T.M.Electronics (UK) Ltd Technical Data

GPK1

Type K General Purpose Temperature Kit with Thermometer, Plug Mounted Probes and Case

MM2000 Thermometer

FEATURES

Easy to use low cost high accuracy microprocessor based thermocouple instrument with a measurement range of -200 to +1372 °C and an operating range of -30 to 50 °C.

- *** **°C / °F switchable**
- *** **Resolution of 0.1° to 1000° autoranging**
- *** **Switchable thermocouple types K / T / J / R / N / E / S**
- *** **Infra-Red sensor compatability**
- *** **Full retention of thermocouple type and temperature scale**
- *** **User configurable Auto Swith Off capability**
- *** **Easy to use software calibration**
- *** **Overrange / Open circuit sensor indication**
- *** **Low battery indication**
- *** **Supplied complete with shock resistant rubber boot**
- *** **IP67 casing**

SPECIFICATION

Environmental

AMBIENT OPERATING RANGE	:	-30 to 50 °C
STORAGE TEMPERATURE RANGE	:	-40 to 50 °C
HUMIDITY	:	0 to 70% R.H.

ELECTRICAL

MEASUREMENT RANGES	:	K	-200 to 1372 °C
		T	-200 to 400 °C
		J	-200 to 1200 °C
		R	0 to 1767 °C
		N	-200 to 1200 °C
		E	-200 to 1000 °C
		S	0 to 1767 °C
THERMOCOUPLE TYPES	:	K T J R N E S	
INFRA-RED SENSOR (Exergen K80)	:	K80 –50 to 250 °C	
TEMPERATURE SCALES	:	°C / °F	
ACCURACY @23°C	:	+/- 0.1% OF READING +/- 0.2 °C	
CHARACTERISING ACCURACY	:	LESS THAN 0.05 °C	
TEMPERATURE COEFFICIENT	:	0.01% OF READING /°C	
COLD JUNCTION COMPENSATION	:	0.0075 °C/°C	
RESOLUTION	:	0.1° to 1000, 1° ABOVE 1000	

GENERAL

BATTERY	:	PP3 9V I.E.C. 6F22
BATTERY LIFE (INTERMITTENT USE)	:	GREATER THAN 200 HOURS (ALKALINE)
WEIGHT	:	155 gms
DIMENSIONS	:	130 X 70 X 33 mm

Probes

All probes are:

- Type 'K' Thermocouple : Class I (±1.5˚C ±0.25%)
- Manufactured using a two stage moulding technique. Firstly the probes are encased in tough nylon, then a thermoplastic over moulding is applied. This gives an extremely robust and durable construction with the added benefit that the assembly is waterproof.

KHA02 PLUG MOUNTED AIR PROBE

Construction

Air probe with exposed thermocouple sensor protected by a perforated stainless steel sheath. Insulated in ceramic sheaths.
Sensor stem is 4mm diameter and 110mm long, the sensor is approx 5mm from the stem end.

- WIDE AMBIENT TEMPERATURE SPECIFICATION : -30 TO 50 ˚C
- TIME RESPONSE *(96% of value in moving gas)* : 0.1 Secs
- MEASUREMENT RANGE : -100 TO 750 ˚C

KHM01 PLUG MOUNTED GENERAL PURPOSE PROBE

Construction

3.0mm diameter by 100mm long minerally insulated probe using moulded plug.

- WIDE AMBIENT TEMPERATURE SPECIFICATION : -30 TO 50 ˚C
- TIME RESPONSE *(96% of value in water)* : 2.0 Secs
- MEASUREMENT RANGE : -100 TO 750 ˚C

KHP05 PLUG MOUNTED NEEDLE PROBE

Construction

Stainless Steel Needle probe plug mounted.
Needle is 3.3mm diameter and 100mm long with a sensor welded to the tip.

