



IMPROVING YOUR ENERGY

Smarter, Safer, Cleaner



Engine and Propulsion

Industrial Engine Sensors – Product Catalog 2021

www.cmr-group.com

// Contents

01 Fluid Temperature Sensors	4
02 Exhaust Gas Temperature Sensors	8
03 Main Bearing Temperature Sensors	20

FLUID TEMPERATURE SENSOR // MBT19

The MBT19 sensor series temperature sensor uses platinum probe (PT100 or PT1000) and is adapted for fluid temperature measurement up to 150°C. This sensor is designed and constructed specifically for measuring industrial engine fluids such as industrial lube oil, diesel oil, heavy fuel oil, supply gas, raw water or treated water.



Description

MBT sensors are equipped with a stainless steel and DIN 43650 connector. The sensitive element can easily be replaced by manually removing the connecting nut and rotation through 360°, in order to position the DIN connector as required.

Specifications

▪ Element	PT100
▪ Insertion Length (mm)	65
▪ Process Connection	On demand
▪ Elbow	On demand
▪ Cable Length	On demand
▪ Electrical Connection	DIN
▪ Outlet	On demand
▪ Measurement Range	- 50°C / +200°C

Application

DEFENSE - ARMY

DEFENSE - NAVY

INDUSTRY & UTILITIES - PROCESS INDUSTRIES

INDUSTRY & UTILITIES – HAZARDOUS & MACHINERY

POWER – ENGINES & GENSETS

TRANSPORTATION – LAND

TRANSPORTATION – MARINE

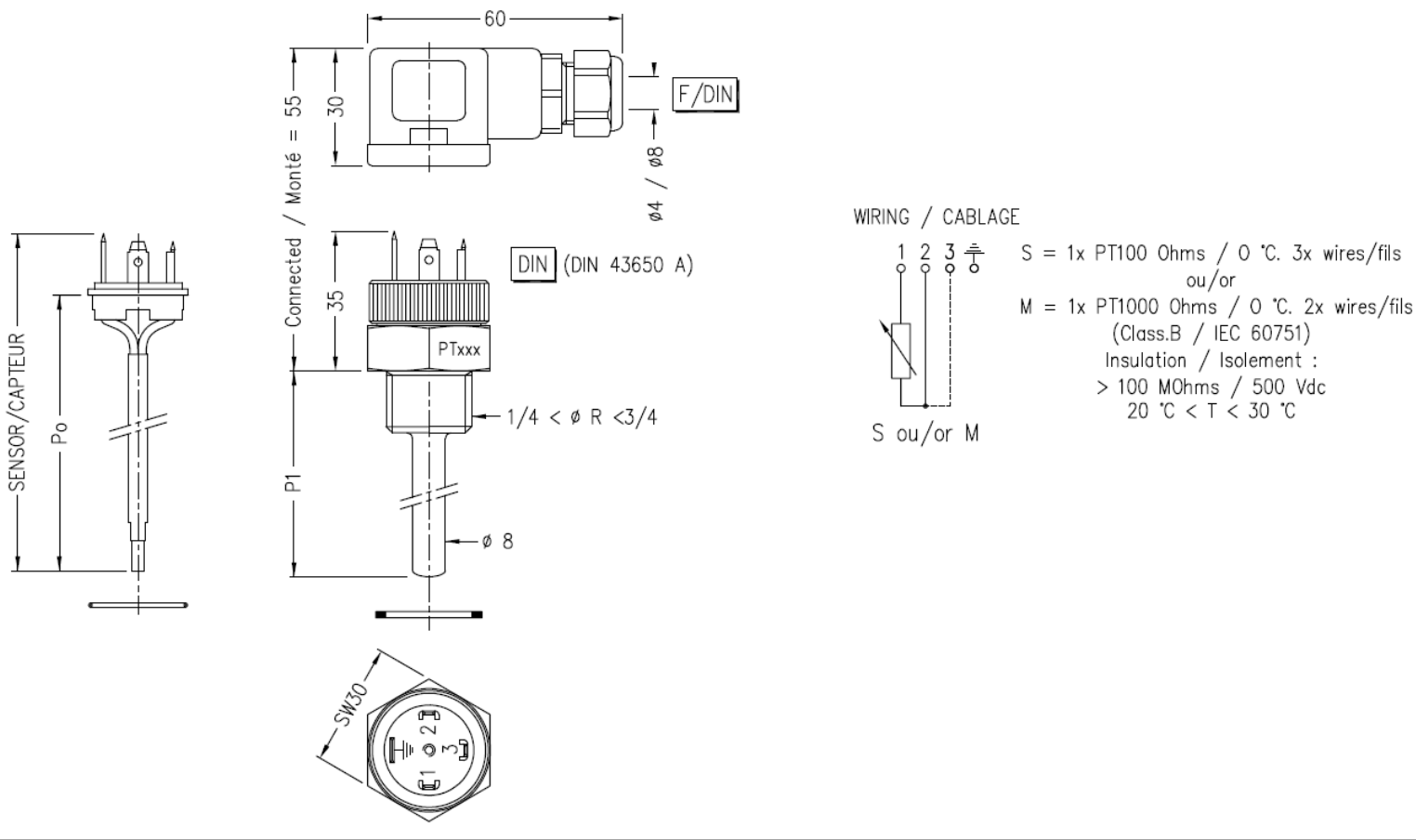
Markets

DEFENSE

INDUSTRY & UTILITIES

OIL & GAS

TRANSPORTATION



DESIGNATION CMR REFERENCE	
Sensor type / Type de capteur	MBT19
DS if welded pocket DS si doigt de gant soudé	DS
1x PT100 = S 1x PT1000 = M	X
P1 P1	
Ø R Fitting Raccord Ø R	
Connection / Connexion DIN or / ou F/DIN	Fx

Industrial Engine Sensors – Exhaust Gas/Head/Turbo T °

EXHAUST GAS TEMPERATURE SENSOR // MC29.2

The MC29 series is a standard exhaust gas temperature sensor EGT for medium and high-speed engines, designed to be used without a pocket and is specifically fitted with thick insulation materials for operating in and around the engine exhaust pipe. The MC29 can be connected directly to a CMR pyrometric pipe harness and performs temperature measurement through PT 1000 platinum probe for high reliability, universal readout and easy connection.



Description

This sensor benefits from a rapid response time thanks to minimum tube thickness at the tip, a fixed depth that allows for monitoring for variations between cylinders and easy maintenance/inspection. This reduces the risk of any kind of error. A wide range of shapes and sizes are available with compliance to the requirements of the main classification societies. The MC29 series is finished with mineral insulated cable as standard.

