



## **RETROFIT** – *modernise your* **engine control system**

### **Invest in the future and protect your investment**

Engine control systems are not immune to the passage of time. Unscheduled downtimes due to technical problems, particularly with older systems are not uncommon. It is often difficult to find spare parts. Well then? Retrofit or a new system?

In most cases a Retrofit is less expensive and more efficient than purchasing a complete new automation system. We have the fitting solution for you: our Retrofit systems are specially optimised for older engine control systems and engine safety systems on board.

We already provide a large number of engines factory-set (e. g. Alco, Caterpillar, Cummins, Deutz, MAN, MTU, Nohab, Pilstick, SKL, Wärtsila, etc.; you will find a detailed list on the backside of this flyer). This simplifies the adaption to your engine and your existing sensors. Consequently you save time and costs on system design, installation and commissioning. In addition, you will benefit from state-of-the-art technology and the latest, useful functions.

### **Our services**

- Simple system structure, fast planning and implementation
- On-site commissioning by our service technicians
- Modernisation of the electronic system for engines including electric cabling
- Assurance of existing functions
- Compatibility to existing interfaces
- Adaptation of your sensor cabling to our terminal boxes
- Use of existing switch cabinets
- Modernisation of your displays and visualisations
- Uncomplicated service and maintenance

### **Your benefits at a glance**

- Use of existing sensors
- Usage of the latest, additional functions: condition monitoring, remote maintenance, trends, event logging, etc. (optional)
- Guaranteed commissioning time
- Reduction of downtimes due to pre-configured replacement kits and partial assembly during shipping possible
- Optimisation of performance by diagnostic function
- Reduction of maintenance costs and downtimes
- Life-time extension by means of modern, robust and efficient components
- Simplified class approval due to the fact that the components have already been classified
- Experience in over 3000 delivered engine monitoring systems

### **Why a Retrofit from NORIS?**

#### **Because experience counts.**

Shipbuilding, sensors and automation – these are our greatest strengths. Since 1925 we manufacture measuring and control systems, devices and sensors for the shipbuilding industry. We understand your requirements and know the challenges which a modernisation of old systems implies. Through our subsidiaries in Rostock, Rotterdam, Singapore and Shanghai and our global network of partners, we are always nearby. Please contact us and we will send you a noncommittal offer if you wish.

With our Retrofit systems, we support the modernisation of control and safety systems for subsequent engine types due to factory presetting. If your engine is not listed below please contact our technical sales department.

### **ALCOR Engine Types**

ALCOR 251 12V
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### **Caterpillar Engine Types**

CAT 3200	CAT 342
CAT 3300	CAT 343
CAT 3400	CAT 346
CAT 3500	CAT 348
CAT 3600	CAT 349
CAT 3500B	CAT 353
CAT 3508B	CAT 379
CAT 3512B	

### **Caterpillar MaK Engine Types**

CAT-MaK RM20	CAT-MaK VM32
CAT-MaK RM25	CAT-MaK VM43
CAT-MaK RM32	CAT-MaK M601
CAT-MaK RM43	

### **CUMMINS Engine Types**

CUMMINS 6CT8.3DM	CUMMINS QSM11DM
CUMMINS KTA50DM	

### **DEUTZ/MWM Engine Types**

KHD/MWM BVM640	KHD/MWM TBD620
KHD/MWM BF.M1013MC	KHD/MWM TBD604BL
KHD/MWM BF.M1015MC	KHD/MWM TBD604BV
KHD/MWM SBV.6M540	KHD/MWM TBD645BL
KHD/MWM SBV.6M628	KHD/MWM TBD12M540
KHD/MWM SBV.xM628	KHD/MWM TRD 440/6
KHD/MWM RBV12M350	KHD/MWM OP.SW
KHD/MWM SBzxyyy	KHD/MWM SBzxyyy
KHD/MWM SBzyyyy	KHD/MWM TDB440K8
KHD/MWM MAN 8L32/40	

### **FIAT Engine Types**

FIAT GMTBL230
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### **MaK Engine Types**

MaK 8 M 552	MaK ... M 551
MaK ... M 453 ...	

### **MAN Engine Types**

MAN 6S26MC	MAN 6L28/32-DHO
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### **MAN B& W Alpha Diesel Engine Types**

MAN B&W.V23-L-
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### **MTU Engine Types**

MTU 16V 956TB91	MTU 16V 396 TEW2
MTU 16V 396TE	MTU 16V 396 TEW3

### **NOHAB Engine Types**

SF116VS-F NOHAB
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### **Pielstick Engine Types**

Pielstick 12PC2V	Pielstick xxV10
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### **SKL Engine Types**

VD29/24 SKL
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### **Stork Werkspoor Diesel Engine Types**

TM410 SWDiesel	SW280 SWDiesel
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### **Wärtsilä Engine Types**

Wärtsilä D628	Wärtsilä CWxLxx0
Wärtsilä F240	Wärtsilä 6LZA40
Wärtsilä M628	Wärtsilä 8LZA40
Wärtsilä R210	Wärtsilä CamShW38A
Wärtsilä SW280	Wärtsilä CamShW38B
Wärtsilä SW280/W20	Wärtsilä CamShR32
Wärtsilä TM410L	Wärtsilä FlywhW38A
Wärtsilä TM410V	Wärtsilä FlywhW38B
Wärtsilä W26	Wärtsilä FlywhR32
Wärtsilä W32	Wärtsilä FlywhR33
Wärtsilä W46	Wärtsilä FlywhR34
Wärtsilä W46F L	Wärtsilä FlywhR35

### **YANMAR Engine Types**

YANMAR 6EY17	YANMAR 6N21 ...
YANMAR 6EY22 ...	YANMAR 6AYM-WST
YANMAR 6EY26	YANMAR 12AYM-WET

**Further engine types and engine manufacturers are available on request.**