

TRUSTED WORLD WIDE



UPGRADE AND RETROFIT FOR
THRUSTER CONTROL SYSTEMS

BRUNVOLL

PRECISION IS OUR PASSION

UPGRADE AND RETROFIT ALTERNATIVES FOR CONTROL SYSTEMS

To secure a full life cycle of our products, Brunvoll provides upgrade and retrofit alternatives for our control systems. The alternatives span from low impact retrofit due to end of life for spare parts to full upgrade with new operational functionality.

There are three basic upgrade alternatives

1. Saia PCD4/2 to Saia PCD3 conversion kit
- Replacement of PLC only
2. Control System upgrade – Saia PCD 3 PLC
- New control system with some functionality upgrade
3. Control System upgrade – BruCon 4
- New control system with latest Brunvoll BruCon technology
- Advanced functional upgrades available

1. Saia PCD4/2 to Saia PCD3 conversion kit

The conversion kit offers a replacement of the existing PCD 2 or PCD4 with only a very small modification of the control system. The replacement unit will fit the existing control cabinet and can be performed by the vessel crew.

The existing obsolete PCD4 or PCD2 PLS are replaced by a PCD3 PLC kit. The replacement is done without any impact to the rest of the control system. Cabinets, wiring, cabling, panels and sensors does not require replacement.

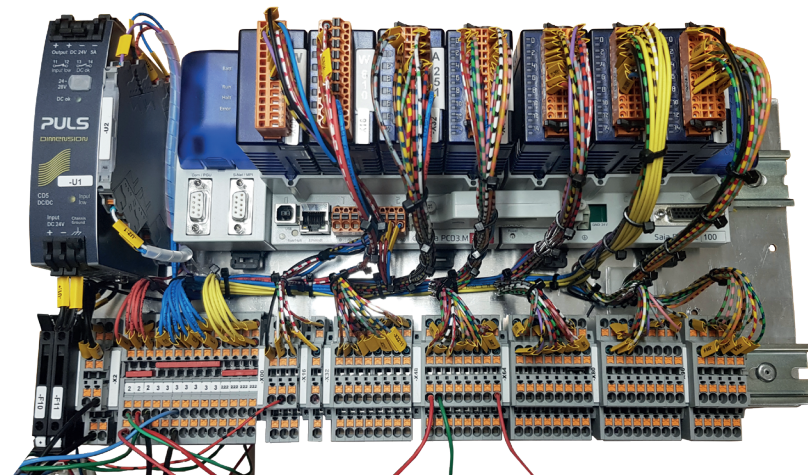
The new PLC offers no new functionality and operation of the system remains unchanged, but the PLC software includes a new and improved software. The upgrade does not require any modification of the pitch feedback system.

The conversion kit is on stock at Brunvoll for fast delivery.



«Xanthia»
Saia PCD4/2 to Saia PCD3 conversion kit

PCD3 Conversion kit



2. Control System upgrade – Saia PCD 3 PLC

All cabinets replaced by new cabinets of same size as old with new Saia PCD3 PLC based control system. New cabinets are equipped with touch screens for alarms/status/operation/configuration.

Pitch feedback is upgraded to a more accurate encoder type (2x4-20mA).

If ship cables are in good condition they can be re-used and no need for new cabling. All connections are arranged to fit existing cables/wiring/terminal details.

The bridge panels are upgraded, all internal signal handling according to 4-20mA and may be arranged according to original dimensions (cut-out). The new panels are equipped with a new lever type and new indicators which may be of combined type for indication of both thrust/load (Deif XDi). Push buttons for operation, lamps with LED for indication.

Touch screen for alarms/monitoring in main panel or ECR (Will require extra cabling) as well as motorized levers may be supplied as options.

Size of panel, type of indicator, type of lever and layout for push buttons rely on customization/arrangements found necessary for each installation.

Control Cabinets for each thruster on bridge will be arranged with same size as original cabinets.

600x600x200 for tunnel thrusters, 600x800x250 for azimuth thrusters.



Typical new thruster panel. May be arranged to fit existing cut-out on consoles.



«Putford Terminator»
Control System upgrade
– Saia PCD 3 PLC

3. Control System upgrade – BruCon 4

Upgrade the control system to the latest Brunvoll control system. BruCon 4 is a redundant control system and standard for new projects delivered by Brunvoll.

Installing a BruCon 4 system enables options such as Dynamic Position, Condition Monitoring Systems, ECR panel for monitoring and motorized levers.

BruCon 4 utilize local PLC based control systems on each thruster, connected by bus and hardwiring to IPCs for bridge equipment. Bridge equipment is based on touch screen panels and latest generation Brunvoll levers.

System will be fully tested with all components before delivery.

The upgrade is more comprehensive than the first two options and requires more modification. New cables and bus connections are required between the thruster rooms and the bridge (hardwired cables, fiber and ethernet) as well as between bridge cabinets and the operating panels in the consoles (hardwired cables, ethernet and Can-bus). The pitch feedback will be upgraded to a 4-20mA unit and new functionality is required for the HPU starter.



Before Center console PCD4

After center console BruCon-4



«The World»
Control System upgrade
– BruCon 4

End Of Life for Saia PCD2 and PCD4 PLC spare parts

Brunvoll have used Saia PCD4 and PCD2 in their control system since 1990 and up to around 2009. It was then replaced by Saia PCD3.

PCD4 and PCD2 PLC units have been obsoleted from Saia for some time, but Brunvoll has maintained a spares stock. The stock is now at a level where Brunvoll cannot guarantee future availability for PCD2 or PCD4 spare parts.

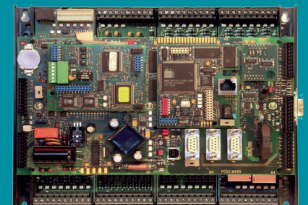
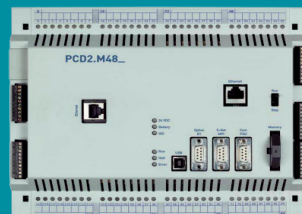
We are now in a position that a replacement of the control system will be the only option.

Brunvoll recommend upgrading the control system to avoid future repair issues.

There is no known EOL notification from Saia on PCD3.



Saia PCD4 control unit



Saia PCD2 control unit

BRUNVOLL

BRUNVOLL AS
Eikremsvingen 2c
NO-6422 Molde,
Norway

Phone: +47 71 21 96 00
e-mail: service@brunvoll.no

www.brunvoll.no

BRUNVOLL VOLDAS
Hamnegata 24
NO-6100 Volda,
Norway

Phone: +47 70059000
e-mail: service.volda@brunvoll.no

www.brunvoll.no

BRUNVOLL MAR-EL AS
Storvegen 48
NO-3880 Dalen,
Norway

Phone: +47 35075800
e-mail: service.mar-el@brunvoll.no

www.brunvoll.no