Specifications

▪ Element	2 PT1000
▪ Insertion Length (mm)	On demand
▪ Process Connection	On demand
▪ Elbow	On demand
▪ Cable Length	On demand
▪ Electrical Connection	DIN
▪ Outlet	On demand
▪ Measurement Range	- 50°C / +650°C

Application

DEFENSE - ARMY

DEFENSE - NAVY

INDUSTRY & UTILITIES - PROCESS INDUSTRIES

INDUSTRY & UTILITIES – HAZARDOUS & MACHINERY

POWER – ENGINES & GENSETS

TRANSPORTATION – LAND

TRANSPORTATION – MARINE

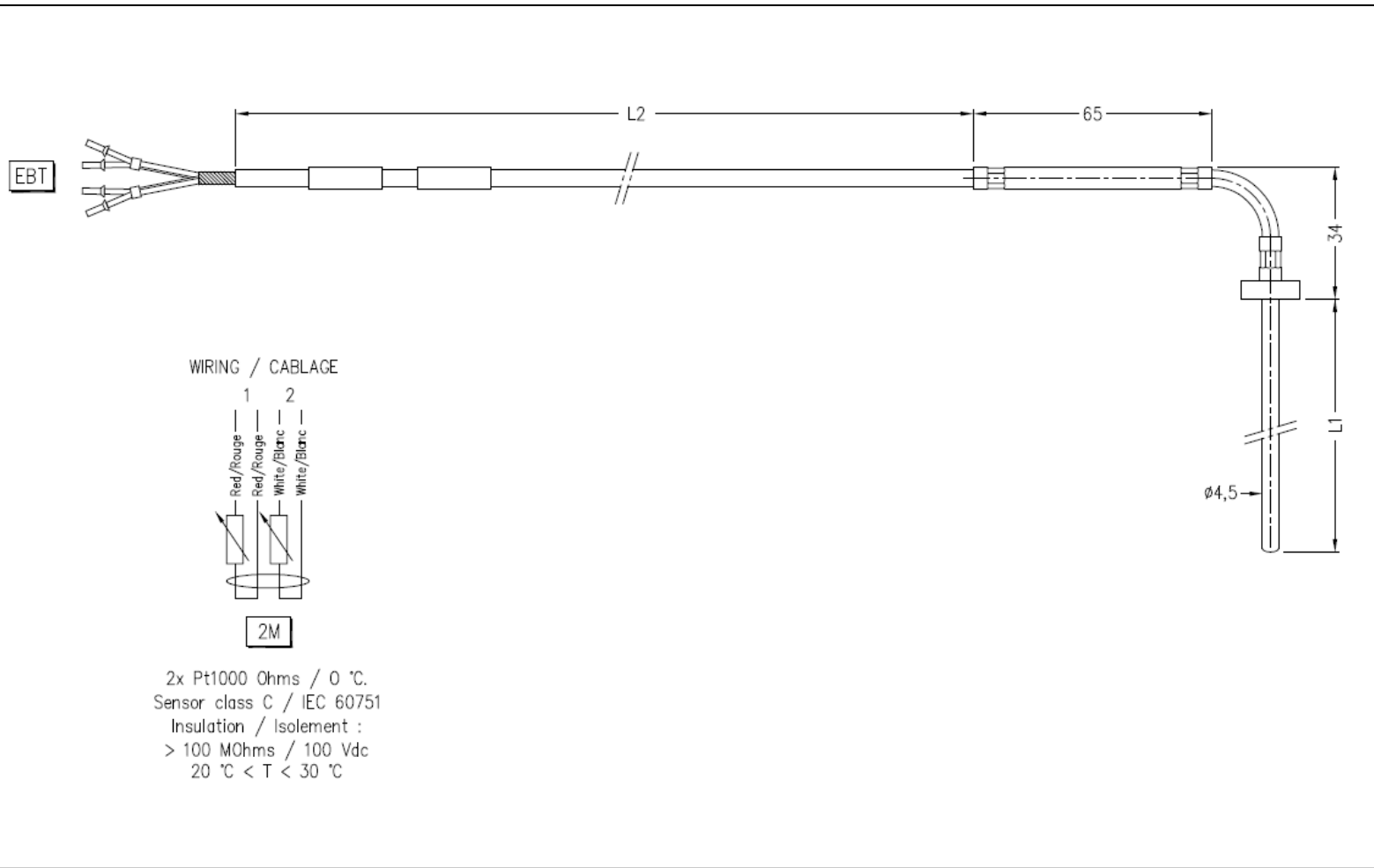
Markets

DEFENSE

INDUSTRY & UTILITIES

OIL & GAS

TRANSPORTATION



DESIGNATION CMR REFERENCE	
Sensor type / Type capteur	MC29.2
Probe / Sonde 2 x PT1000	2M
L1 (mm) plunger Plongeur L1 (mm)	
90° Elbowed Coudé à 90°	90°
Cable lenght L2 (m) Longueur cable L2 (m)	
Connection / Connexion	EBT

Industrial Engine Sensors – Exhaust Gas/Head/Turbo T °

EXHAUST GAS THERMOCOUPLE // MC29 B

The MC29 series is a standard exhaust gas temperature sensor EGT for medium and high-speed engines, designed to be used without a pocket and is specifically fitted with thick insulation materials for operating in and around the engine exhaust pipe. The MC29 can be connected directly to a CMR pyrometric pipe harness and performs temperature measurement through a thermocouple type probe for high reliability, universal readout and easy connection.



Description

This sensor benefits from a rapid response time thanks to minimum tube thickness at the tip, a fixed depth that allows for monitoring for variations between cylinders and easy maintenance/inspection. This reduces the risk of any kind of error. A wide range of shapes and sizes are available with compliance to the requirements of the main classification societies. The MC29 series is finished with mineral insulated cable as standard.

Specifications

▪ Element	Thermocouple
▪ Insertion Length (mm)	On demand
▪ Process Connection	On demand
▪ Elbow	On demand
▪ Cable Length	On demand
▪ Electrical Connection	DIN
▪ Outlet	On demand
▪ Measurement Range	- 50°C / +800°C

