



# BLACK TEKNIGAS THERMOCOUPLES

The Black Teknigas **7 Series** offers a range of Thermocouples to meet most applications in the domestic and commercial heating and catering markets, as well as some non-electric process equipment.

Models are available to operate with most makes of Thermo-Electric Valves and Pilot Burners and the Company has the ability to produce models to meet specific O.E.M. requirements, including integral interrupters, where an over-heat thermostat or auxiliary control is utilised in a system. Universal Thermocouple packages, which are aimed at the replacement and service markets, are available in five standard lengths of 450mm, 600mm, 900mm, 1200mm and 1800mm, with additional adaptor kits to extend their versatility. Universal Thermocouples are also available aimed at the Gas Fire replacement market.

The Black Teknigas **Series 8** Thermocouple offers *Long Life* technology, which was developed in a collaborative project with British Gas. This technology can be applied to all Black Teknigas Thermocouples, except those incorporating an integral interrupter.

Black Teknigas is one of the largest and most influential thermocouple manufacturers internationally, and as such, can provide an unrivaled service to the O.E.M. and is able to engineer all design features into a world class product in both standard and longlife forms..

ADDITIONAL FEATURES - available for OEM quantities

- Non Standard Length between 150mm to 1800mm
- 100mm long Outer Tips
- Coated tips, for protection against carbon deposit build up
- Nickel Plated Outer Conductors, for excess heat protection

## TECHNICAL DATA

- Typical Operating Output - Off load 30mV @ 600°C  
On load 13mV @ 600°C  
(see graph opposite, Fig 1, for details)
- Normal working temperature range - giving optimum output, dropout time and life 400° to 600°C
- Maximum Operating Temperature - Outer Tip - 1000°C
- Maximum Drop-out time, depending on application - Typically 30 to 40 sec's max.
- Minimum bend radius on Outer Connector - 15mm
- Torque requirement for nut connection - into magnet 3.0 Nm to 4.5 Nm(max)
- Typical Materials of Construction \* -
  - Outer Tip - Inconel and Stainless Steel
  - Inner Tip - Hecnum (Constantin)
  - Cold Junction - Brass CZ126
  - Fixing and Connecting Nuts Brass CZ126
  - Outer Conductor Annealed Copper Tube
  - Inner Conductor Copper

