

Marine Safety, Instrumentation and Control System



COMD



AOMD



BWM



SPM



TPM



BWMS

Products for Marine Industry

- Oil Mist Detection System for engine room (AOMD)
- Oil Mist Detection System for diesel engine (COMD)
- Bearing Wear Monitoring System (BWM)
- Ship Performance Monitoring system (SPM)
- Shaft Torque Power RPM Meter (TPM)
- Float Level Gauging System (FLG)
- Level Temperature Density Gauging System (LTD)
- Power Transmission System
- UV Sterilizer, Actuator, On-off Valve
- Gaskets, Sealing Materials
- Ballast Water Management System (BWMS)

Introduction

Since the foundation of the company in 1970, SPECS Corporation has put its highest priority of concern on meeting the diverse and difficult needs of its clients and becoming an innovative leader in the technologies that the company is pursuing.

SPECS is now one of the undisputed leaders in its area of expertises, which to provides products and services for safety, instrumentation and control systems required by marine and related industries.

During the last decades of its history, marine industry has acknowledged Oil Mist Detector (OMD) system as an important measurement to reduce the risk of fire from machinery space flammable oil systems or explosions induced by oil mist inside diesel engine crank case.

Though SPECS is one of the latest participants in this market, its oil mist detector for engine room (AOMD) and the one for inside crankcase (COMD) have already obtained reputation of being the top quality products throughout global clients.

For those SPECS AOMD and COMD, type approvals by major classification societies of the world have been granted.

Bearing wear monitoring system(BWM) is another result of SPECS' continuous efforts to respond to the needs of its clients. SPECS' BWM system can check the wear conditions of bearing in ship engine by real time monitoring.

Included above OMD, BWM system, SPECS supplies ship's monitoring system which consist of SPM(Ship Performance Monitoring system), TPM I (Shaft Torque Power RPM Meter) and TPM II (Shaft Torque Power RPM Meter). This System can monitor, check and help to maintain better performance for ship's energy saving.

SPECS provides the systems and services including installation, consulting and repair.

Other than above products for marine industry, SPECS also manufactures and supplies products such as LTD System in LNG Terminals and FSRU, FLG in LNG carriers, gaskets of different designs, UV sterilizing systems, actuators, on-off valves and mechanical power transmissions to various industries.



Major Products



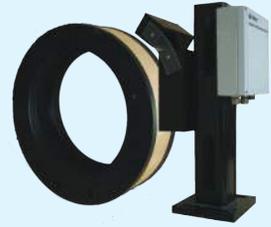
AOMD



COMD



OMM



TPM



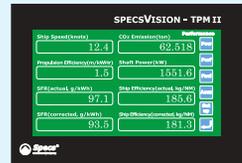
AOMD



COMD



OMM



TPM



BWM



SPM



LTD

Major Customers



Global Service Network



SPECS provides local service and support at major locations world wide. Service and support work is carried out under the supervision of your personal quality manager, who will ensure that you receive high-quality service and solution where and when you need it.

All of your contacts with this quality manager will, we feel, give you confidence in our expertise and capability, of providing you with a fast and efficient service. This service will be specifically designed to improve and optimize your system performance and availability.

To meet your expected requirement and with a local inventory of spare parts, our well-qualified field service engineers will help you timely and effectively.



H.Q.

Techno Park Bldg. B-7F, #723 Pangyo-ro, Bundang-gu,
Seongnam City, Gyeonggi-do, Korea 463-760
TEL +82-31-706-5211 FAX +82-31-706-5214
<http://www.specsvision.com>, www.specs.co.kr
Email specs@specs.co.kr

Busan Office

Byucksan Digital Valley. B-703, #303 Daedingro, Sasang-gu,
Busan, Korea 617-800
TEL +82-51-803-0041 FAX +82-51-804-3364
Email specsps@specs.co.kr

