

Type Approval Certificate

This is to certify that the undernoted product(s) has/have been tested with satisfactory results in accordance with the relevant requirements of the Lloyd's Register Type Approval System.

Manufacturer	Samson AG
Address	Weismüllerstraße 3, Frankfurt am Main, 60314, Germany
Place of Production	Samson AG Weismüllerstraße 3, Frankfurt am Main, 60314, Germany
Place of Production	SAMSON REGULATION S.A.S 1-3 Rue Jean Corona, Vaulx-en-Velin, 69120, France
Type	VALVE ACCESSORIES
Description	Electric and pneumatic valve attachments Reversing Amplifier 3710 Positioner TROVIS 3730-3 Pneumatic Volume Booster 3755 Limit Switch 4747 For detailed description, pls. refer to appendix.
Trade Name	3710, TROVIS 3730-3, 3755, 4747
Application	Marine applications for use in environmental categories ENV1, ENV2, ENV3, ENV4 and ENV5 as defined in Lloyd's Register's Type Approval System, Test Specification Number 1 – 2019.

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Specified Standard	Manufacturer's specification
Ratings	Supply pressure: Up to 10 bar Ambient temperature: -25 °C to +80 °C Enclosure protection: IP66 For detailed ratings, pls. refer to appendix.
Other Conditions	Specific Conditions of Use as stated in applicable Ex-certificates and the conditions of the LR Ship Rules & Regulations of Classification of Ships Part 6, Chapter 2 shall be observed when installed in hazardous areas. The Ex-certification does not form part of this certificate. Where valves are required to be capable of being closed remotely in the event of fire, actuators with stainless steel housing are to be used. The valve itself is excluded from this type approval.

This certificate is not valid for equipment, the design, ratings or operating parameters of which have been varied from the specimen tested. The manufacturer should notify Lloyd's Register EMEA of any modification or changes to the equipment in order to obtain a valid Certificate.

The Design Appraisal Document No. HTS/ETS 40122-20/MK/TW and its supplementary Type Approval Terms and Conditions form part of this Certificate.

Appendix

DESCRIPTION

Electric and pneumatic valve attachments

Reversing Amplifier 3710: The reversing amplifier allows double-acting pneumatic actuators to be operated using single-acting positioners or limit switches. The positioner creates an output signal pressure Y1, to which the air pressure Y2 is added. The reversing amplifier uses the supply pressure Z as auxiliary power.

Positioner TROVIS 3730-3: The electro pneumatic positioner is mounted on pneumatic control valves and is used to assign the valve position (controlled variable x) to the control signal (set point w).

Pneumatic Volume Booster 3755: The Pneumatic Volume Booster is used together with positioners to increase the positioning speed of pneumatic actuators

Limit Switch 4747: The limit switch is intended for the attachment to linear or rotary valves. It is equipped either with a maximum of two inductive proximity switches or two electric micro switches and gives a limit signal when a set limit value is exceeded or reached.

RATINGS

Reversing Amplifier 3710: - Permissible supply pressure: Up to 6 bar
 - Permissible ambient temperature: -25 °C to +80 °C
 - Degree of protection: IP66

Positioner TROVIS 3730-3: - Firmware version: 2.00.xx
 - Voltage Current Input: 4 to 20 mA DC
 - Supply air: 1.4 to 7 bar
 - Temperature rating: -25 °C to +80 °C (all versions)
 - Degree of protection: IP 66
 - Certified Safe Equipment
 TROVIS 3730-3-110... :
 II 2G Ex ia IIC T4/T6 Gb and
 II 2D Ex ia IIIC T85 °C Db
 TROVIS 3730-3-510... :
 II 2D Ex tb IIIC T85 °C Db
 TROVIS 3730-3-810... :
 II 3G Ex nA IIC T4/T6 Gc and
 II 2D Ex tb IIIC T85 °C Db
 TROVIS 3730-3-850... :
 II 3G Ex nA IIC T4/T6 Gc

RATINGS (continued)

Pneumatic Volume Booster 3755:

- Supply pressure: Max. up to 10 bar
- Standard temperature: -25 °C to +80 °C
- Degree of protection provided by enclosure: IP 66
(Exhaust side facing downward or to the side)

Limit Switch 4747:

- Standard temperature: -25 °C to +80 °C
- Degree of protection provided by enclosure: IP 66
- Certified Safe Equipment:
 - 4747-110... :
 - II 2 G Ex ia IIC T6 Gb and
 - II 2 D Ex ia IIIC T85 °C Db IP66 and
 - II 2 D Ex tb IIIC T85 °C Db IP66
 - 4747-810... :
 - II 3 G Ex ic IIC T6 Gc and
 - II 3 G Ex nAc II T6 Gc and
 - II 3 D Ex tc IIIC T85 °C Dc IP66