Application

DEFENSE - ARMY

DEFENSE - NAVY

INDUSTRY & UTILITIES - PROCESS INDUSTRIES

INDUSTRY & UTILITIES – HAZARDOUS & MACHINERY

POWER – ENGINES & GENSETS

TRANSPORTATION – LAND

TRANSPORTATION – MARINE

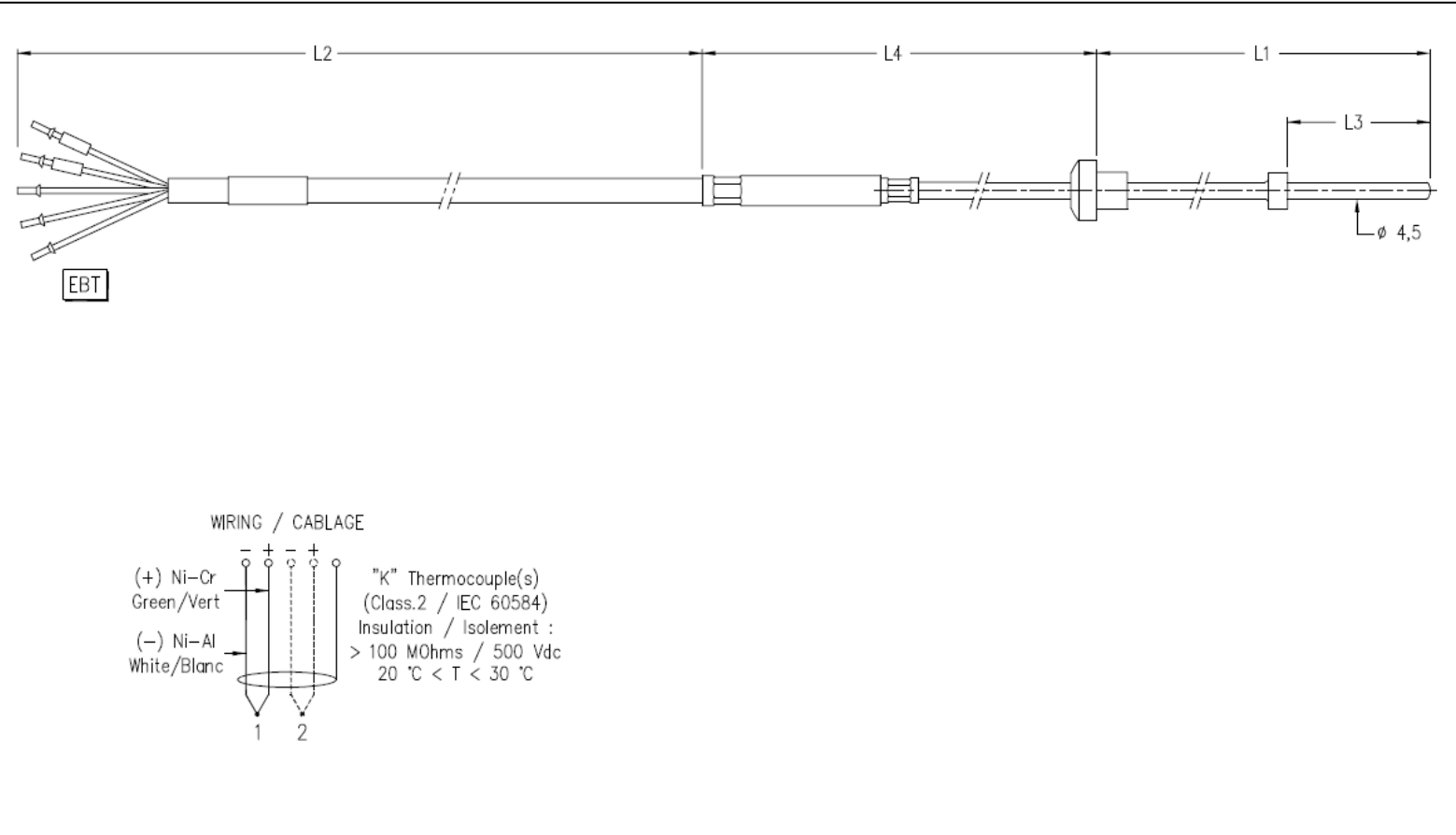
Markets

DEFENSE

INDUSTRY & UTILITIES

OIL & GAS

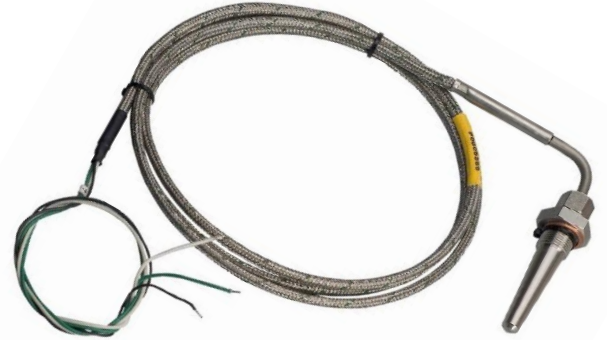
TRANSPORTATION



DESIGNATION CMR REFERENCE	
Sensor type / Type capteur	MC29B
Thermocouple	2KI
Element lenght L1 (m) Longueur élément L1 (m)	L1
Cable lenght L2 (m) Longueur cable L2 (m)	90°
Connection / Connexion	EBT

EXHAUST GAS THERMOCOUPLE // MD11

The MD11 series is a standard exhaust gas temperature sensor EGT for medium and high-speed engines, designed to be used without a pocket and specifically fitted with thick insulation materials for operating in and around the engine exhaust pipe. The MD11 can be connected directly to a CMR pyrometric pipe harness and performs temperature measurement through a “K” type thermocouple for high reliability, universal readout and easy connection.



Description

This sensor benefits from a rapid response time thanks to minimum tube thickness at the tip, a fixed depth that allows for monitoring for variations between cylinders and easy maintenance/inspection. This reduces the risk of any kind of error. A wide range of shapes and sizes are available with compliance to the requirements of the main classification societies. The MD11 series is finished with mineral insulated cable as standard.

Specifications

▪ Element	Thermocouple
▪ Insertion Length (mm)	On demand
▪ Process Connection	On demand
▪ Elbow	90°
▪ Cable Length	On demand
▪ Electrical Connection	On demand
▪ Outlet	-
▪ Measurement Range	- 50°C / +800°C

Application

DEFENSE - ARMY

DEFENSE - NAVY

INDUSTRY & UTILITIES - PROCESS INDUSTRIES

INDUSTRY & UTILITIES – HAZARDOUS & MACHINERY

POWER – ENGINES & GENSETS

TRANSPORTATION – LAND

TRANSPORTATION – MARINE

Markets

DEFENSE

INDUSTRY & UTILITIES

OIL & GAS

TRANSPORTATION



(-) Ni-Al
White/Blank

"K" Thermocouple(s)
(Class.2 / IEC 60584)
Insulation / Isolement :
100 MOhms / 500 Vdc
20 °C < T < 30 °C

11

Industrial Engine Sensors – Exhaust Gas/Head/Turbo T °

EXHAUST GAS THERMOCOUPLE // MD1 U

The MD1 thermocouple standard exhaust gas temperature sensor EGT can be connect directly to a CMR pipe harness.

The measuring element is a K type thermocouple for reliability, universal readout and easy connectivity, where a longer response time is not required.



Description

MD1 sensors offer rapid response times thanks to minimum tube thickness at the tip and a fixed depth that allows for monitoring variations between cylinders. This sensor is tried and tested over many years of industrial deployment, is easy to maintain/inspect and is built to reduce any risk of error. The MD1 series complies with the requirements of the main classification societies and is available in a wide range of shapes. For low speed diesel and gas engines and turbo compressors, the MD1 Series is used without bored pocket for immersion depth < 70 mm. For all other engines including low speed engines, a pocket is mandatory

The MD series is also available with an integrated 4-20 mA converter.

