

# Advant Controller 410

The compact, yet competent, process controller



Advant Controller 410 is a compact and cost-effective, yet competent process controller

Advant Controller 410 is a full-function process controller in a minimal hardware configuration. Its wide-ranging control and communication capabilities make it the right choice for medium-sized, but functionally demanding, applications, either standing alone or as part of larger Advant OCS systems.

Advant Controller 410 can do everything you expect from an industrial process controller and, in all likelihood, a good deal more; it can perform logic, sequence positioning and regulatory control, manage data and text and produce reports. It is programmed graphically in AMPL, as are all other controllers in Advant OCS with Master software. The already rich library of program elements/function blocks can easily be augmented with user-developed blocks created in AMPL.

## **I/O for every task**

The range of process I/O modules is complete, covering general-purpose analog and digital inputs and outputs at different ratings, as well as Pt100, thermocouple and pulse inputs. Specialized interfaces are provided for accurate digital positioning, switchgear integration, variable-speed motor control, telecontrol and communication with other makes of programmable controllers.

# Lots of process control power



Advant Controller 410 I/O rack. Up to 15 S100 I/O modules can be housed in the rack. Installation in a swing-out frame provides easy access also to the rear side of the rack for installation and maintenance purposes.

There is space in the rack for up to 15 S100 I/O modules, providing capacity for up to 480 process signals, depending on types. The overall I/O capacity, however, can be expanded to as many as 2,500, using distributed I/O stations, communicating with the parent controller over a suitable field bus, e.g. Advant Fieldbus 100.

## The communicative controller

Advant Controller 410 supports a wide range of communication protocols, making it easy to design the optimal control system architecture for every application. These protocols include:

- MasterBus 300/300E for communication with other member stations of Advant OCS at the Control Network level.
- GCOM for communication with AdvSoft for Windows and external computers. The easy way for external computers to take advantage of the powerful data acquisition and command entry services offered by Advant OCS.
- Advant Fieldbus 100 for communication with distributed I/O stations, programmable controllers and motor drives via ABB's S800 I/O.
- RCOM/RCOM+ for long-distance communication with remote terminal using dedicated or dial-up telecommunication lines.
- RS 232 for communication with external computers at the process signal/device level by ABB's EXCOM protocol and for local printout of data, reports, event messages and alarms.
- MVI (Multi-Vendor Interface) for communication with other makes of control systems over MODBUS I, Siemens 3964R or Allen-Bradley's DF1.
- Profibus DP for communication with other makes of controllers and with stand-alone I/O systems made for this popular communication protocol.
- Telecontrol communication with dispatch centers, power stations and remote terminals.
- SPA bus communication with relay protection units.
- LONWORKS network for integration with INSUM motor controllers, making it possible, not only to control motors more easily but also to monitor them more closely, all over a single bussed connection.



Motor Control Center



External computer



Remote terminal

If the criterion for openness is the ability to communicate with the surrounding world, then a more open process controller than Advant Controller 410 is hard to find.

