

TYPE APPROVAL CERTIFICATE

This is to certify:**That the Flexible Hoses of Non-Metallic Material with Permanently Fitted Couplings**with type designation(s)
H101, H201

Issued to

Danfoss Power Solutions II, LLC
Van Wert, OH, USA

is found to comply with

DNV rules for classification – Ships Pt.4 Ch.6 Piping systems**DNV class programme DNV-CP-0183 – Type approval – Flexible non-metallic hoses****Application :****Products approved by this certificate are accepted for installation on all vessels classed by DNV.****Temperature range:** -40°C up to +100°C**Max. working press.:** 28 bar / 400 psi**Sizes:** DN 6 up to DN19Issued at **Hamburg** on **2023-05-15**This Certificate is valid until **2028-05-14**.DNV local unit: **Houston, Approval CMC**Approval Engineer: **Christian Kaemmer**for **DNV**

Sven Klinger
Head of Section

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid.
The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV AS, its parent companies and their subsidiaries as well as their officers, directors and employees ("DNV") arising from or in connection with the services rendered for the purpose of the issuance of this document or reliance thereon, whether in contract or in tort (including negligence), shall be limited to direct losses and under any circumstance be limited to 300,000 USD.



Product description

H101-series: Weatherhead by Danfoss air and general purpose hose with synthetic rubber tube, single textile braid reinforcement, synthetic rubber cover using 1GA permanent crimp fitting.

H201 series: Boston by Danfoss air and general purpose hose with synthetic rubber tube, single textile braid reinforcement, synthetic rubber cover using 1GA type permanent crimp fitting.

Fire resistant according to ISO 15540 in combination with fire sleeve 624 at proof pressure of 41bar

Materials:

Cover: Synthetic rubber
Reinforcement: Single textile braid reinforcement
Tube: Synthetic rubber
Coupling: 1GA type permanent crimp; carbon steel
Fire sleeve: 624, single layer braided fiberglass tubing impregnated and overlaid with a petroleum resistant silicone cover

Size and pressure range:

Part Number	DN	Hose I.D.		Maximum working pressure	
		mm	inch	[bar]	[psi]
H10104	6	6.4	0.25	28	400
H10106	10	9.5	0.38	28	400
H10108	12	12.7	0.50	28	400
H10110	16	15.9	0.62	24	350
H10112	19	19.0	0.75	24	350

Part Number	DN	Hose I.D.		Maximum working pressure	
		mm	inch	[bar]	[psi]
H20104	6	6.4	0.25	20.7	300
H20106	10	9.5	0.38	20.7	300
H20108	12	12.7	0.50	20.7	300
H20110	16	15.9	0.62	20.7	300
H20112	19	19.0	0.75	20.7	300

Production places

- Danfoss Power Solutions II LLC, 1830 Highway 201 South Spur, Mountain Home, Arkansas, USA.
- Danfoss Power Solutions II LLC, 1225 W. Main Street, Van Wert, Ohio, USA.

Responsibility

Danfoss Power Solutions II LLC, Van Wert takes the responsibility that the design and production of the hoses, hose end fittings and manufacturing of hose assemblies are in compliance with Rules, Standards and/or Regulations listed on page 1 of this certificate.

Application/Limitation

Hose assemblies covered by this type approval certificate are approved for air and water.
Approved solely for permanent crimped fittings.

Flexible hoses are only to be used in short lengths where it is necessary due to vibrations or flexible mounting of the machinery. The hoses shall not replace/be used where permanent piping is possible/required.

Installation

The hose assemblies must only be fitted in places where they are always accessible. Flexible hoses of these types are not to be used on boiler fronts. The hoses are to be mounted in accordance with the manufacturer's instructions. It must be possible to shut all flexible hoses off from the system.

For temperatures below 0°C the supplementary material requirements acc. to DNV-Rules "Ships /Metallic Materials" Part 2 Chapter 2 Section 5 item 4 are to be observed.

Type Approval documentation

Tests carried out

Production testing

All hose assemblies shall be subject to a pressure test at 1.5 times the maximum working pressure and shall be delivered with the pressure test report with reference to the type approval certificate.

Marking of product

For traceability to this type approval, each hose assembly is to be marked with:

Marking	Example
Manufacturer's name	DANFOSS
Type, Name	H20104
Maximum working pressure M.A.W.P.	20.7 / 300psi bar
Date of manufacture (YYYY/MM/DD)	2023/04/14 Made in USA

Periodical assessment

For retention of the Type Approval, a DNV Surveyor shall perform periodical assessment to verify that the conditions for the Type Approval are complied with. Refer to the Class Programme DNV-CP-0338, Sec.4.

To check the validity of this certificate, please look it up in <https://approvalfinder.dnv.com>