FEATURES OF FIELD CONTROL STATION HARDWARE

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We have developed a field control station (FCS) for the CENTUM CS 1000, a distributed control system for small- and medium-scale plants. Thus, in contrast to the FCSs of the CENTUM CS distributed control system for large-scale plants, these new FCSs are designed for small- and medium-scale plants. The main objective of their development was to make their architecture the same as the CENTUM CS's and to meet the requirements of the global market. While the CPU card, power supply card, VLnet coupler unit, and nest were newly developed, other components were either adopted from or made to be compatible with the CENTUM CS's in order to achieve the same architecture as the CENTUM CS. For example, the same input/output modules as those of the CENTUM CS are used, as well as a processor with a compatible object-oriented design and the VLnet, which has a logic sequence compatible with the CENTUM CS's Vnet. In order to make the system suitable for the global market, the hardware was made compact, low-priced, highly reliable, and easy-to-maintain as well as compliant to various international standards. The CPU card, power supply card, and VLnet coupler unit can be made dual redundant, and duplex configuration selected for each of these by the user.

INTRODUCTION

The development of the CENTUM CS 1000 distributed control system for small- and medium-scale plants was based on two basic design principles: 1) to have the same architecture as the CENTUM CS and 2) with the objective of becoming a global product. The main objectives for the development of the FCSs were compactness, high reliability and easy maintenance.

FUNCTIONS AND FEATURES OF FCSS

FCS Functions

FCSs are connected to each other and to human interface stations (HISs) and other stations and gateways via VLnet. Communication over the VLnet enables FCS databases to be downloaded and the various settings of an FCS to be set and read from an HIS. It also enables an HIS to be notified of alarms by the FCSs. FCSs are equipped with a number of different input/output (I/O) modules that connect the various analog and digital input/output signals as well as general-purpose communication lines such as RS-232C to the FCS. The signals acquired by the I/O modules are subjected to input processing, control computation, logic operations, and then output processing before they are finally output from the FCS's I/O modules.

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FCS Features

(1) Same Architecture as CENTUM CS

The FCS of the CENTUM CS 1000 has the same architecture as those of the CENTUM CS distributed control system for large-scale plants. As a result, the user can build up a system based on the same architecture for whatever scale of plant in order to best meet the needs of their plant. The compatible system architecture also means that the engineering work required for building up systems, operation, and maintenance where both the CENTUM CS and CENTUM CS 1000 systems are used, is simple due to the commonly used parts and consistent functionality.

The CENTUM CS 1000 achieves the same architecture as the CENTUM CS by utilizing its software and hardware

CR5	CS1	CT5	CX1	EA0	EA1	EA2	EA5	EA7
EA9	EB401	EB402	EB501	EB511	EC0	EC7	ECM	EH0
EH1	EH5	ELB	ELD	EM1	ENC	ENM	EP1	EP3
ER5	ERT	ES1	ESC	ET5	ETBC	ETBP	ETC	EUB
EUD	EX1	EXT	EYB	EYD	KAR	KB2	KB3	KB4
KS1[*4]	KS4	KS5	KV6	LPCKIT	LPH21UK	MHC	MHM	PCD
PFCD	PFCS	PRK71	PS40	PS41	PW301	PW302	PW304	PW401
PW402	PW404	PW405	PW445	PW485	PW501	PW502	PW504	PW601
PW605	PW701	PW702	PW704	PW823	RB301	RB401	RB411	RLB
RLD	SB301	SB302	SB311	SCFAN1	VF311	VF351	YAX101	YAX801