- WIDE AMBIENT TEMPERATURE SPECIFICATION : -30 TO 50 ˚C
- TIME RESPONSE *(96% of value in water)* : 1.6 Secs
- MEASUREMENT RANGE : -100 TO 250 ˚C

KHS02 PLUG MOUNTED SURFACE PROBE

Construction

Surface probe with copper sensing tip protected by a sprung stainless steel draught shield.: Stainless Steel 316 (Food Grade) 4mm diameter stem 100mm long. Probe tip 6mm diameter.

- WIDE AMBIENT TEMPERATURE SPECIFICATION : -30 TO 50 ˚C
- TIME RESPONSE *(96% of value on clean metal)* : 3.0 Secs
- MEASUREMENT RANGE : -100 TO 750 ˚C

KA01 FINE WIRE (PTFE) THERMOCOUPLE SENSOR

Construction

This sensor is constructed using a 1M length PTFE wire constructed as a flat pair. The wire used is Class 1 Type K alloys (NiCr / NiAl). A weld bead is manufactured at one end of the wire whilst the other end is terminated in a moulded miniature thermocouple plug.

- WIDE AMBIENT TEMPERATURE SPECIFICATION : -100 TO 50 ˚C
- TIME RESPONSE *(96% of value in moving gas)* : 0.1 Secs
- MEASUREMENT RANGE : -100 TO 250 ˚C
  (Please note may be used for temperatures down to -100ºC however insulation will become brittle at temperatures below -50ºC)

Accessories

KH01HANDLE FOR K TYPE PLUG MOUNTED PROBES

This handle is used in conjunction with the range of plug mounted probes offered by TME. The socket in the end of the handle allows for the plug mounted probes to be inserted into the handle. This means that a variety of temperature measurements may be performed using the socket in the handle and different plug mounted probes.

Construction

Handle which includes miniature thermocouple socket into which any one of the TME plug mounted probes may be inserted. Complete with 2M curly polyurethane cable with moulded connector. Complete waterproof assembly.

- TOTAL ENCAPSULATION TECHNIQUE FOR MAXIMUM STRENGTH AND DURABILITY.

This results in a solid handle as opposed to a hollow handle. This is particularly important as there is often damage to the handles caused by excess heat. With a hollow handle it is possible to puncture the outer plastic and damage the sensor irreparably.

- POLYPROPYLENE HANDLES

Polypropylene is an extremely tough and durable material, commonly used for milk crates, it has good low temperature performance and a relatively high melt temperature. It performs exceptionally well under chemical attack.

- WATERPROOF HANDLE

Due to the total encapsulation method used, all TME handles are completely waterproof.

- TOUGH POLYURETHANE CABLE

- Polyurethane cables are used in place of the standard PVC for the following reasons :-
- Greater retractability
- Enhanced memory of it's curl
- Non-Toxic
- Greater mechanical strength for durability

- 12 X 0.2mm wires used internally for greater strength.
- PTFE inner insulation for strength and retractability.

GPC01 Case

Mini Carry Case with Inserts for a Handheld Thermometer, Plug Mounted Probes and Accessories. An ideal way to keep your temperature measuring equipment in one place and protected.

Case Measurements: 26cm x 17.5cm x 9.5cm (approximate external)

Holds Up To:

- 1 x Handheld Thermometer
- 4 x Plug Mounted Probes
- 1 x Handle for Plug Mounted Probes
- 1 x Spare Battery