SPECSVISION-III A

Engine Room Oil Mist Detection System

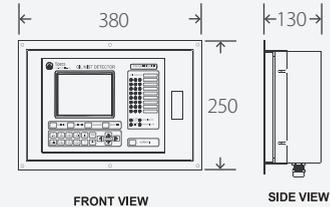
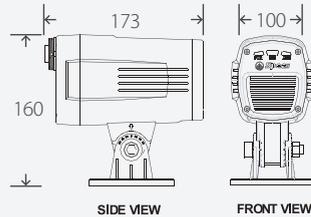


Atmospheric OMD System

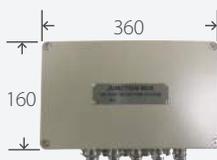


SYSTEM FEATURES

- Newest version based on recent IACS effectiveness verified based on M67 rules
- Superior accuracy verified
- Most rigid assembly
- Instantaneous response to alarm
- RS-485 / 422 to Ship's alarm monitoring system
- Less contaminated sensor design
- Highly integrated single board design
- Robust anti-vibration assembly
- Multi- functional remote monitoring unit
- Proven test and calibration chamber
- MIL STD-167, MIL-S-901D

SPECVISION-ⅢA*Engine Room
Oil Mist Detection System***TECHNICAL SPECIFICATIONS****Oil Mist Detector**

Type	VISION ⅢA Multi Sensor
Sensitivity	0.01 mg/ℓ
Communication Between RMU & Detector	RS-485 or 4~20 mA at range of 0~5.0 mg/ℓ
Indication	Green : Power ON Yellow : System Fault Red : Mist Alarm
5-Way Plug in Connector or Cable gland	Power : 1, 2 pin Signal : 3, 4 pin Shield : 5 pin
Mounting	Standard Stand or Bracket
Enclosure Rating	IP 44
Power	24 VDC
Temp. Rating(Operation)	0°C to 70°C
Dimensions	H 160 x W 100 x D 173 mm
Weight	1.4 kg
Housing	PPA +GF 30%, Halogen free, Aluminum Body

**Junction Box**

Type	VISION ⅢA
Max. No. of Detector Input	14, Individual Connection
Enclosure Rating	IP 56
Temp. Rating	0°C to 70°C
Dimensions	H 160 x W 360 x D 90 mm
Weight	3.5 kg
Housing	Aluminum

Remote Monitoring Unit (RMU)

Type	VISION ⅢR
Display	6" Monochrome LCD(340 x 240) Mist-Level Display Mode (Bar & Digital Value)
Scanning Time	50 msec for each point
Max. No. of Group	8 Groups (14pts per group)
Max. No. of Detector	112 points
Measuring Range	0~5.00 mg/ℓ
Communication Signal Output	RS-485(protocol : MODBUS Dual)
Memory	
Event log	3000 Data
History log	Every 10 sec, up to 12 hrs
Alarm & Failure Status	
Mist Alarm	
Mist high alarm	RMU-Red LED ON(Alarm Indicator Panel)
Pre-warning alarm	Alarm Channel Displayed on LCD
System fault alarm	RMU-Yellow LED ON (Fan / Communication Alarm Indicator Panel)
Alarm Setting	Mist High Alarm(Max. 2.5 mg/ℓ) Pre-warning alarm : User adjustable
Alarm Contacts	Mist High : N.O(8 ea) Pre-warning alarm : N.C(8 ea) N.O/N.C selectable 125 VAC 0.5 A, 30 VDC 1.0 A, 1a1b
Enclosure Rating	IP 44
Power	24 VDC
Current rating	1.5 A
Over voltage protection	+30%~20% of voltage rating(24 VDC)
Temp. Rating	0°C to 70°C
Dimensions	
Wall Mounting	H 250 x W 380 x D 130 mm
Flush Mounting	H 290 x W 420 x D 130 mm
Weight	7.5 kg
Housing	Carbon Steel