Specifications

▪ Element	Thermocouple
▪ Insertion Lenght (mm)	On demand
▪ Process Connection	On demand
▪ Elbow	90°
▪ Cable Lenght	On demand
▪ Electrical Connection	On demand
▪ Outlet	Adaptable
▪ Measurement Range	- 50°C / +500°C

Application

DEFENSE - ARMY

DEFENSE - NAVY

INDUSTRY & UTILITIES - PROCESS INDUSTRIES

INDUSTRY & UTILITIES – HAZARDOUS & MACHINERY

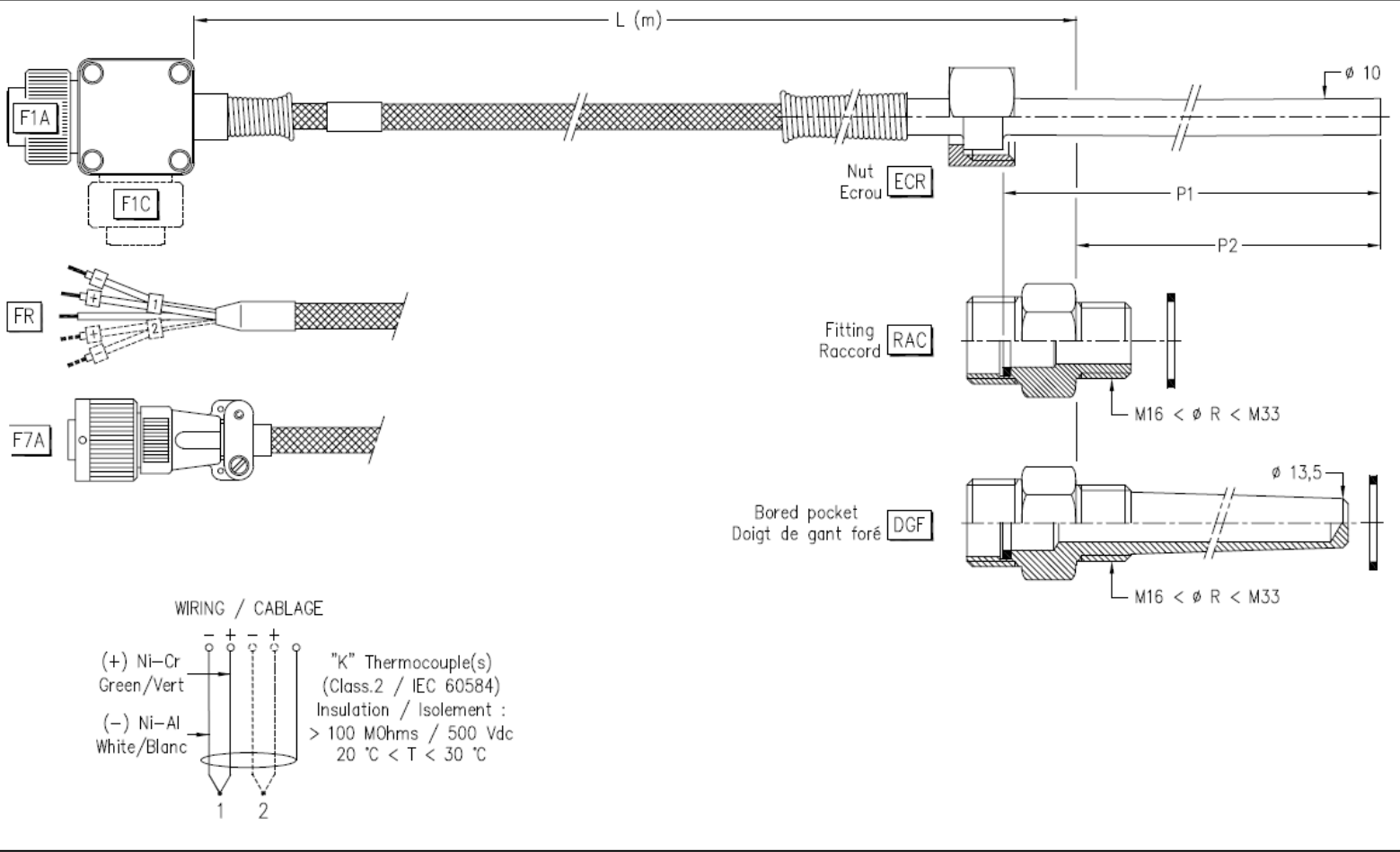
Markets

DEFENSE

INDUSTRY & UTILITIES

OIL & GAS

TRANSPORTATION



DESIGNATION CMR REFERENCE	
Sensor type / Type capteur	MD1U
DGF if bored pocket DGF si doigt de gant foré	(DGF)
1 x thermocouple K 2 x thermocouples 2K	xK
P2 if ØR or P1 if ECR P2 si ØR ou P1 si ECR	Px
Ø R Fitting or ECR nut Raccord Ø R ou écrou ECR	Ø R
Length L (m) / Longueur L (m)	L
Connection / Connexion	Fx

Industrial Engine Sensors – Exhaust Gas/Head/Turbo T °

EXHAUST GAS THERMOCOUPLE // MD20 2K

The MD2 thermocouple standard exhaust gas temperature sensor EGT is designed for medium and high-speed engines to be used with or without a pocket. Direct connection to a CMR thermometric pipe harness is recommended.



Description

The MD2 sensor uses a "K" type thermocouple for reliability, universal lead out and connection. This sensor benefits from a rapid response time thanks to minimum tube thickness at the tip, a fixed depth allowing variation monitoring between cylinders while remaining easy to maintain and inspect, reducing any risk of error.

Complying with the requirements of the main classification societies, MD2 sensors are available in a wide range of shapes/sizes and are available with an integrated 4-20 mA converter.

Specifications

▪ Element	Thermocouple
▪ Insertion Length (mm)	On demand
▪ Process Connection	On demand
▪ Elbow	90°
▪ Cable Length	On demand
▪ Electrical Connection	On demand
▪ Outlet	-
▪ Measurement Range	- 50°C / +800°C

