

Update notice

ACS800LC liquid-cooled industrial units and drives coolant change to Antifrogen® L.

Code: 3AXD50000371952 Rev A

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Contents:

This notice concerns industrial ACS800 Liquid-cooled multidrive Units Hardware manuals, ACS800 Liquid-cooled Single Drive cabinet manuals, ACS800 Liquid Cooling Unit User's Manual and their respective translations.

| Code | Revision | Language | |
|----------------|----------|----------|----|
| 3AFE68715474 | C | English | EN |
| 3AFE68843723 | B | German | DE |
| 3AFE68843731 | B | Finnish | FI |
| 3AFE68843740 | B | Italian | IT |
| 3AFE68843758 | B | Swedish | SV |
| 3AFE68822092 | B | English | EN |
| 3AFE68912148 | B | German | DE |
| 3AFE68912156 | B | Finnish | FI |
| 3AFE68912164 | B | Italian | IT |
| 3AFE68912172 | B | Swedish | SV |
| 3AFE68715491 | C | English | EN |
| 3AFE68987784 | C | German | DE |
| 3AFE68987792 | C | Finnish | FI |
| 3AFE68987806 | C | Italian | IT |
| 3AFE68987814 | C | Swedish | SV |
| 3AFE68835861 | D | English | EN |
| 3AUA0000040346 | D | German | DE |
| 3AUA0000040370 | D | Finnish | FI |
| 3AUA0000040368 | D | Italian | IT |
| 3AFE68621101 | E | English | EN |
| 3AFE68829887 | E | German | DE |
| 3AFE68829909 | E | Finnish | FI |
| 3AFE68829917 | E | Italian | IT |
| 3AFE68829925 | E | Swedish | SV |
| 3AFE68620902 | E | English | EN |
| 3AFE68820821 | E | German | DE |
| 3AFE68820847 | E | Finnish | FI |
| 3AFE68820855 | E | Italian | IT |
| 3AFE68820863 | E | Swedish | SV |
| 3AUA0000065339 | B | English | EN |
| 3AUA0000065342 | B | English | EN |

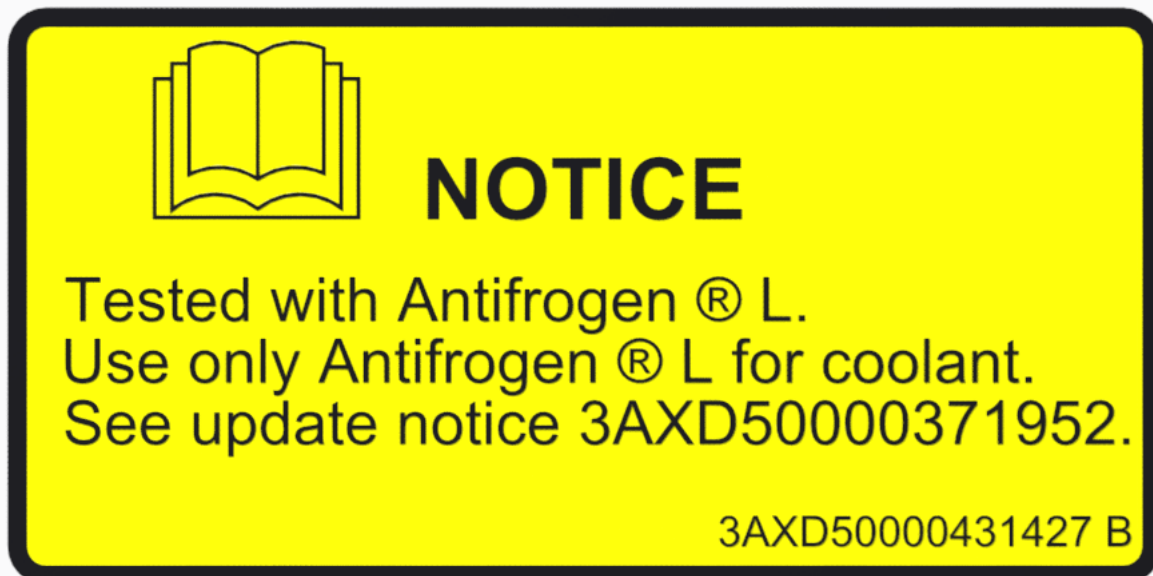
Scope

This change concerns ACS800 Liquid-cooled multidrive Units (ACS800-107LC, -207LC, -307LC, -507LC, -607LC, -1107LC, -1207LC), ACS800-1007LC Liquid Cooling Unit, ACS800-07LC Drives, ACS800-17LC Drives and ACS800-37LC Drives manufactured in **Finland or Estonia**.

New units and drives are tested with Antifrogen® L. Antifrogen® L is a ready-made propylene glycol based coolant mixture with corrosion inhibitors included. Proper selection of Antifrogen® L and Adjustment of the Main Choke Valve is described in the document Usage of Antifrogen® L in ACS800LC Drives (3AXD10000511935).