**Head Office**

Techno Park Bldg. B-7F, #723 Pangyo-ro, Bundang-gu
Seongnam City, Gyeonggi-do, Korea 463-070
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http://www.specsvision.com, www.specs.co.kr
Email specs@specs.co.kr

Busan Office

Byucksan Digital Valley. B-703, #303 Daedingro,
Sasang-gu, Busan City, Korea 617-800
TEL +82-51-803-0041 FAX +82-51-804-3364
Email specsp@specs.co.kr

SPECSVISION-III C

Diesel Engine Crank Case Oil Mist Detection System



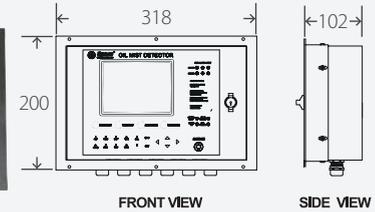
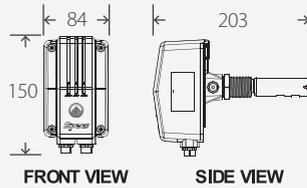
Diesel Engine Crank Case OMD System



SYSTEM FEATURES

- **Newest version based on recent IACS effectiveness verified based on M67 rules**
- **Superior accuracy verified**
- **Most rigid assembly**
- **Instantaneous response to alarm**
- **RS-485 / 422 to Ship's alarm monitoring system**
- **Less contaminated sensor design**
- **Highly integrated single board design**
- **Robust anti-vibration assembly**
- **Multi- functional remote monitoring unit**
- **Proven test and calibration chamber**



SPECVISION-III C*Diesel Engine Crank Case
Oil Mist Detection System***TECHNICAL SPECIFICATIONS****Oil Mist Detector**

Type	VISION III C
Sensitivity	0.01 mg/ℓ
Communication Between RMU & Detector	RS-485
Indication	Green : Power ON Yellow : System Fault Red : Mist Alarm
5- Way Plug in Connector	Power : 1, 2 pin Signal : 3, 4 pin Shield : 5 pin
Mounting	3/4" PF
Enclosure Rating	IP 56
Power	24 VDC
Temp. Rating(Operation)	0°C to 70°C
Dimensions	H 150 x W 84 x D 203 mm
Weight	0.6 kg
Housing	PPA +GF 30%, Halogen free

**Junction Box**

Type	VISION III C
Max. No. of Detector Input	14 Loop Connection
Enclosure Rating	IP 56
Temp. Rating	0°C to 70°C
Dimensions	H 80 x W 110 x D 70 mm
Weight	0.35 kg
Housing	PC + ABS

Remote Monitoring Unit (RMU)

Type	VISION III R
Display	6" Monochrome LCD(340 x 240) Mist-Level Display Mode (Bar & Digital Value)
Scanning Time	50 msec for each point
Max. No. of Group	8 Groups (14pts per group)
Max. No. of Detector	112 points
Measuring Range	0~5.00 mg/ℓ
Communication Signal Output	RS-485(protocol : MODBUS Dual)
Memory	
Event log	3000 Data
History log	Every 10 sec up to 12hrs
Alarm & Failure Status	
Mist Alarm	
Mist high alarm	RMU-Red LED ON(Alarm Indicator Panel)
Pre-warning alarm	Alarm Channel Displayed on LCD
System fault alarm	RMU-Yellow LED ON (Fan / Communication Alarm Indicator Panel) and Failed Channel Displayed on LCD
Alarm Setting	Mist High Alarm(Max. 2.5 mg/ℓ) Pre-warning alarm : User adjustable
Alarm Contacts	Mist High : N.O(8 ea) Pre-warning alarm : N.C(8 ea) N.O/N.C selectable 125 VAC 0.5 A, 30 VDC 1.0 A, 1a1b
Enclosure Rating	IP 44
Power	24 VDC
Current rating	1.5 A
Over voltage protection	+30% -20% of voltage rating (24 VDC)
Temp. Rating	0°C to 70°C
Dimensions	
Wall Mounting	H 200 x W 318 x D 102 mm
Flush Mounting	H 237 x W 353 x D 102 mm
Weight	6.0 kg
Housing	Carbon Steel

