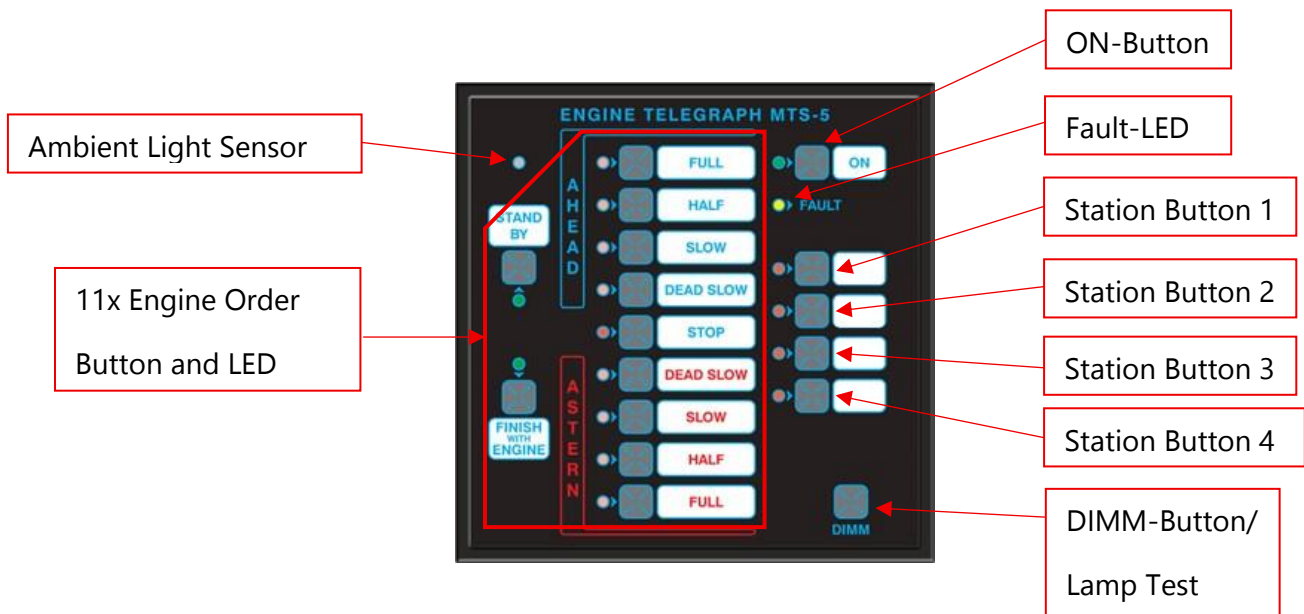




On-Button:

Switching off the machine telegraphs, only functions at master

Fault-LED:

Blinking LED -> Errors in communication between machine telegraphs

Permanent LED -> Internal error or faulty power supply

Station Button ...:

At Master (Sub-Master); for selecting/deselecting the substations for communication

At substations; to acknowledge selection

Station LED:

When a station is selected, it flashes until it has been confirmed by the selected station.

DIMM-Button:

Performs a lamp test and changes the brightness of the EL foil and LEDs.

Amb. Light Sensor:

On the circuit board for measuring ambient brightness and automatically adjusting the EL front foil and LED brightness.

Engine Order Button:

At Master (Sub-Master); for selecting/deselecting the engine order
„Standby“ and „Finish with Engine“ can only be selected if „Stop“ or one of the previously mentioned driving modes has been confirmed.

At substation, to confirm requested engine order, if station is selected

Engine Order LED:

When an engine order is selected, it flashes until it has been confirmed by all selected stations.

Attention! At initial commissioning the system always enters configuration mode!

Function sequence:

The system can be started using the ON button on the master. The devices start up, the internal buzzers sound, and the standby LED flashes. The master can confirm this by pressing the standby button. This switches off all internal buzzers and the standby LED lights up continuously. The system is ready for operation.