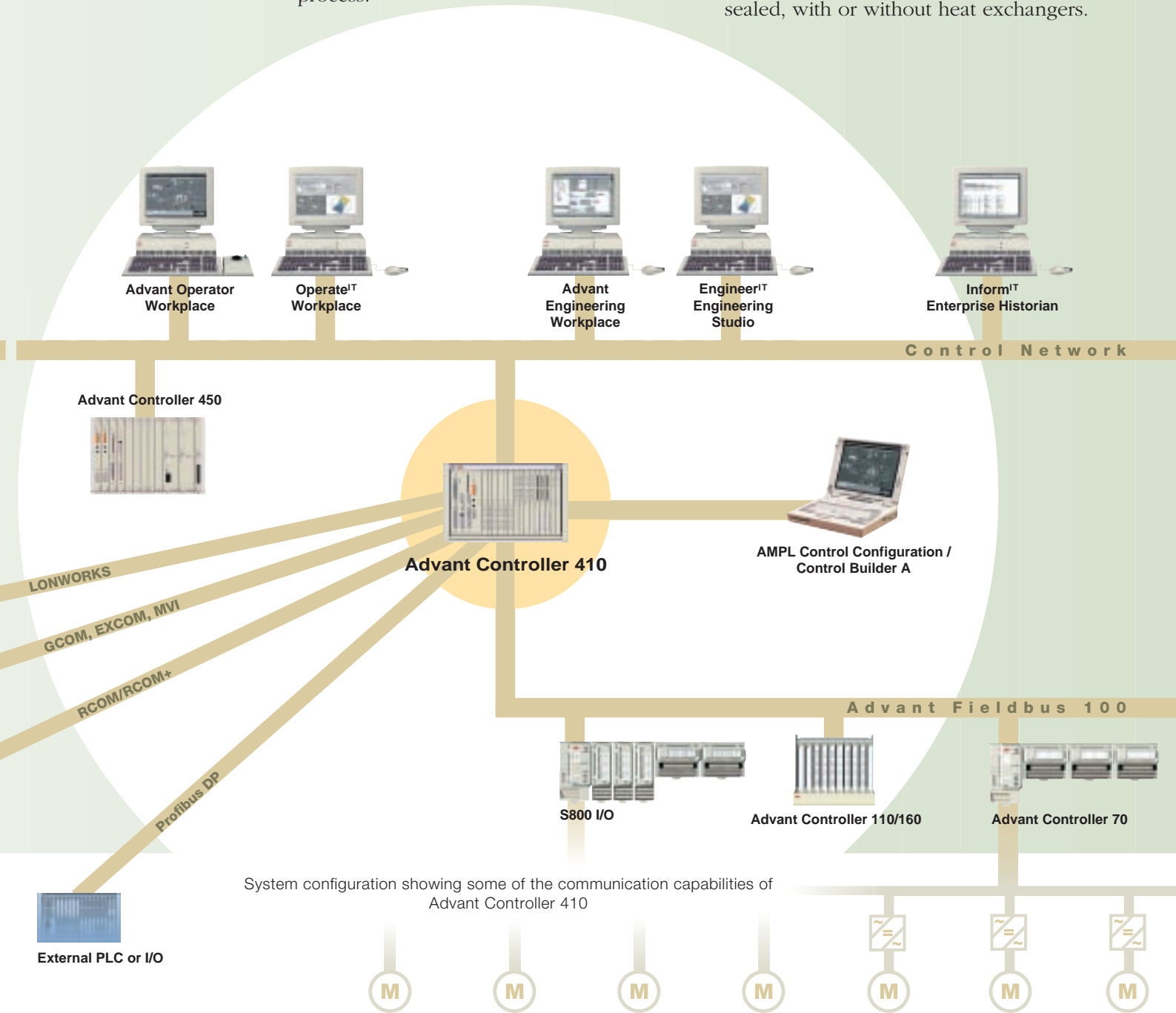
### Redundancy where it counts

To boost availability in critical applications, Advant Controller 410 can be equipped with backup redundancy for MasterBus 300/300E, Advant Fieldbus 100, power supplies, voltage regulators and I/O boards for regulatory control. All this redundancy is transparent both to the user and to the process.

### Enclosures

Advant Controller 410 consists of one rack, with space for up to four communication modules and 15 full-size I/O modules. The I/O rack is designed for installation in cabinets equipped with a swing-out frame, permitting access to both the front and back of the rack for ease of installation and maintenance. The external connections are routed through connection units normally fitted inside, at the back of the cabinet.

Cabinets with various protection classes are available, e.g. ventilated, tropical and sealed, with or without heat exchangers.



System configuration showing some of the communication capabilities of Advant Controller 410

# Technical shortcut

## Power supply alternatives

Direct (unisolated)	24 V d.c.
D.C., by isolated DC/DC converter <sup>1</sup>	24/48 V d.c.
A.C. (isolated) <sup>1</sup>	120/230 V, 47-63 Hz

## Basic capacity and performance

Primary memory	4 or 8 MB
Available for application, approx.	1.4 (5.4) MB
Program execution cycle: Selectable	10ms-2s or 5ms-32s

## Basic communication ports

RS 232 for Advant Engineering Workplace	1
RS 232 for printer	1
RS 232 for MasterView 320	1

## Total I/O capacity (S100 & S800 I/O)<sup>2</sup>

S100 I/O modules	Up to 15
I/O channels	Up to 2,500
AI channels (incl. calculated)	Up to 900
AO channels (incl. calculated)	Up to 900
DI channels (incl. calculated)	Up to 2,300
DO channels (incl. calculated)	Up to 1,400

## Software options <sup>2</sup>

- Advanced arithmetic, regulatory control and support for analog thyristor converters
- Advanced PID control, NOVATUNE
- MasterView 320 support
- Advant Operator Workplace support
- MasterBatch 200/1 support
- User-defined PC elements

## Hardware options <sup>2</sup>

Interface modules	Up to 4
- V.24/RS232 interface, CI531, 2 ch. <sup>3</sup>	Up to 2
- MasterBus 300/300E interface, CS513/CI547	Up to 2
- GCOM, CI543	Up to 4
- RCOM/RCOM+ interface, CI532Vxx, 2 ch.	Up to 4
- Free-progr. Multi-Vendor Interface, CI535, 2 ch.	Up to 4
- Free-programmable interface, PU535	Up to 4
- MasterFieldbus interface, CI570	Up to 4
- Advant Fieldbus 100 interface, CI522A	Up to 4
- Profibus DP interface, CI541V1	Up to 4
- LONWORKS network, 1.25 Mbits/s interface, CI572	Up to 2
- Modbus interface, CI532V02 & CI534V02, 2 ch.	Up to 4
- Siemens 3964R interface, CI532V03, 2 ch.	Up to 4
- Allen-Bradley DF1 interface, CI534V04, 2 ch.	Up to 4
- Telecontrol & SPA bus, CI535Vxx <sup>4</sup>	Up to 2

## Cabinets <sup>2, 5, 6</sup>

- RM500V1, IP21, IP41 or IP54: WxDxH 800x512x2125 mm, (31.5"x20.2"x83.7")
- RM500V2, IP21, IP41 or IP54: WxDxH 700x637x2225 mm, (27.6"x25.1"x87.6")

## Notes

- 1 Can be combined for dual redundancy.
- 2 See Advant OCS with Master Software Product Guides for details.
- 3 For up to one additional printer, two EXCOM or two additional MasterView 320 connections.
- 4 See Advant OCS and Telecontrol Product Guides for details
- 5 Can be combined into bays of multiple cabinets.
- 6 Corresponds to the NEMA protection classes 1, 2 and 5.



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