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Xtra Combinations

Xtra Combinations from Moeller offers a range of products and services, enabling the best possible combination options for switching, protection and control in power distribution and automation.

Using Xtra Combinations enables you to find more efficient solutions for your tasks while optimising the economic viability of your machines and systems.

It provides:

- flexibility and simplicity
- great system availability
- the highest level of safety

All the products can be easily combined with one another mechanically, electrically and digitally, enabling you to arrive at flexible and stylish solutions tailored to your application – quickly, efficiently and cost-effectively.

The products are proven and of such excellent quality that they ensure a high level of operational continuity, allowing you to achieve optimum safety for your personnel, machinery, installations and buildings.

Thanks to our state-of-the-art logistics operation, our comprehensive dealer network and our highly motivated service personnel in 80 countries around the world, you can count on Moeller and our products every time. Challenge us! We are looking forward to it!

Author:  
Christian Zingg,  
Manager product line automation,  
Moeller GmbH, Bonn

With its new XV400 touch display series, Moeller is offering a scalable solution concept, with all devices of the XV400 Series based on the same hardware platform. A removable CompactFlash card is used to determine the required function of the device – HMI or HMI-PLC. This article takes a closer look at how it works.
Flexible is the really outstanding feature of Moeller’s new XV400 touch display series. XV400 devices can either be equipped with infra-red or resistive touch technology with the 5.7" STN color 10.4" or 12.1" TFT color displays. The infra-red touch displays come with a scratch-proof safety glass panel. The basic units are provided with a dc-CPU (32-bit, 400-MHz) as well as integrated RS232, USB, Ethernet 10/100 Mbit and CAN interfaces.

CF cards for flexibility

On all XV400 devices Moeller offers both an HMI or HMI-PLC version, depending on the easy to fit CompactFlash card selected. The Galileo graphical configurator or the EPAM touch display device textual description of the visualization application are used to create the HMI solution, for which XSoft-EPAM is a Microsoft Excel spreadsheet. Together with the DCDe/LS-board XSoft Professional, this creates two powerful versions of a multitasking capable HMI-PLC compliant with IEC 61131-3. This and the CompactFlash memory size of 32 MB to 512 MB ensure that XV400 devices are available for a wide range of uses: whether as an operator unit, HMI-PLC solution, panel with a gateway function or as a connection to the control level via Ethernet.

Open interfaces

The XV400 devices feature one (5.7” device) or two (10.6” and 12.1” device) communication slots. Communication boards such as the multi-protocol board with MPI, Profibus-DP master or slave, DeviceNet and others support a wide range of communication and networking options. The 10/100 Mbit Ethernet interface integrated as standard makes it possible to set up a communication network via UDP to virtually all Ethernet systems, and function blocks are provided in XSoft Professional for this purpose. Data exchange to the devices of other suppliers with the SI CoDeSys runtime system and an Ethernet interface can also be implemented without any problem. In this case the standard Ethernet TCP/IP and the Synchronous driver integrated in SI are used with the physical connection. Only a symbol file has to be generated in the third-party device that contains the global visualization variables. The symbol file is then simply loaded in the visualization system and the required variables just have to be called.