New units and drives which are tested with Antifrogen® L must be operated with Antifrogen® L to prevent corrosion in the system. If usage of the old propylene glycol and corrosion inhibitor Cortec VpCl-649 in new Antifrogen® L tested units and drives is wanted system must be flushed before as Antifrogen® L remains in the system after testing. Flushing procedure described in the document Usage of Antifrogen® L in ACS800LC Drives (3AXD10000511935) must be followed. If new units or drives tested with Antifrogen® L are connected to old ACS800 industrial liquid-cooled units or drives, both systems needs to use same the coolant. Mixing propylene glycol and corrosion inhibitor Cortec VpCl-649 coolant with Antifrogen® L is not allowed.

New units and drives are tested with Antifrogen® L are labelled with information label (3AXD50000431427) below. The label is installed to LCU-cabinet or incoming main pipe of the unit if delivered without LCU-cabinet.



This update notice and Usage of Antifrogen® L in ACS800LC Drives (3AXD10000511935) document are delivered with drive in documentation pocket inside the cabinet door.

Changes to documentation

Replaced Technical data, internal cooling circuit data, Water, Inhibitor, Glycol, Liquid mixture quality, Temperature limits, Pressure limits and Freeze protection and corrosion inhibition chapters to following:

Technical data

Coolant specification

Coolant type

Antifrogen®L (by Clariant International Ltd., www.clariant.com) 25% or 50% water mixture, available from Clariant distributors and ABB Service representatives.

Antifrogen®L 25% mixture is usable in storage temperatures down to -16 °C (3.2 °F). Antifrogen®L 50% mixture is usable in storage temperatures down to -40 °C (-40 °F).

Note that operation below 0 °C (32 °F) is not allowed regardless of the freezing point of the coolant.



WARNING!

The warranty does not cover damage occurring from use of improper coolant.

Temperature limits

Ambient temperature: See the technical data of the drive/unit.

Freeze protection: The freezing point of the coolant is determined by the concentration of heat transfer fluid in the mixture.

The higher the concentration of heat transfer fluid, the higher the viscosity of the coolant. This results in a higher pressure loss in the system.

The nominal current ratings of drive system modules apply to Antifrogen®L / water solution of 25/75 (volume). For derating with other ratios, contact your local ABB representative.

The temperature of the coolant must be controlled according to the tables below.

Minimum coolant inlet temperature: Condensation is not allowed. The minimum coolant temperature to avoid concentration (at an atmospheric pressure of 100 kPa) is shown below as a function of the relative humidity (ϕ) and the ambient temperature (T_{air}).

| $T_{\text{air}}(^{\circ}\text{C})$ | Min. $T_{\text{coolant}}(^{\circ}\text{C})$ | | | | |
|------------------------------------|---|---------------|---------------|---------------|---------------|
| | $\phi = 95\%$ | $\phi = 80\%$ | $\phi = 65\%$ | $\phi = 50\%$ | $\phi = 40\%$ |
| 5 | 4.3 | 1.9 | -0.9 | -4.5 | -7.4 |
| 10 | 9.2 | 6.7 | 3.7 | -0.1 | -3.0 |
| 15 | 14.2 | 11.5 | 8.4 | 4.6 | 1.5 |
| 20 | 19.2 | 16.5 | 13.2 | 9.4 | 6.0 |
| 25 | 24.1 | 21.4 | 17.9 | 13.8 | 10.5 |
| 30 | 29.1 | 26.2 | 22.7 | 18.4 | 15.0 |
| 35 | 34.1 | 31.1 | 27.4 | 23.0 | 19.4 |
| 40 | 39.0 | 35.9 | 32.2 | 27.6 | 23.8 |
| 45 | 44.0 | 40.8 | 36.8 | 32.1 | 28.2 |
| 50 | 49.0 | 45.6 | 41.6 | 36.7 | 32.8 |
| 55 | 53.9 | 50.4 | 46.3 | 42.2 | 37.1 |

= Not allowed as standard but the coolant temperature must be 5 °C or above. Consult an ABB representative if operation below coolant temperature 5 °C is required.

Example: At an air temperature of 45 °C and relative humidity of 65% the coolant temperature may not be below +36.8 °C.

Maximum coolant inlet temperature for ACS800 liquid cooled drive

Drive with the optional cooling unit (ACS800-1007LC):

- 38 °C when the drive output capacity is not derated
- 38 °C...45 °C when the drive output capacity is derated by 1% per 1 °C temperature increase.

Drive without the optional liquid cooling unit (ACS800-1007LC):

- 42 °C when the drive output capacity is not derated
- 42 °C...48 °C when the drive output capacity is not derated by 1% per 1 °C temperature increase.

Maximum temperature rise: 13 °C, depends on the mass flow.

Pressure limits

Base pressure: 100...150 kPa (recommended): 200 kPa (maximum). "Base pressure" denotes the pressure of the system compared with the atmospheric pressure when the cooling circuit is filled with coolant.

Air counterpressure in the expansion tank: 40 kPa

Design pressure (Ps): 600 kPa

Nominal pressure difference (between main in/out lines): 120 kPa with 25(75% (volume) coolant solution, 150 kPa with 50/50% coolant solution.

Maximum pressure difference (between main in/out lines): 200 kPa