Pressing a station button selects that station. The LED next to the station button flashes and the engine order LED starts flashing, the internal buzzer and the station's alarm relay activate. When the selected station confirms the selection by pressing its own station button, the station LED lights up continuously. The selected station must also confirm the engine order by pressing the button. The internal buzzer switches off and the alarm relay drops out. Once all stations have confirmed the engine order, the engine order LED lights up continuously. Pressing the station button on the master again deselects the station. If there is a sub-master in the system, the master can transfer commands to the sub-master. To do this, the master must deselect itself by pressing its own station button 1. The alarm sounds at the sub-master, which must confirm the transfer by pressing its own station button. The sub-master can now request stations and engine orders in the same way as the master. If the master wants to cancel the command, it must press its own station button 1 again to deselect the sub-master and take over the command.

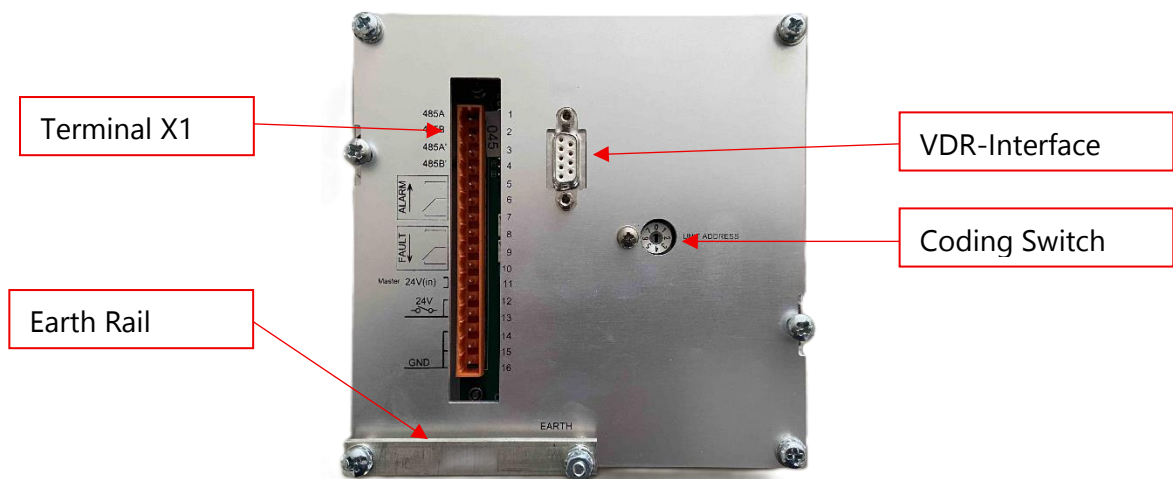
When the system starts up, the master checks all participants. If the system has changed or there is a deviation, the system switches to configuration mode. The "Standby" and "Finish with Engine" LEDs flash. All participants found are displayed on the station buttons:

Permanent LED -> Master

Blinking 1 Hz -> Slave;

Blinking 2 Hz -> Sub-Master

The configuration can be accepted and saved by pressing the "Standby" and "Finish with Engine" buttons on the master simultaneously for two seconds. The configuration mode can also be reactivated using the same key combination.