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<http://www.specsvision.com>, www.specs.co.kr
Email specs@specs.co.kr

Busan Office

Byucksan Digital Valley. B-703, #303 Daedingro,
Sasang-gu, Busan City, Korea 617-800
TEL +82-51-803-0041 FAX +82-51-804-3364
Email specsps@specs.co.kr

SPECSVISION-5C

Diesel Engine Crank Case Oil Mist Detection System



SPECSVISION-5C

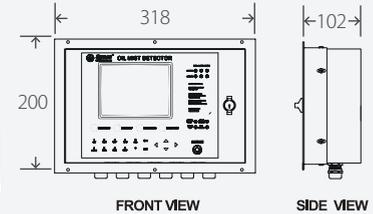
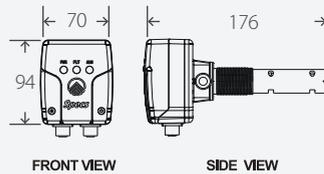
Diesel Engine Crank Case OMD System



SYSTEM FEATURES

- Newest version based on recent IACS effectiveness verified based on M67 rules
- Superior accuracy verified
- Instantaneous response to alarm
- RS-485 / 422 to Ship's alarm monitoring system
- Multi- functional remote monitoring unit
- Most compact/rigid design
- Light scattering measurement
- Less contaminated sensor design
- No moving parts
- Robust anti-vibration assembly
- Upward/downward cable connection



SPECVISION-5C*Diesel Engine Crank Case
Oil Mist Detection System***TECHNICAL SPECIFICATIONS****Oil Mist Detector**

Type	VISION 5C
Sensitivity	0.01 mg/ℓ
Communication Between RMU & Detector	RS-485
Indication	Green : Power ON Yellow : System Fault Red : Mist Alarm
5- Way Plug in Connector	Power : 1, 2 pin Signal : 3, 4 pin Shield : 5 pin
Mounting	3/4" PF
Enclosure Rating	IP 56
Power	24 VDC
Temp. Rating(Operation)	0°C to 70°C
Dimensions	H 94 x W 70 x D 176 mm
Weight	0.3 kg
Housing	PPA +GF 30%, Halogen free

**Oil Mist Monitor**

Type	VISION IIIIC
Max. No. of Detector Input	14 Loop Connection
Enclosure Rating	IP 56
Temp. Rating	0°C to 70°C
Dimensions	H 80 x W 110 x D 70 mm
Weight	0.35 kg
Housing	PC + ABS

Remote Monitoring Unit (RMU)

Type	VISION IIIIR
Display	6" Monochrome LCD(340 x 240) Mist-Level Display Mode (Bar & Digital Value)
Scanning Time	50 msec for each point
Max. No. of Group	8 Groups (14pts per group)
Max. No. of Detector	112 points
Measuring Range	0~5.00 mg/ℓ
Communication Signal Output	RS-485(protocol : MODBUS Dual)
Memory	
Event log	3000 Data
History log	Every 10 sec up to 12hrs
Alarm & Failure Status Mist Alarm	
Mist high alarm	RMU-Red LED ON(Alarm Indicator Panel)
Pre-warning alarm	Alarm Channel Displayed on LCD
System fault alarm	RMU-Yellow LED ON (Fan / Communication Alarm Indicator Panel) and Failed Channel Displayed on LCD
Alarm Setting	Mist High Alarm(Max. 2.5 mg/ℓ) Pre-warning alarm : User adjustable
Alarm Contacts	Mist High : N.O(8 ea) Pre-warning alarm : N.C(8 ea) N.O/N.C selectable 125 VAC 0.5 A, 30 VDC 1.0 A, 1a1b
Enclosure Rating	IP 44
Power	24 VDC
Current rating	1.5 A
Over voltage protection	+30 % -20 % of voltage rating(24 VDC)
Temp. Rating	0°C to 70°C
Dimensions	
Wall Mounting	H 200 x W 318 x D 102 mm
Flush Mounting	H 237 x W 353 x D 102 mm
Weight	6.0 kg
Housing	Carbon Steel