\* Note. Material Specification can be changed to suit the application

Fig.1 GRAPH SHOWING TYPICAL THERMOCOUPLE OUTPUT

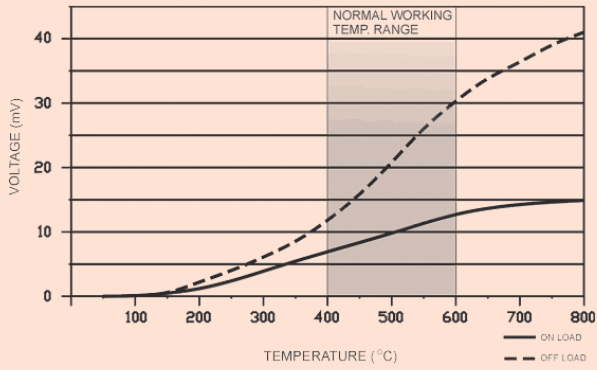


Fig.2 GRAPH SHOWING TYPICAL THERMOCOUPLE RESPONSE TIME

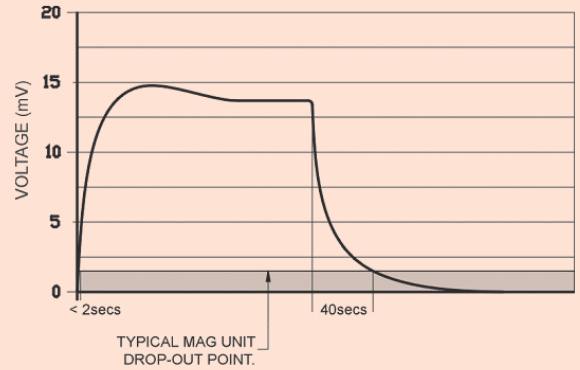
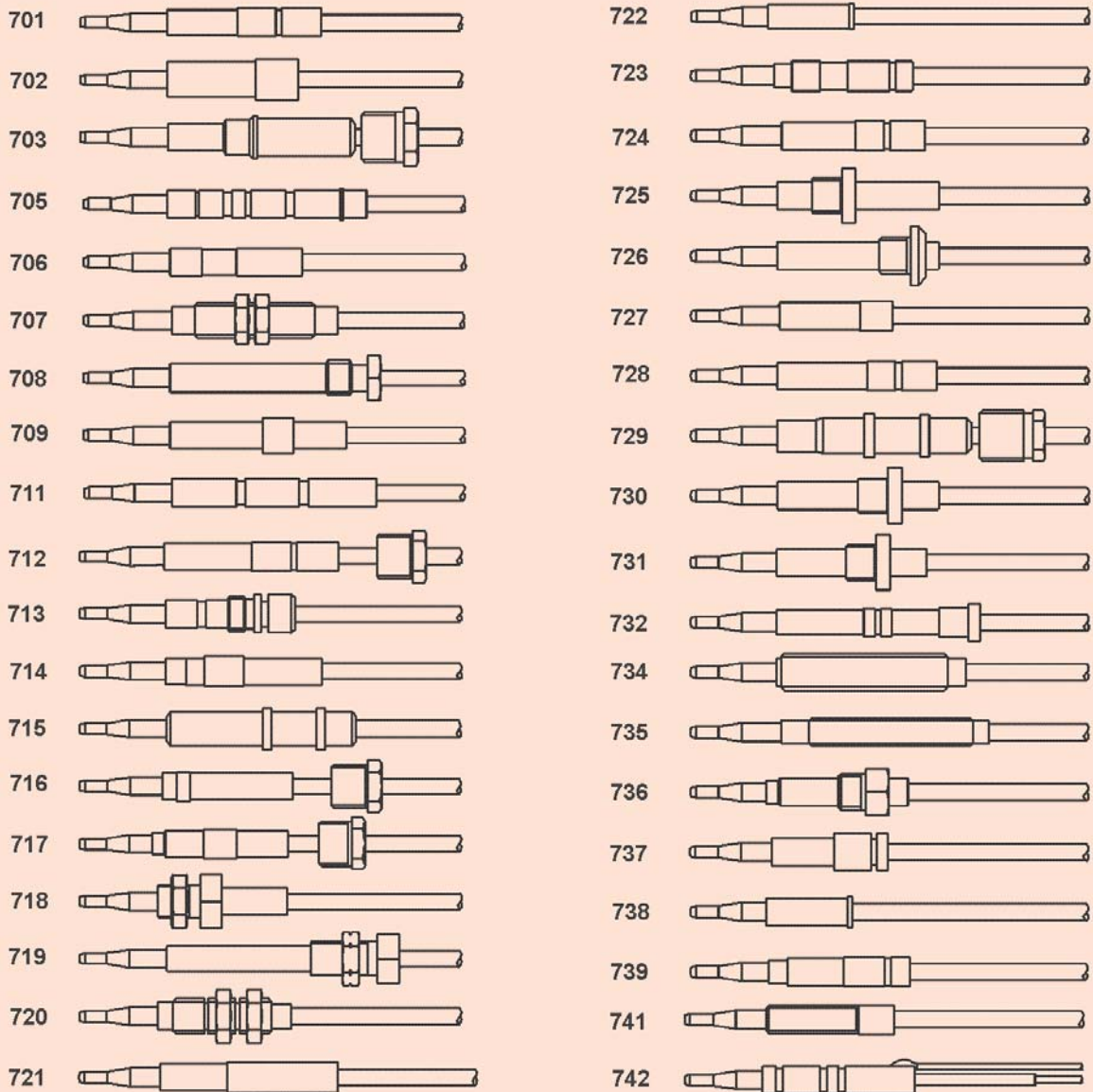