Cross-reference for compatible probes

Suitable probes for use with this instrument

TME PART No	DESCRIPTION	APPLICATION	T/C TYPE
KP05	NEEDLE PROBE	CORE TEMPERATURE OF SEMI-SOLID MATERIAL	K
TP05	NEEDLE PROBE	CORE TEMPERATURE OF SEMI-SOLID MATERIAL	T
KP07	NEEDLE PROBE HEAVY DUTY	CORE TEMPERATURE OF SEMI-SOLID MATERIAL	K
TP07	NEEDLE PROBE HEAVY DUTY	CORE TEMPERATURE OF SEMI-SOLID MATERIAL	T
TP10	SOUS VIDE NEEDLE PROBE	CORE TEMPERATURE OF SEMI-SOLID MATERIAL	T
KM01	LIGHT DUTY M.I. PROBE	GENERAL PURPOSE LIQUID/GAS MEASUREMENT	K
TM01	LIGHT DUTY M.I. PROBE	GENERAL PURPOSE LIQUID/GAS MEASUREMENT	T
KM03	M.I. PROBE	GENERAL PURPOSE LIQUID/GAS MEASUREMENT	K
TM03	M.I. PROBE	GENERAL PURPOSE LIQUID/GAS MEASUREMENT	T
KM04	M.I. PROBE EXTENDED LENGTH	GENERAL PURPOSE LIQUID/GAS MEASUREMENT	K
TM04	M.I. PROBE EXTENDED LENGTH	GENERAL PURPOSE LIQUID/GAS MEASUREMENT	T
KS01	SURFACE BAND PROBE	FAST RESPONSE SURFACE MEASUREMENT	K
TS01-S	DUAL PROBE	FOR SURFACE AND IMMERSION MEASUREMENT	
KS07	SURFACE PROBE	GENERAL PURPOSE SURFACE MEASUREMENT	K
TS04	SURFACE PROBE	GENERAL PURPOSE SURFACE MEASUREMENT	T
KS08	HIGH TEMP SURFACE PROBE	HIGH TEMPERATURE SURFACE MEASUREMENT	K
KA04	AIR TEMPERATURE PROBE	FAST RESPONSE AIR TEMPERATURE PROBE	K
TA04	AIR TEMPERATURE PROBE	FAST RESPONSE AIR TEMPERATURE PROBE	T
TA12	SPATULA PROBE	BETWEEN PACK PROBE	T
KH01	SOCKET IN HANDLE	HANDLE FOR USE WITH PLUG MOUNTED PROBES	K
TH01	SOCKET IN HANDLE	HANDLE FOR USE WITH PLUG MOUNTED PROBES	T
KHA02	PLUG MOUNTED AIR PROBE	FAST RESPONSE AIR TEMPERATURE PROBE	K
THA2	PLUG MOUNTED AIR PROBE	FAST RESPONSE AIR TEMPERATURE PROBE	T
KHM01	PLUG MOUNTED M.I. PROBE	GENERAL PURPOSE LIQUID/GAS MEASUREMENT	K
THM01	PLUG MOUNTED M.I. PROBE	GENERAL PURPOSE LIQUID/GAS MEASUREMENT	T
KHN01	PLUG MOUNTED NEEDLE PROBE	CORE TEMPERATURE OF SEMI-SOLID MATERIAL	K
THN01	PLUG MOUNTED NEEDLE PROBE	CORE TEMPERATURE OF SEMI-SOLID MATERIAL	T
THA12	PLUG MOUNTED SPATULA PROBE	BETWEEN PACK PROBE	T
KHS01	PLUG MOUNTED SURFACE BAND PROBE	FAST RESPONSE SURFACE MEASUREMENT	K
KHS02	PLUG MOUNTED SURFACE PROBE	GENERAL PURPOSE SURFACE MEASUREMENT	K
THS02	PLUG MOUNTED SURFACE PROBE	GENERAL PURPOSE SURFACE MEASUREMENT	T
PKHV1	HVAC KIT	PROBE KIT DESIGNED FOR THE HVAC INDUTRY	K
PKF1	FOOD KIT	PROBE KIT DESIGNED FOR THE FOOD INDUTRY	T
PKGP1	GENERAL PURPOSE KIT	PROBE KIT CONTAINING MOST POPULAR PROBES	K
TP01	CORKSCREW PROBE	PROBE DESIGNED FOR CORE TEMPERATURE OF MEAT	T
KPS10	PIPE CLAMP PROBE	PROBE DESIGNED TO BE CLAMPED ONTO PIPES	K
TFS01	FOOD SIMULANT PROBE	SIMULATES THE CORE TEMPERATURE OF FOOD IN HOT OR COLD STORAGE	