Chapter 8 Ordering

8.1 Price List Structure

Depending on the desired I/O configuration one or several price books and price lists must be used when ordering an Advant Controller 160 with local S600 I/O, distributed S800 I/O or additional hardware modules to support enhanced features, e.g., burner management, turbine control, or safety applications.

Advant Controller 160 Version 2.1 (3BSE020695/B)

Price Book AC 55/70/110/160, AdvaSoft and OPC Server (3BSE001780/L).

See this Product Guide.

S800 I/O Version 3.2 (3BSE014394/D)

Price Book S800 I/O (3BSE020696/A).

See S800 I/O Product Guide (3BSE015969R301).

Spare Parts (3BSE001783/K)

Price Book AC 55/70/110/160, AdvaSoft and OPC Server (3BSE001780/L).

See this Product Guide.

8.2 Assembled Delivery or Loose Part Delivery

The item **Assembly and test** in Table 8-1 determines if the controller shall be mounted in cabinets or not. If this item is not ordered the delivery will be a loose part delivery.

Note also that in Table 8-1 the items for CE-marking are different for an assembled delivery and for a loose part delivery.

8.3 Loose Part Delivery and CE-marking

If an Advant Controller 160 is ordered as a loose part delivery and the intention is to mount the equipment in other cabinets than RM500, certain considerations must be taken to make it follow the provisions of the EMC Directive 89/336/EEC, Low Voltage Directive 73/23/EEC, and 93/68/EEC.

- The cabinet or series of cabinets mounted side by side must be radio-proof.

- Protection against line conducted radio emissions is obtained by means of a mains net filter placed in the cabinet close to the incoming mains cable.

- Communication cable shields must have a capacitive grounding at the point where they enter the cabinet.

The conditional EC-Declaration of Conformity, which accompanies the loose part delivery, must be signed by the person responsible for assembling the controller in cabinets.

8.4 Reference Guide

This is the Reference Guide for Price List **3BSE020695/B**.

8.4.1 General and Normative Requirements

Table 8-1. General and Normative Requirements

Description	Consists of	Article No.
CE-marking, Cabinet Mounted Delivery	EC Declaration of Conformity Mains Filter.	3BSE009129R1
CE-marking, Loose Parts Delivery	Conditional EC Declaration of Conformity.	3BSE009130R1

8.4.2 Basic Unit

Table 8-2. Basic Units

Description	Consists of	Article No.
Advant Controller 160 2.1 Basic Unit, Consisting of: Subrack, cable duct, software license, CD-ROM including system software, AMPL Libraries, system software extensions, user documentation.	RF616, RC610, Software on CD-ROM.	3BSE005559R3

8.4.3 Hardware Options

Additional hardware modules and equipment to support enhanced features, e.g., burner management, turbine control, or safety applications, can be ordered directly via Price List *Advant Controller 160 Special Item*s (3BDS 100 580) of Regional Center Germany.t

Table 8-3. Hardware Options

Description	Consists of	Article No.
Dummy Module	RB601	3BSE002803R1
I/O Fan Unit 24 V	RC620	3BSE003097R1
CPU Communication Cable Set used to load the communication section (CS) software of a Processor Module.	W173	GKWF310703R1
PM640 Processor Module, for non redundant processing	PM640	3BSE010534R1
PM644 Processor Module, for non redundant processing, PROFIBUS-DP, rotational speed signal input.	PM644	3BSE014664R1
PM645B Processor Module[1], for redundant processing, high speed link, rotational speed signal input.	PM645B	3BSE010535R1
PM646 Processor Module, for redundant processing with additional monitoring functions for safety application systems.	PM646	3BSE014700R1
PM665 Processor Module, Power PC based. For redundant processing, high speed link, rotational speed signal input, and high performance requirements.	PM665	3BDS005799R1

1 PM645B replaces Processor Modules PM645A and PM645C that are no longer available.

8.4.4 Upgrade and Update

Available upgrades and updates of Advant Controller 160 Software. for an upgrade or update order you have to state the SEAPR order number of the original delivery. An upgrade or update cannot be ordered together with any other item in the price list.