Application

DEFENSE - ARMY

DEFENSE - NAVY

INDUSTRY & UTILITIES - PROCESS INDUSTRIES

INDUSTRY & UTILITIES – HAZARDOUS & MACHINERY

POWER – ENGINES & GENSETS

TRANSPORTATION – LAND

TRANSPORTATION – MARINE

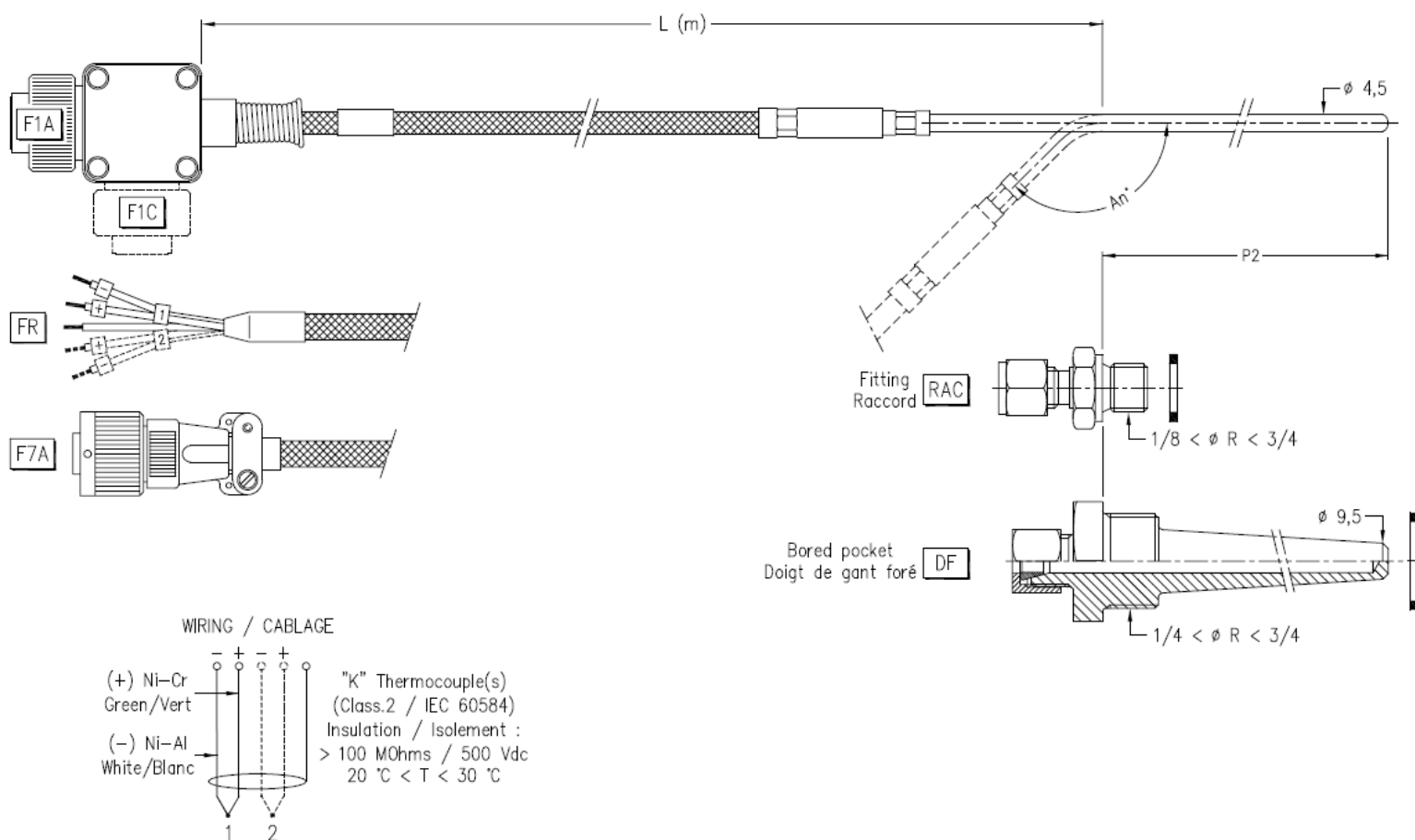
Markets

DEFENSE

INDUSTRY & UTILITIES

OIL & GAS

TRANSPORTATION



DESIGNATION CMR REFERENCE

Sensor type / Type de capteur	MD20 2K
DGF = If bored pocket DGF = Si doigt de gant foré	(DF)
1x thermocouple K 2x thermocouples 2K	xK
P2 plunger Plongeur P2	Px
ØR Fitting Raccord ØR	ØR
Elbow angle / Angle coude	An
Length L (m) Longueur L (m)	L
Connection / Connexion	Fx

Industrial Engine Sensors – Exhaust Gas/Head/Turbo T °

EXHAUST GAS THERMOCOUPLE // MD2RU

The MD2 thermocouple standard exhaust gas temperature sensor EGT is designed for medium and high-speed engines to be used without a pocket. Direct connection to a CMR thermometric pipe harness is recommended.



Description

The MD2 sensor uses a "K" type thermocouple for reliability, universal lead out and connection. This sensor benefits from a rapid response time thanks to minimum tube thickness at the tip, a fixed depth allowing variation monitoring between cylinders while remaining easy to maintain and inspect, reducing any risk of error.

Complying with the requirements of the main classification societies, MD2 sensors are available in a wide range of shapes/sizes and are available with an integrated 4-20 mA converter.

Specifications

▪ Element	Thermocouple
▪ Insertion Length (mm)	On demand
▪ Process Connection	On demand
▪ Elbow	90°
▪ Cable Length	On demand
▪ Electrical Connection	On demand
▪ Outlet	Adaptable
▪ Measurement Range	- 50°C / +800°C

