



HVAC users participated in developing the user interface of VLT® HVAC Drive

Traditionally, product development involved users in the final stages to test their reaction. In the trace of the “human factor”-focus in US a decade ago, the concept “User Centred Design” was adapted in both US and Europe. In Danfoss, Jacob Buur introduced the concept eight years ago and Danfoss successively introduced the concept in product development. The concept means that users are not only testing, but also contributing to the process from the very beginning. The result is an extremely user friendly and intuitive human-machine interface – awarded the highly recognized iF design award 2002.

The first step in user centred design is to recognise the environment the product is going to be used in and what kind of time, space and tools are used. For this purpose, design engineers spend a number of days “in the shoes” of the user – performing their tasks, using their tools, learning their terms, noting their conditions. The specially trained “user-centered design team” documented and analysed the most important daily routines mounting, commissioning, operating and servicing from video recordings and came up with a number of very innovative, creative but perhaps not very realistic operation and design strategies.

Users were currently involved in the development of a number of these product ideas and in a process where features were transferred or combined across different development lines.

Specific improvements

Involvement of users has several specific implementations in the new VLT® HVAC Drive. One is the physical layout of the control panel where habits from the use of mobile phones have been adopted. Another is the graphic display having fewer codes and more clear text – more graphs moving and fewer rows of numbers.

Graphical display

A major improvement is the graphical display, allowing to show:

- o International letters and signs
- o Bars and graphs

27 languages

The control panel allows you to choose among 27 language to communicate with the machine

Other benefits

- o Removable during operation
- o Up- and download functionality
- o IP65 rating when mounted in a panel door
- o Numerical version also available

Illumination

- o Important buttons are now illuminated when active

Menu structure

- o Based on the well-known matrix system in today’s VLT® drives
- o Easy short cut for the experienced user
- o Edit and operate in different set-ups simultaneously

HVAC dedicated menus

- o A Danfoss defined Quick Menu
- o A Personal defined Quick Menu



- o A Changes Made Menu lists the parameters unique for your application
- o A Function Setup menu provides quick and easy setup for specific applications
- o A Logging menu gives access to operation history

New buttons

- o Info ("on board manual")
- o Cancel ("undo")
- o Alarm log (quick access)