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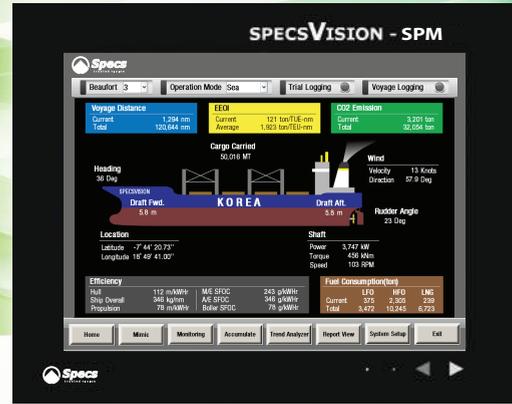
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Busan Office

Byucksan Digital Valley, B-703, #303 Daedingro,
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SPECSVISION-SPM

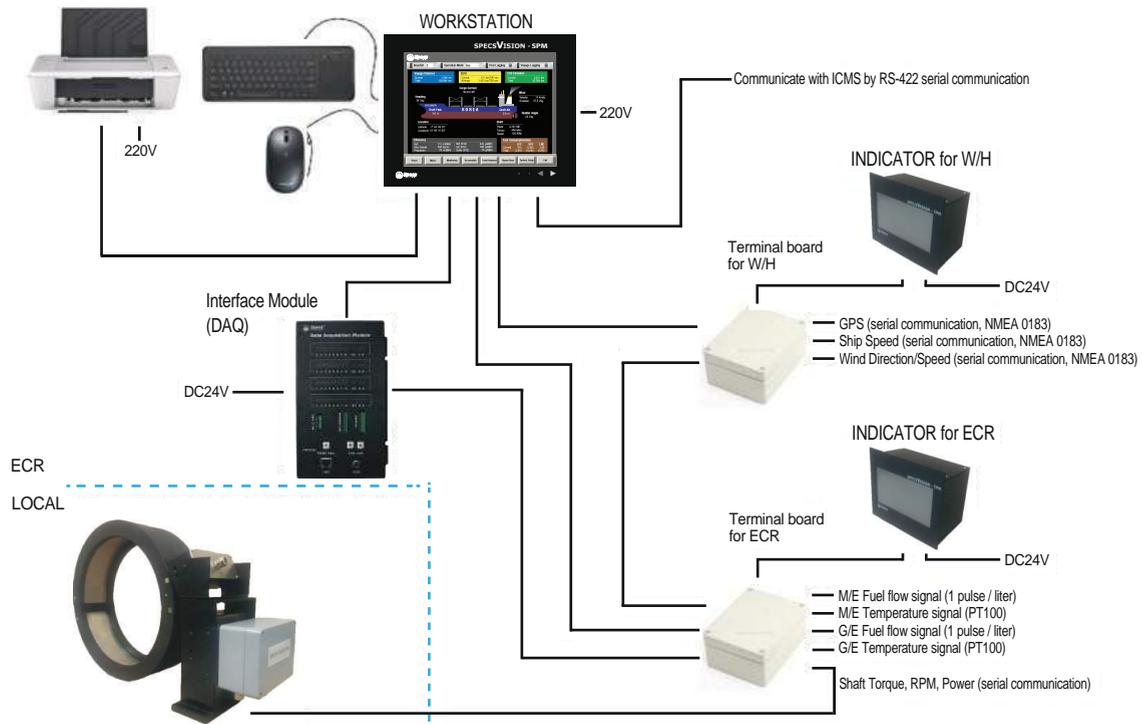
Ship Performance Monitoring system



SPECSVISION-SPM is most useful and practical tool for monitoring, reporting and verification of CO₂ emissions and energy efficiency of all ships. It has following functions which can be adjusted based on the different ship types, sizes and operational profiles.