Application

DEFENSE - ARMY

DEFENSE - NAVY

INDUSTRY & UTILITIES - PROCESS INDUSTRIES

INDUSTRY & UTILITIES – HAZARDOUS & MACHINERY

POWER – ENGINES & GENSETS

TRANSPORTATION – LAND

TRANSPORTATION – MARINE

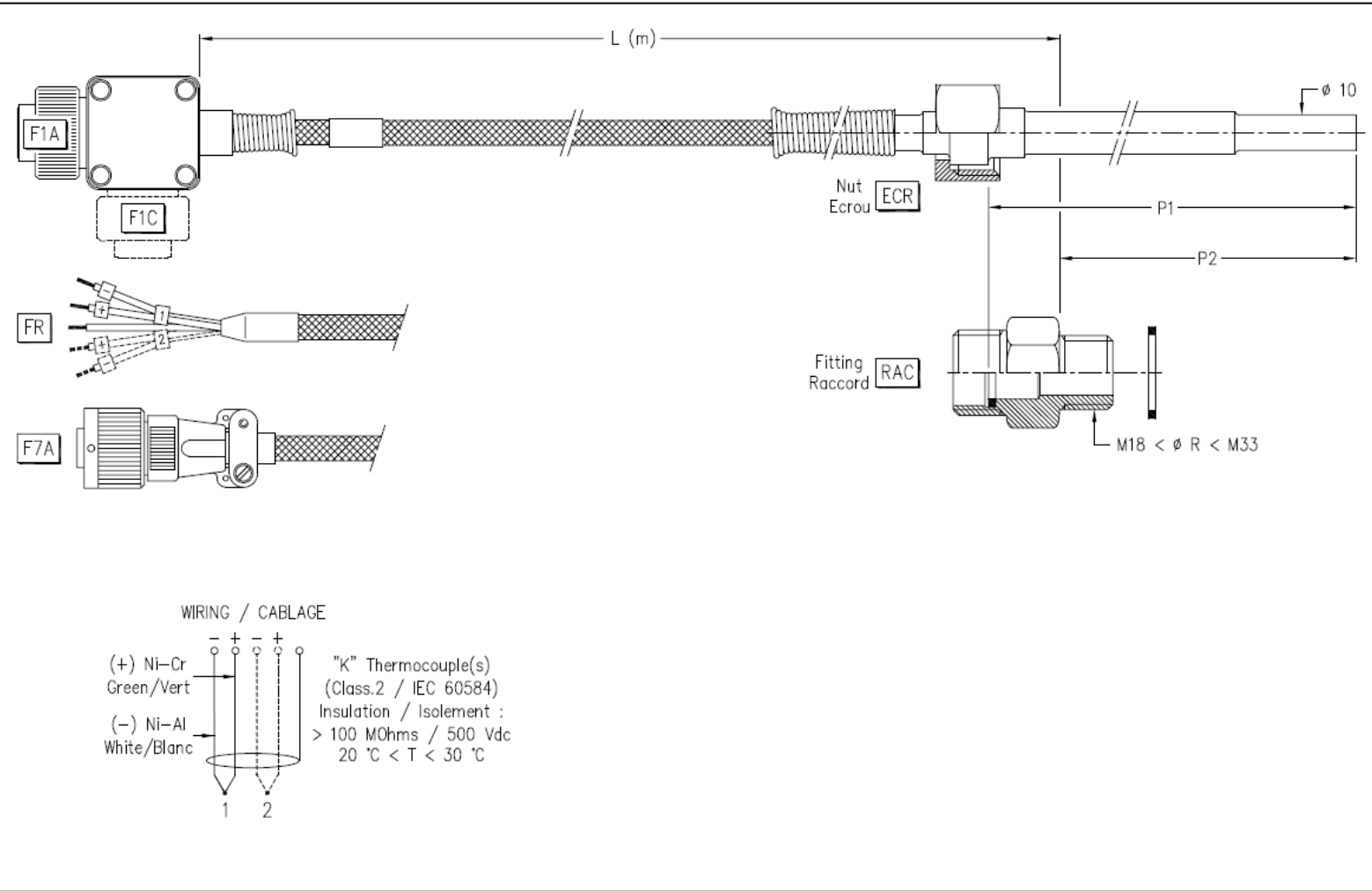
Markets

DEFENSE

INDUSTRY & UTILITIES

OIL & GAS

TRANSPORTATION



DESIGNATION CMR REFERENCE	
Sensor type / Type capteur	MD2RU
1x thermocouple K 2x thermocouples 2K	xK
P2 if ØR or P1 if ECR P2 si ØR ou P1 si ECR	Px
Ø R Fitting or ECR nut Raccord Ø R ou écrou ECR	Ø R
Length L (m) / Longueur L (m)	L
Connection / Connexion	EBT

Industrial Engine Sensors – Exhaust Gas/Head/Turbo T °

EXHAUST GAS THERMOCOUPLE // MD43 K

The MD43 series is a standard exhaust gas temperature sensor EGT for medium and high-speed engines, designed to be used with a pocket and specifically fitted with thick insulation materials for operating in and around the engine exhaust pipe. The MD43 can be connected directly to a CMR pyrometric pipe harness and performs temperature measurement through a “K” type thermocouple for high reliability, universal readout and easy connection.



Description

This sensor benefits from a rapid response time thanks to minimum tube thickness at the tip, a fixed depth that allows for monitoring for variations between cylinders and easy maintenance/inspection. This reduces the risk of any kind of error.

A wide range of shapes and sizes are available with compliance to the requirements of the main classification societies. The MD43 series is finished with mineral insulated cable as standard.

Specifications

▪ Element	Thermocouple
▪ Insertion Length (mm)	On demand
▪ Process Connection	On demand
▪ Elbow	90°
▪ Cable Length	On demand
▪ Electrical Connection	On demand
▪ Outlet	-
▪ Measurement Range	- 50°C / +800°C