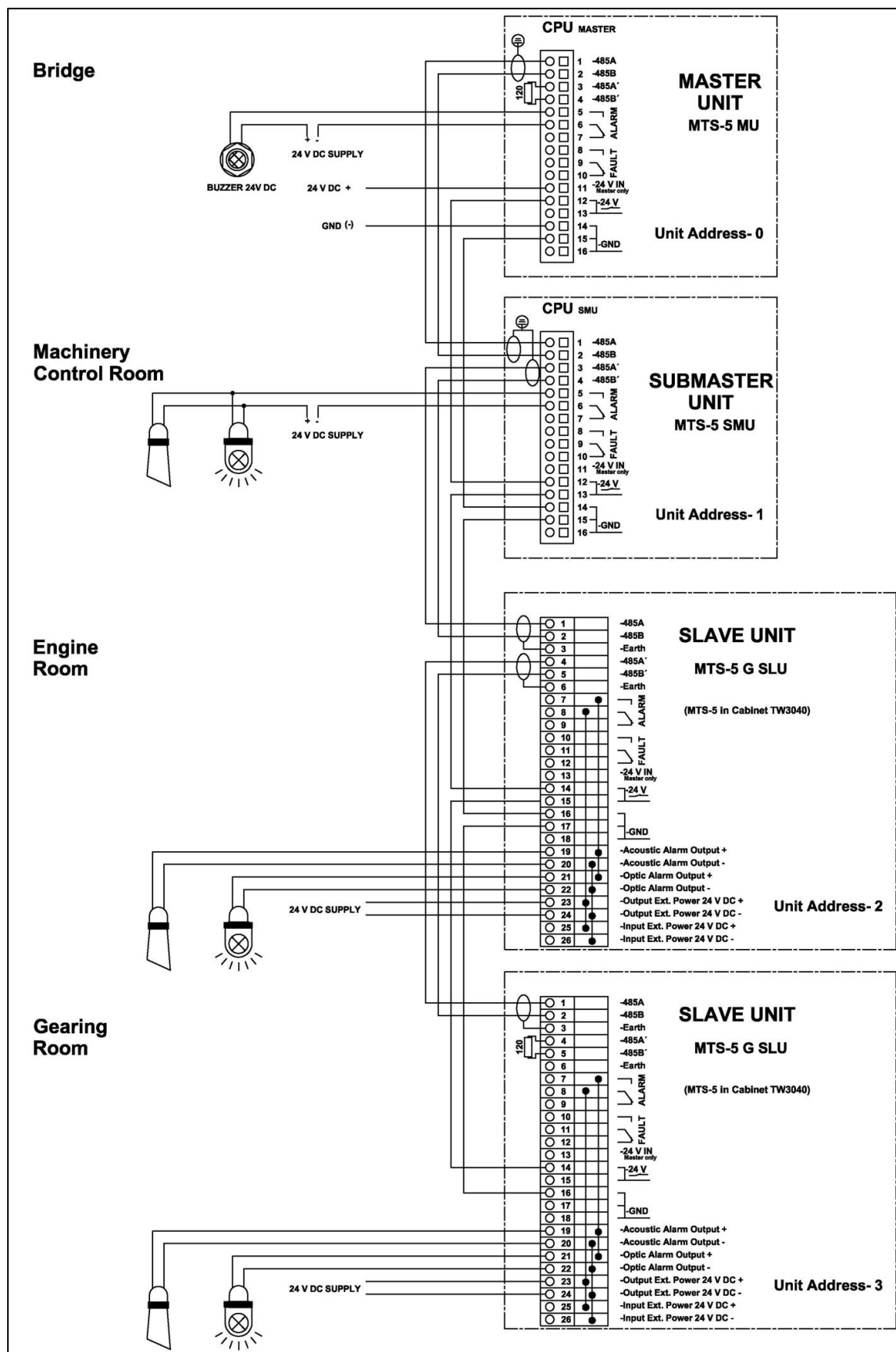


Terminal X1:

- Pin 1-4: RS485 connection for internal bus. The first and last devices in the string must be terminated with a 120Ω resistor.
- Pin 5-7: Alarm-Relay
- Pin 8-10: Fault-Relay
- Pin 11-16: 24VDC power supply

MTS-5/4-V3...

Quick Guide



Coding Switch:

The coding switch on the rear of the machine telegraph determines which function the machine telegraph performs. For each system, each address and each station button assignment, except for "5" (display), may only be set once. At least one master must be included in the system.

