T.M.Electronics (UK) Ltd Technical Data

FMK1

Facilities Management Kit with Dual Input Differential Thermometer, Dual Surface/Immersion Probe and Holster

MM2020 Thermometer

FEATURES

This instrument is designed for applications requiring either direct or differential measurement. It incorporates many features such as

- *** **°C / °F / °A Switchable**
- *** **I/P 1, I/P 2, DIFFERENTIAL, HOLD**
- *** **True arithmetic differential reading or differential result and input 1**
- *** **Simultaneous display of both inputs**
- *** **Resolution of 0.1° to 1000° autoranging**
- *** **Switchable thermocouple types K / T / J / R / N / E / S**
- *** **Infra-Red compatibility**
- *** **Full retention of thermocouple type and temperature scale**
- *** **User configurable Auto Switch Off capability**
- *** **Overrange / Open circuit sensor indication**
- *** **Low battery indication**
- *** **Supplied complete with shock resistant rubber boot**
- *** **IP67 casing**

The custom display allows input 1 to be shown on a secondary display whilst displaying differential measurement. Input 1 and input 2 may also be displayed simultaneously

SPECIFICATIONS

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	
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	
TEMPERATURE SCALES	:	°C / °F / °A	
FUNCTIONS	:	I/P1 / I/P2 / DIFFERENTIAL / HOLD	

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

Probe

KS01-S DUAL PURPOSE SURFACE / IMMERSION PROBE TYPE 'K'

Description

This probe uses the straight handle for fine control. The probe is designed for the measurement of both surface temperatures and Immersion temperatures.

NOTE: This probe only requires light pressure to give a true reading and is suitable for smooth, clean surfaces. If used on an uneven surface, there is a risk that the band will be weakened and deformed.

Construction

Ribbon band sensor with thermocouple sensor attached and draught shield : Stainless Steel 316 (Food Grade) Sealed with Silicon Rubber compound to ensure the probe is fully waterproof.
2M curly polyurethane cable with moulded connector.

Sensor Features

- **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.

- **WATERPROOF HANDLE**

  Due to the total encapsulation method used, all TME probe 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 its 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.

- **HIGH ACCURACY THERMOCOUPLE MATERIAL THROUGHOUT**

  Type 'K' Thermocouple : Class I (±1.5˚C ±0.25%)

- **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.

- **WIDE AMBIENT TEMPERATURE SPECIFICATION : -30 TO 50 ˚C**
- **TIME RESPONSE *(96% of value on clean metal)* : 3 Secs**
- **MEASUREMENT RANGE : -50 TO 250 ˚C (higher for non-continuous measurement)**

Holster

For MM Thermometer Range & Probe

Hard wearing leatherette holster

- Complete with Belt clip
- Two popper closing
- Overall Measurement approx 140x 80x 40mm

Cross-reference for compatible probes

Suitable probes for use with this instrument

TME PART No	DESCRIPTION	APPLICATION	T/C TYPE
KM01	LIGHT DUTY M.I. PROBE	GENERAL PURPOSE LIQUID/GAS MEASUREMENT	K
KM03	M.I. PROBE	GENERAL PURPOSE LIQUID/GAS MEASUREMENT	K
KM04	M.I. PROBE EXTENDED LENGTH	GENERAL PURPOSE LIQUID/GAS MEASUREMENT	K
KS01	SURFACE BAND PROBE	FAST RESPONSE SURFACE MEASUREMENT	K
KS07	SURFACE PROBE	GENERAL PURPOSE SURFACE MEASUREMENT	K
KS08	HIGH TEMP SURFACE PROBE	HIGH TEMPERATURE SURFACE MEASUREMENT	K
KA04	AIR TEMPERATURE PROBE	FAST RESPONSE AIR TEMPERATURE PROBE	K
KH01	SOCKET IN HANDLE	HANDLE FOR USE WITH PLUG MOUNTED PROBES	K
KHA02	PLUG MOUNTED AIR PROBE	FAST RESPONSE AIR TEMPERATURE PROBE	K
KHM01	PLUG MOUNTED M.I. PROBE	GENERAL PURPOSE LIQUID/GAS MEASUREMENT	K
KHN01	PLUG MOUNTED NEEDLE PROBE	CORE TEMPERATURE OF SEMI-SOLID MATERIAL	K
KHS01	PLUG MOUNTED SURFACE BAND PROBE	FAST RESPONSE SURFACE MEASUREMENT	K
KHS02	PLUG MOUNTED SURFACE PROBE	GENERAL PURPOSE SURFACE MEASUREMENT	K
PKHV1	HVAC KIT	PROBE KIT DESIGNED FOR THE HVAC INDUSTRY	K
PKGP1	GENERAL PURPOSE KIT	PROBE KIT CONTAINING MOST POPULAR PROBES	K
KPS10	PIPE CLAMP PROBE	PROBE DESIGNED TO BE CLAMPED ONTO PIPES	K