Application

DEFENSE - ARMY

DEFENSE - NAVY

INDUSTRY & UTILITIES - PROCESS INDUSTRIES

INDUSTRY & UTILITIES – HAZARDOUS & MACHINERY

POWER – ENGINES & GENSETS

TRANSPORTATION – LAND

TRANSPORTATION – MARINE

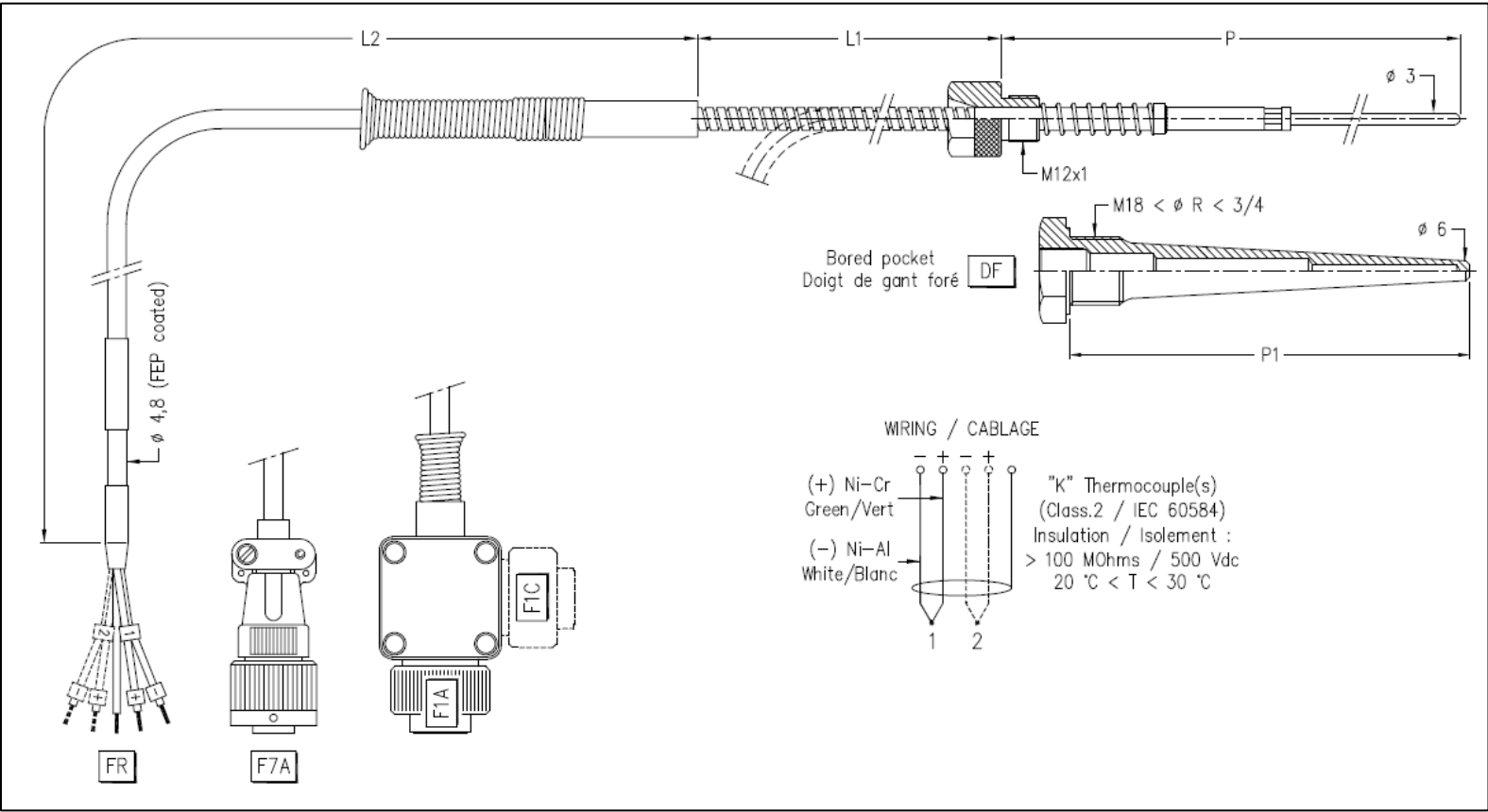
Markets

DEFENSE

INDUSTRY & UTILITIES

OIL & GAS

TRANSPORTATION



DESIGNATION CMR REFERENCE	
Sensor type / Type capteur	MD43K
DF if bored pocket DF si doigt de gant foré	(DF)
1 x thermocouple K 2 x thermocouples 2K	xK
P1 if pocket or P if spare P1 si DF ou P si rechange	Px
Ø R if pocket or M12 if spare Ø R si DF ou M12 si rechange	Ø R
Length L (m) / Longueur L (m)	L1/L2
Connection / Connexion	Fx

Industrial Engine Sensors – Main Bearing

MAIN BEARING SENSOR // MP46 S

The MP46S bearing temperature monitoring sensor is designed for industrial diesel and gas engines. This sensor constantly monitors the main bearing, providing a clear warning in case of bearing seizure. The tip of the sensor is typically positioned onto the back of the bearing shell or might be very close to it. The PT100 element provides very good accuracy for this application.



Description

The MP46 series is available in standard or custom configuration by our engineering design service, terminating in a DIN 43760 connection.

The MP46 series offers an extremely low response time and detects the overheating of bearings during the operation of reciprocating and rotating machines.

Built to withstand harsh environments and high levels of vibration, the MP12 is fitted with a spring loading system and complies with the classification societies requirements and NF- C 42330 standards

Specifications

▪ Element	1PT100
▪ Insertion Length (mm)	On demand
▪ Process Connection	On demand
▪ Elbow	-
▪ Cable Length	On demand
▪ Electrical Connection	On demand
▪ Outlet	-
▪ Measurement Range	- 50°C / +150°C

Application

DEFENSE - ARMY

DEFENSE - NAVY

INDUSTRY & UTILITIES - PROCESS INDUSTRIES

INDUSTRY & UTILITIES – HAZARDOUS & MACHINERY

POWER – ENGINES & GENSETS

TRANSPORTATION – LAND

TRANSPORTATION – MARINE

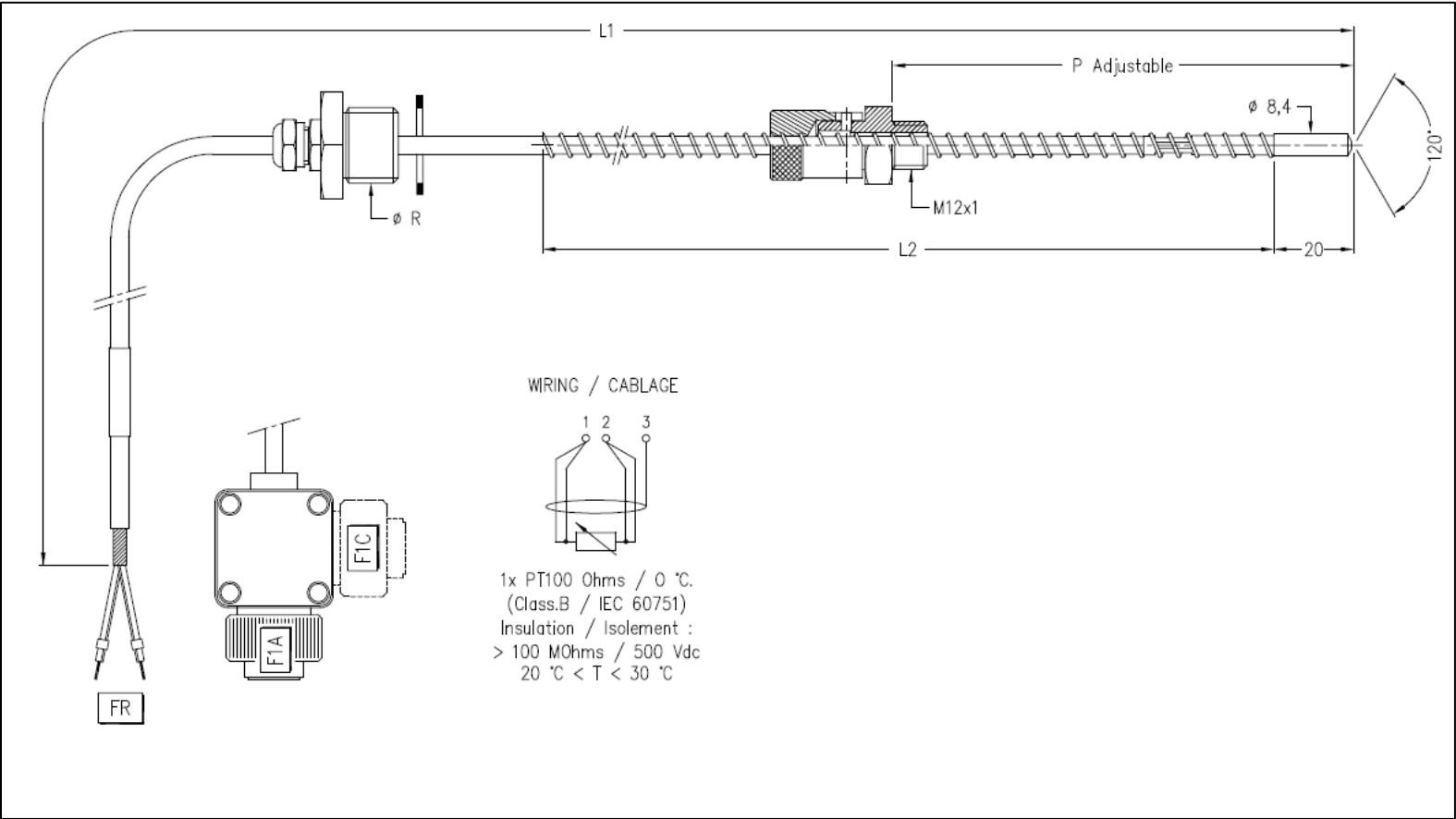
Markets

DEFENSE

INDUSTRY & UTILITIES

OIL & GAS

TRANSPORTATION



DESIGNATION CMR REFERENCE	
Sensor type / Type capteur	MP46S
S = 1 x PT100	S
Bearing fitting Raccord palier	M12
Spring length L2 (m) Longueur ressort L2 (m)	L2
Ø R Crankcase fitting Raccord Ø R bâti	Ø R
Cable length L1 (m) / Longueur L1(m)	L1
Connection / Connexion	Fx