Coding-value	Station Button Assignment	Function	Erläuterung
0	1	Master (Fixed Propeller)	Master of fixed propeller systems
1	2	Sub-Master	Control can be transferred from the master
2	3	Slave	Slave on station button 3. If only a two-system (master-slave) is available for machine telegraphs without station buttons, then this slave must be selected. .
3	4	Slave	Slave on station button 4
4	2	Slave	Slave on station button 2. Select this slave if there are more than two devices in a system and no sub-master is present.
5	-	Display	Only display, no function
6	-	-	-
7	1	Master (Pitch Propeller)	Master of pitch propeller systems

VDR-Interface:

Each telegraph station of the MTS-5 emergency engine telegraph system is equipped with a 9-pole D-Sub socket connector "VDR" as a communication output to a Voyage Data Recorder (VDR).

All relevant events within the MTS-5 system are recorded by the MASTER unit and globally transmitted as a message to all connected telegraph stations.

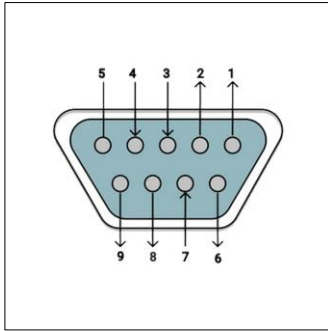


Note!

It is recommended to realize the connection to the VDR system from MASTER station. On demand, the connection can also be carried out from each other telegraph station of the MTS-5 system.

Configuration of serial interface to VDR:

Interface	RS485/RS422
Bit rate	19200 Baud
Data Bits	8
Parity	no
Stop Bits	1
Handshake	no



9-pole D-Sub socket, VDR-output MTS-5

in configuration of 9-pole D-Sub socket, VDR-output:

1	VDR RS485 „A“	6	VDR RS485 „B“
2	-	7	-
3	-	8	-
4	-	9	-
5	-		

The event messages are transmitted in following format:

\$ERTXT, 0000, Command, X*P1P2<CR> <LF>

\$ER	Engine room monitoring system
TXT	Text transmission
0000	Message number, 4 digits
Befehl	see table
X	Code value station, see table
P1P2	Check sum, 2 Byte
<CR>	Carriage Return
<LF>	Line Feed

The code value „X“ indicates the appropriate telegraph station of the message:

0	MASTER	
1	SUBMASTER	function as receiver
2	SLAVE (station button 3)	
3	SLAVE (station button 4)	
4	SLAVE (station button 2)	
5	SUBMASTER	function as transmitter

MTS-5/4-V3...

Quick Guide

„Command“ presents the clear text of the event message of appropriate telegraph station:

MTS Fix Propeller (FP)	MTS Pitch Propeller (PP)	Remark
System On	System On	MTS-System switched on
System Off	System Off	MTS-System switched off
SUBMASTER active	SUBMASTER active	Selection SUBMASTER as Transmitter
SUBMASTER deactive	SUBMASTER deactive	Selection MASTER as Transmitter
Station 2	Station 2	Station of Station Button 2 selected as Receiver
Not Station 2	Not Station 2	Station of Station Button 2 deleted as Receiver
Station 3	Station 3	Station of Station Button 3 selected as Receiver
Not Station 3	Not Station 3	Station of Station Button 3 deleted as Receiver
Station 4	Station 4	Station of Station Button 4 selected as Receiver
Not Station 4	Not Station 4	Station of Station Button 4 deleted as Receiver
Standby	Start Engine	Engine Standby (FP) resp. Start Engine (PP)
Stop	Zero Pitch	Engine Stop (FP) resp. Zero Pitch (PP)
Ahead Dead Slow	Ahead Dead Slow	Dead Slow Ahead
Ahead Slow	Ahead Slow	Slow Ahead
Ahead Half	Ahead Half	Half Ahead
Ahead Full	Ahead Full	Full Ahead
Astern Dead Slow	Astern Dead Slow	Dead Slow Astern
Astern Slow	Astern Slow	Slow Astern
Astern Half	Astern Half	Half Astern
Astern Full	Astern Full	Full Astern
Finish with Engine	Stop Engine	Engine operation finished (FP) resp. stop engine (PP)
Communication Error x	Communication Error x	Missing communication of MASTER with other stations (x = unit address of station where communication is missing)