- Calculates and displays EEOI & CO₂ emission values as a valuable SEEMP mechanism based on IMO regulations.
- Displays, prints and stores real-time measurements and performance data
- Presents trend graphs of the data for a variable period of time
- Displays actual operational values compared with reference values of ideal case
- Easy maintenance by applying slot type card to DAQ
- Enables users to store more than 150 different data
- Enables engineers to make the optimum plan for ship maintenance and/or renovation based on the stored performance data
- Presents daily, voyage and sea trial reports
- Transfers various data to the owner via ship's network for fleet management.

Configuration



SPECVISION-SPM

Ship Performance Monitoring system



TECHNICAL SPECIFICATIONS

Input data	Interface for all possible data
Calculated values	Accumulated fuel consumption & main engine energy output, total revolutions, total distance travelled, main engine fuel efficiency, propulsion efficiency, vessel overall efficiency, EEOI and CO ₂ emission
Reference curves	Shaft power vs. rpm, shaft power vs. ship speed, fuel consumption vs. ship speed, specific fuel rate vs. shaft power
Trend curves	Short & long term trend of all instant data and calculated values for max. 30 years
Displays	Numeric and graphic display in colors
Reports	Daily, voyage and trial reports
Main controller/Monitor	15-inch color TFT-LCD display, capacitive touch screen, 1024 X 768 XGA Windows 7, 500GB HDD, 6USB, 2RS232, RS485/422, 2Ethernet W385 X H307 X D100 mm Flush panel mounting
Data aquisition modules	TTL input module: 8ch (DC 12~24V) Temp. input module: 4ch T/C or Pt 100 Analog input module : 10ch (4~20mA, 0~ 5V, -10V ~ +10V) Binary input module : 10ch (pulse, counter) Serial communication : 2ch (RS-485/RS-422, RS-232) Module extension : max. 10 modules



Head Office

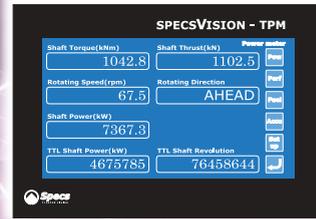
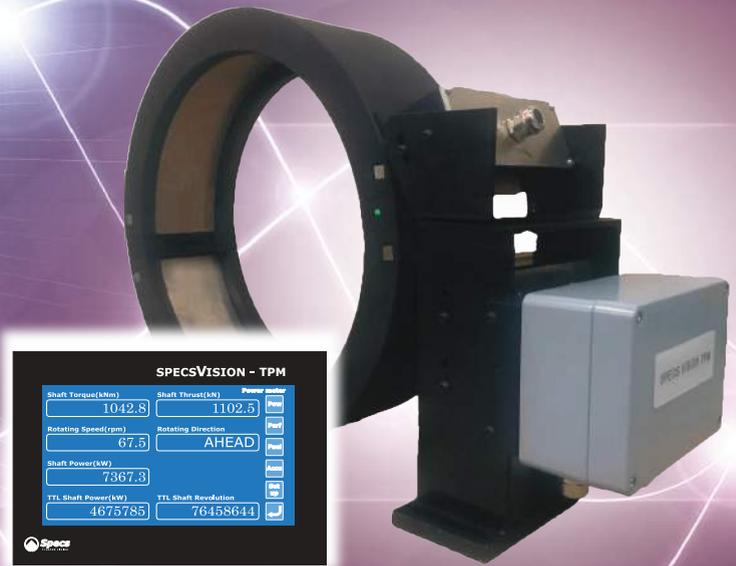
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Sasang-gu, Busan City, Korea 617-800
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SPECSVISION-TPM

