Clip Design

1. Insert thermocouple/thermopile tip into hole or barrel provided beneath the pilot burner (see Fig. 2).
2. Push in firmly until locked into place.

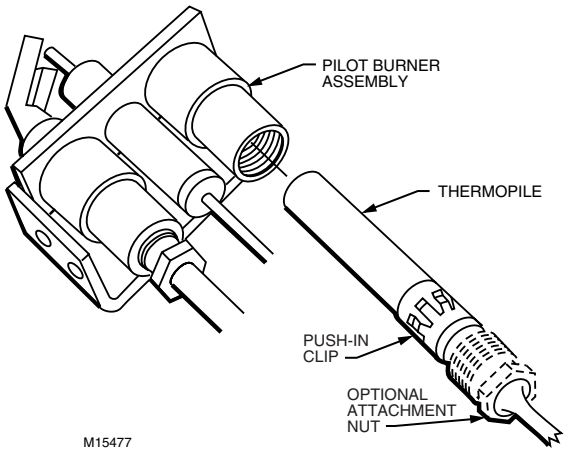


Fig. 2. Installing thermocouple/thermopile with push-in clip