Fig.3 EXAMPLES OF THERMOCOUPLE COLD JUNCTIONS



# UNIVERSAL THERMOCOUPLES

## ORDERING CODES

### Standard Universal Thermocouple

900 mm - 700/900MM

### Extended Life Universal Thermocouple

450mm - 7000/EL/450MM

600mm - 7000/EL/600MM

900mm - 7000/EL/900MM

1200mm - 7000/EL/1200MM

1800mm - 7000/EL/1800MM

### Standard Universal Thermocouple with Interrupter

900mm - 7001/S/900MM

### Long Life Thermocouple

900mm - 7002/900MM

### Super Universal Thermocouple

900mm - 7003/900MM

1200mm - 7003/1200MM

### Gas Fire Universal Thermocouple

900mm - 7004/900MM

### Adaptor Kits & Some Applications (Std. and EL only)

7000/04 - Perl, Black 5503

7000/05 - Perl A,B,C,D, & E

7000/12 - Evered 9189, White Rodgers, R'shaw

7000/13 - Teddington TJ

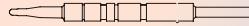
7000/15 - Sperryn T582

7000/26 - Junkers, S.I.T.

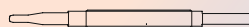
## COMPONENTS

### COLD JUNCTIONS

7000, 7000/EL, 7001 & 7002



7003



7004



C. CONNECTOR 7/16" - 26 BSW



E. M9 x 1.0 SPLIT NUT



G. 11/32" x 32 NS SPLIT NUT



J. M10 x 1.0 NUT - M6 x 0.75 INT. THREAD



L. CONICAL NUT M6 x 0.75 INT. THREAD



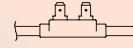
N. 7/16" x 27 NUT M6 x 0.75 INT. THREAD



R. M8 x 1.0 HEX. LOCK NUT



### INTERRUPTER



A. COLD JUNCTION UNIVERSAL FITTING



B. SPRING CLIP



D. M8 x 1.0 SPLIT NUT



F. M10 x 1.0 SPLIT NUT



H. M9 x 1.0 + 11/32 x 32NS SPLIT NUT



K. M10 x 1.0 + M8 x 1.0 SPLIT NUT



M. M8 x 1.0 NUT M6 x 0.75 INT. THREAD



P. G1/8" x 28 NUT M6 x 0.75 INT. THREAD



S. M10 x 1.0 NUT - M8 x 1.0 INT. THREAD



## CONTENTS

In addition to the thermocouple of the relevant style, each thermocouple packet contains the following contents:-

### 7000/900MM

1 x 'A' Cold Junction Universal Fitting

1 x 'B' Spring Clip

1 x 'C' 7/16" Connector Nut

1 x 'H' M9 + 11/32" Double Split Nut

### 7000/EL/450MM, 600MM, 90MM, 1200MM & 1800MM

1 x 'A' Cold Junction Universal Fitting

1 x 'B' Spring Clip

1 x 'C' 7/16" Connector Nut

1 x 'E' M9 Split Nut

1 x 'G' 11/32" Split Nut

### 7001/S/900MM (With Interrupter)

1 x 'B' Spring Clip

1 x 'D' M8 Split Nut

1 x 'E' M9 Split Nut

1 x 'F' M10 Split Nut

1 x 'G' 11/32" Split Nut

### 7002/900MM

1 x 'A' Cold Junction Universal Fitting

1 x 'B' Spring Clip

1 x 'C' 7/16" Connector Nut

1 x 'E' M9 Split Nut

1 x 'G' 11/32" Split Nut

### 7003/900MM

1 x 'B' Spring Clip

1 x 'E' M9 Split Nut

1 x 'G' 11/32" Split Nut

1 x 'J' M10 Nut with M6 Internal Thread

1 x 'K' M10 + M8 Double Split Nut

2 x 'L' Conical Nut with M6 Internal Thread

1 x 'M' M8 Nut with M6 Internal Thread

1 x 'N' 7/16" Nut with M6 Internal Thread

1 x 'P' G1/8" Nut with M6 Internal Thread

1 x 'R' M8 Hexagon Lock Nut

### 7004/900MM

1 x 'D' M8 Connector Nut

2 x 'R' M8 Hexagon Lock Nut

1 x 'S' M10 Nut with M8 Internal Thread

With further research and development contents may vary.

See also our complimentary data sheets on Pilots, Burners etc. and Thermo-electric controls

**BLACK**  
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