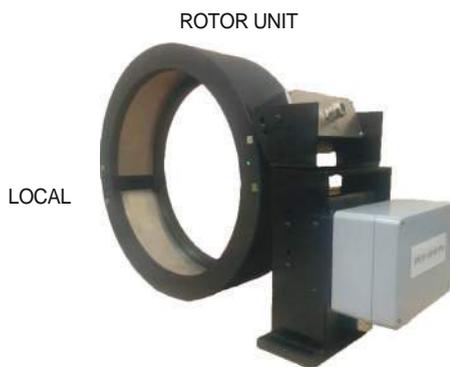
Shaft Torque Power RPM Meter



SPECS Shaft Torque Power RPM Meter is simple, but it can measure and display shaft torque, thrust, power, RPM, rotating direction, accumulated rotations which are transferred from the main engine to the propeller by adopting strain gage and proximity sensor technique. It is easy to install on all kinds of vessels both new and existed. Both metric and SI are available.

SHAFT POWER METER

- **NOTE****
 1. Cable : Yard supply
 2. Terminal strip : Yard supply



INDICATOR for W/H (option)

Available Display Data

- Shaft Torque
- Shaft RPM
- Shaft Power
- Total Shaft revolutions
- Total Shaft Power



24VDC, 2A
(Yard Supply)

INDICATOR for ECR

Available Display Data

- Shaft Torque
- Shaft RPM
- Shaft Power
- Total Shaft revolutions
- Total Shaft Power



24VDC, 2A
(Yard Supply)

Serial Output other Device

24VDC, 2A
(Yard Supply)

SYSTEM FEATURES

- Easy to install by using simple bracket arrangement
 - No shaft modifications
- Robust design for operation in particular environments
- Various outputs available for all data logging requirements
- Maximum shaft speed of 1500rpm for all shaft sizes
- High accuracy and repeatability
- Optional thrust measurement
- Not affected by any polluttional or hazardous materials
- Digital data transmission for clean reliable data
- Simple calibration setup for increased accuracy of torque data
- Large on-shaft tolerance makes it easy installation
- Single or dual shaft applications
- Maintenance free operation owing to no mechanical wear

SPECVISION-TPM

Shaft Torque Power RPM Meter

TECHNICAL SPECIFICATIONS

SHAFT SPECIFICATION

Measurable Shaft Diameter Range 200 ~ 1000 mm



EQUIPMENT SPECIFICATIONS

Sensing Element
Torque Strain gauge
Thrust Strain gauge
Shaft Revolution Proximity sensor



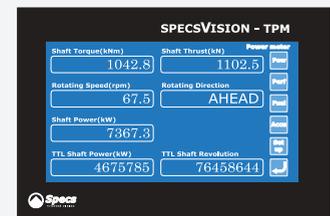
Control Display Unit

Display

Master(ECR)/Slave(W/H) mode installed on engine control room
Shaft torque, RPM, shaft power
Rotating direction, thrust(optional)
Accumulated shaft power and revolutions

Communication Dimensions

Analog output (4-20mA), serial output (RS-485/422)
W210 X H150 X D140 mm



Remote Indicator

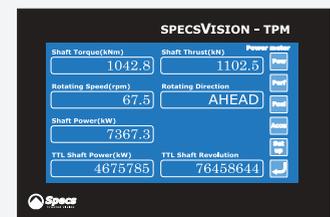
Display

Installed on W/H as a optional indicator

Shaft torque, RPM, shaft power
Rotating direction, thrust(optional)
Accumulated shaft power and revolutions

Communication Dimensions

Analog output (4-20mA), serial output (RS-485/422)
W210 X H150 X D140 mm



Head Office

Technopark Building B 7th Floor, 723 Pangyo-ro,
Bundang-gu, Seongnam City, Gyeonggi-do, Korea 463-760
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