Industrial Engine Sensors – Main Bearing

MAIN BEARING SENSOR // MP46 2M

The MP46 2M bearing temperature monitoring sensor is designed for industrial diesel and gas engines. This sensor constantly monitors the main bearing, providing a clear warning in case of bearing seizure. The tip of the sensor is typically positioned onto the back of the bearing shell or might be very close to it. The PT1000 element provides very good accuracy for this application.



Description

The MP46 series is available in standard or custom configuration by our engineering design service, terminating in a DIN 43760 connection.

The MP46 series offers an extremely low response time and detects the overheating of bearings during the operation of reciprocating and rotating machines.

Built to withstand harsh environments and high levels of vibration, the MP12 is fitted with a spring loading system and complies with the classification societies requirements and NF- C 42330 standards

Specifications

▪ Element	2PT1000
▪ Insertion Length (mm)	On demand
▪ Process Connection	On demand
▪ Elbow	-
▪ Cable Length	On demand
▪ Electrical Connection	On demand
▪ Outlet	-
▪ Measurement Range	- 50°C / +150°C

Application

DEFENSE - ARMY

DEFENSE - NAVY

INDUSTRY & UTILITIES - PROCESS INDUSTRIES

INDUSTRY & UTILITIES – HAZARDOUS & MACHINERY

POWER – ENGINES & GENSETS

TRANSPORTATION – LAND

TRANSPORTATION – MARINE

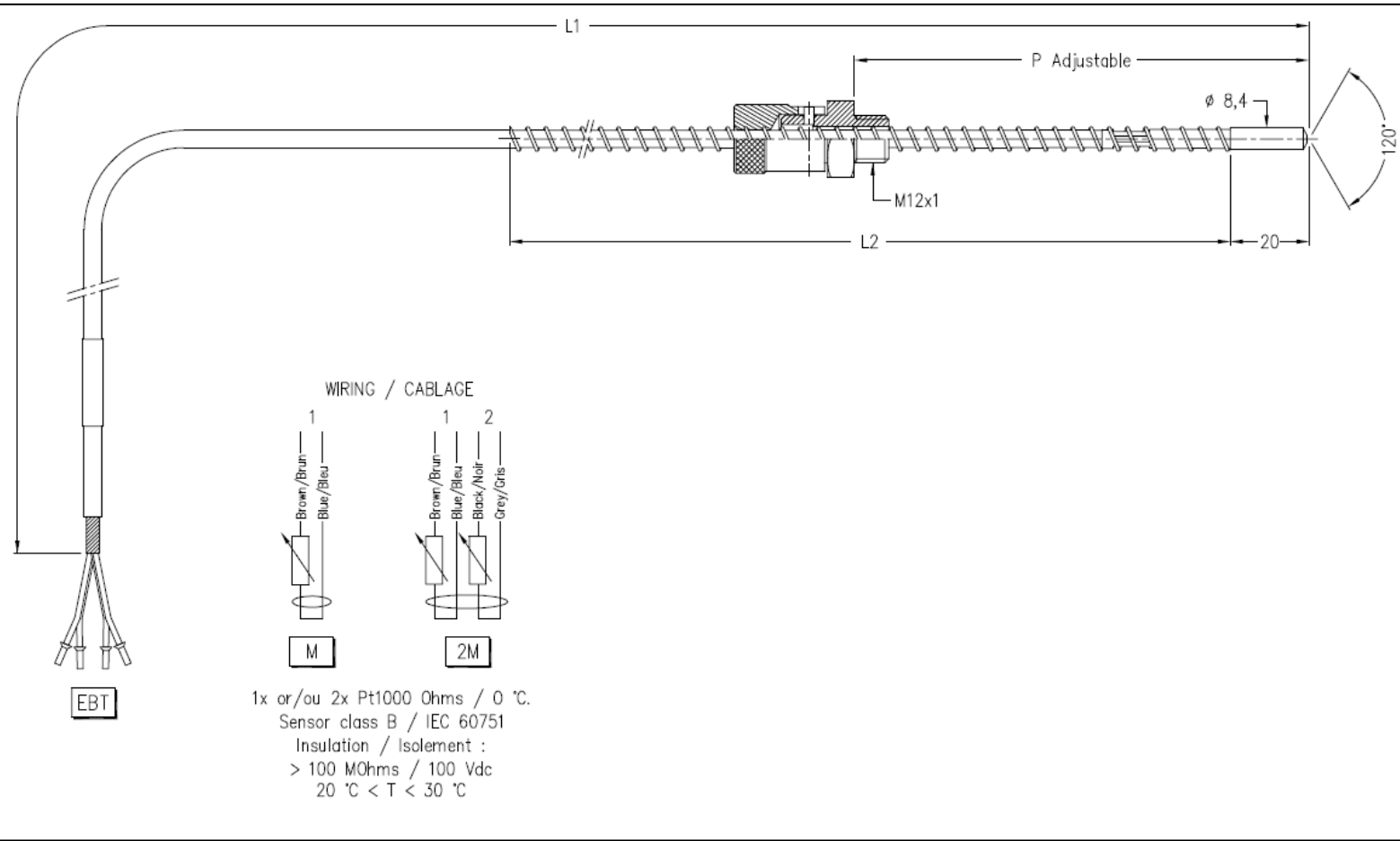
Markets

DEFENSE

INDUSTRY & UTILITIES

OIL & GAS

TRANSPORTATION



DESIGNATION CMR REFERENCE	
Sensor type / Type capteur	MP46 2M
M = 1x PT1000 2M = 2x PT1000	(2)M
Bearing fitting Raccord palier	M12
Spring length L2 (m) Longueur ressort L2 (m)	L2
Cable length L1 (m) / Longueur L1(m)	L1
Connection / Connexion	EBT



CMR SUZHOU

Workshop 2#, No.128 Fangzhou Road – SIP • Suzhou, China 215024

中国苏州园区方洲路128号中国科学院纳米科技产业化基地2#厂房（4区-B幢）• 邮编 215024

Tel : + 86 (0512)6289 0311*8027 | Fax: + 86 (0512)6289 0312

www.cmr-group.com