

SYSTEM INTEGRATION FOR CONTROL SYSTEMS TOWARDS UNMANNED SURFACE VESSELS (USV) AND AUTONOMOUS SURFACE VESSELS (ASV)

Subject to change without prior notice TTP6340 REV. A 07.01.2019

CONTROL SYSTEMS

The Tranberg range of control systems are all prepared for remote control and monitoring. Most systems include the gateway functionality as standard, while two systems require an additional module to be added. All interfaces have a long track record of use for maritime and/or oil and gas applications, with several leading bridge suppliers as integrators.

The listing below shows all systems and available protocols, and reference documents for further information.

LIST OF CONTROL SYSTEMS

| System | Description | Standard Interface | Required Gateway Module Part No | Optional Interface | Approval | Reference document |
|----------|---|---------------------------------|---------------------------------|--|---------------------------|--------------------------------------|
| TEF 1070 | Winterization Control Panels | Modbus RTU RS-485 | | | PLC is DNV-GL approved | TUM6345 (RS-485) TUM6346 (RS-422) |
| TEF 2650 | Commander Searchlights | Proprietary NMEA-0183 on RS-422 | Gateway P/N 2618100018 | Profinet or Modbus with PLC as protocol converter | No requirement | TUM6269 (standard interface) |
| TEF 4500 | Commander Utility | Proprietary NMEA-0183 on RS-422 | Gateway P/N 4500800 | | No requirement | TUM2482 (standard interface) |
| TEF 4600 | Helideck Lights Control System | Modbus TCP/IP | | Modbus RS-485 w/ serial module Modbus RS-422 w/ serial module | PLC is DNV-GL approved | |
| TEF 4900 | Commander Navigation and Signal Lights Controller | Proprietary NMEA-0183 on RS-422 | | | System approval by DNV-GL | TUM2481 (standard interface) |
| TEF 9980 | Status Light Standalone Control System | Modbus TCP/IP | | | PLC is DNV-GL approved | |