Three software packages

Moeller offers two software packages for exclusively HMI solutions: Galileo or XSoft-EPAM. Galileo is a user-friendly Windows-based design software for graphical visualization systems. The Galileo software features powerful script functions that control commands or operations. This enables, for example, mathematical calculations, screen changes or data interrogations for special functions to be carried out, thus relieving the burden on the PLC. Projects that have already been created can be tested with the Galileo Project Inspector (GPI) without having to be transferred to the XV400 touch panel. This ensures that test phases are considerably shorter and reduces the number of errors. The entire user interface can be tested without any problem, as well as limit value interrogations, colour changes for bar graphs, switching states and trend curves. XSoft-EPAM is an Add-in supplied by Moeller that is integrated into Microsoft Excel. The programmer simply stores the textual description of the visualization application inside the Excel spreadsheet and has unrestricted access to all Excel features. Once screens or objects have been created, they can also be reused with all functions, such as foreign languages, simply with the Copy & Paste function. XSoft-EPAM projects that have been created can be tested on the PC simply by clicking the mouse to start the simulation function. The XSoft Professional programming tool is used for the HMI-PLC function in addition to the visualization. XSoft Professional is a programming tool for the IEC61131-3 compliant PLC. The PLC can either be used in a multitasking capable HMI-PLC. Extensive engineering features and programming languages (IL, ST, FBD, LD, SFC and CFC) are available. XSoft Professional provides a large number of important functions for debugging, testing and commissioning. The PLC application can be tested very quickly and effectively. All these features are available as soon as the programmer has loaded the HMI-PLC in online mode. However, the application can also be tested without the HMI-PLC having to be connected, thanks to the online simulation tool integrated in XSoft Professional. The interaction between Galileo and XSoft Professional or XSoft-EPAM and XSoft Professional is astonishingly straightforward. XSoft Professional generates a symbol file containing the required visualization variables. The programmer then has to call the symbol file in Galileo or XSoft-EPAM and transfer the required variables.

Figure 1: The CompactFlash Card determines the function HMI or HMI-PLC.

Figure 2: The XV400 device series - flexible and scalable for future-oriented solutions.

Figure 3: XSoft-EPAM is designed for creating HMI projects for touch displays and ensures user-friendly parameter assignment.

Figure 4: WEB-EPAM enables new and existing EPAM applications to be converted for remote operator units.
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Figure 2: The XV400 device series - flexible and scalable for future-oriented solutions.

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Free Web, FTP and OPC client server

All XV400 touch display devices are provided with a web browser, FTP server and OPC client/server. This allows large volume data such as recipes to be loaded without any problem from other PC-based systems. Operation data, fault messages or trend curves can be stored in files in the HMI-PLC as well as transferred to other systems via FTP. The OPC server/client technology users can export protocols as well as functions of a multitasking capable HMI-PLC. Extensive networking functionality is provided to other systems via FTP and OPC client/server. The OPC server client technology users can test the system to be operated remotely from any location. Tele-service and remote visualization solutions can therefore be implemented very easily. The FTP server integrated in the XV400 touch displays allows high volume data such as recipes to be loaded without any problem from other PC-based systems. Operation data, fault messages or trend curves can be stored in files in the HMI-PLC as well as transferred to other systems via FTP. The application can also be tested without the HMI-PLC having to be connected, thanks to the online simulation tool integrated in XSoft Professional. The interaction between Galileo and XSoft Professional or XSoft-EPAM and XSoft Professional is astonishingly straightforward. XSoft Professional generates a symbol file containing the required visualization variables. The programmer just has to call the symbol file in Galileo or XSoft-EPAM and transfer the required variables.

Conclusion

The new XV400 touch display devices offer versatile systems on the market. Thanks to the use of an open hardware and software platform, users are provided with innovative application options that were previously only possible with PC-based systems using MS Windows or other operating systems. Operation data, fault messages or trend curves can be stored in files in the HMI-PLC as well as transferred to other systems via FTP. The OPC server/client technology users can export protocols as well as functions of a multitasking capable HMI-PLC. Extensive networking functionality is provided to other systems via FTP and OPC client/server. The OPC server client technology users can test the system to be operated remotely from any location. Tele-service and remote visualization solutions can therefore be implemented very easily. The FTP server integrated in the XV400 touch displays allows high volume data such as recipes to be loaded without any problem from other PC-based systems. Operation data, fault messages or trend curves can be stored in files in the HMI-PLC as well as transferred to other systems via FTP. The application can also be tested without the HMI-PLC having to be connected, thanks to the online simulation tool integrated in XSoft Professional. The interaction between Galileo and XSoft Professional or XSoft-EPAM and XSoft Professional is astonishingly straightforward. XSoft Professional generates a symbol file containing the required visualization variables. The programmer just has to call the symbol file in Galileo or XSoft-EPAM and transfer the required variables.
XV400 Touch Display Devices
HMI or HMI-PLC

Author: Christian Zingg, Manager product line automation, Moeller GmbH, Bonn

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