Table 8-4. Upgrades and Updates of Advant Controller 160 Software

Description	Consists of	Article No.
Upgrade Advant Controller 160 Software to version 2.1. The upgrade license is valid for all Processor Modules in one Basic Rack RF616.	Software on CD-ROM.	3BDS005572R3
Update Advant Controller 160 Software to latest revision of version 2.1[1]	Software on CD-ROM.	3BDS005591R3

1 Updates can be ordered after release of a new revision and approved Status Report.

8.4.5 Communication

Table 8-5. Advant Fieldbus 100

Description	Consists of	Article No.
Advant Fieldbus 100 **terminator kit coaxial** (1 kit required per bus cable)	1 × 75 Ω BNC terminator plug 1 × ditto with ground lead	3BSE006244R1
Modem for Advant Fieldbus 100 conversion **coaxial/optical**	TC630	3BSE002253R1
CI626 Advant Fieldbus 100 interface kit to **single line (coaxial)**	1 Bus interface CI626, AF 100 connector kit for one bus line only	3BSE004006R1
CI627 Communication Interface **(twisted pair)**	1 Bus interface CI627, 2 connectors for AF 100	3BSE009799R1
CI630 Advant Fieldbus 100 interface kit to **single line (coaxial)**	1 Bus interface CI630, AF 100 connector kit for one bus line only	3BSE011001R1
CI630 Advant Fieldbus 100 interface kit to **redundant bus (coaxial)**	1 Bus interface CI630, AF 100 connector kit for both bus lines	3BSE011002R1
CI631 Communication Interface **(twisted pair)**	1 Bus interface CI631, 2 connectors for AF 100	3BSE016347R1
Modem for Advant Fieldbus 100 conversion **coaxial/twisted pair**	TC513V1	3BSE018405R1

Table 8-5. Advant Fieldbus 100 (Continued)

Description	Consists of	Article No.
Modem for Advant Fieldbus 100 conversion **twisted pair/optical**	TC514V2	3BSE013281R1
Modem for Advant Fieldbus 100 **repeater twisted pair/twisted pair**	TC515V2	3BSE013284R1
Advant Fieldbus 100 **terminator twisted pair** (1 required per bus cable)	TC501V150	3BSC550038R1
Advant Fieldbus 100 **Trunk Tap** for **twisted pair**	TC506	3BSC840074R1
Advant Fieldbus 100 **Connection Kit to optical**	AF100K01	3BSE005544R1
Advant Fieldbus 100 **Connection Kit to redundant bus coaxial** (two bus lines)	AF100K02	3BSE005545R1
Advant Fieldbus 100 **Connection Kit for single line**	AF100K03	3BSE006251R1

Table 8-6. Multi Vendor Interface

Description	Consists of	Article No.
Submodule Carrier, required for connection of CI532. Two CI532 fit into one carrier.	SC610	3BSE001552R1
MVI, Multi Vendor Interface with **RCOM/ RCOM+** protocol. It holds two buses.	CI532V01	3BSE003826R1
MVI, Multi Vendor Interface with **MODBUS I** protocol. It holds two buses.	CI532V02	3BSE003827R1
MVI, Multi Vendor Interface with **Siemens 3964(R)** protocol. It holds two buses.	CI532V03	3BSE003828R1
Short Distance Modem for cable length < 10 km. Power 24V d.c., width = 55 mm.	TC562	3BSC630049R1
Cable Assembly for connection of CI53x to modem TC562.	TK595	3BSE006830R1

Table 8-6. Multi Vendor Interface (Continued)

Description	Consists of	Article No.
SERCOS Interface.[1]	SC610, CI590, TC590V02	3BHS105393
Interbus S Interface.[1]	CI680, software on diskette	3BHF000357R1

1 Can be ordered directly at CHIND – BU Printing, Dept. IDR (phone: +41 56486 8859).

8.4.6 Power System

Table 8-7. Power Supply in Rack

Description	Consists of	Article No.
Power supply module Input: 110/120/220/240 V a.c. or 110/220/250 V d.c. Output: 24 V, 60 W, d.c. Fits sub-rack	SA610 Open-ended mains cable Connector for relay output	3BSE000655R1

Table 8-8. Power Supply in RM5xx (width 800 mm)

Description	Consists of	Article No.
Power supply Kit Input: 120 V a.c. Output: 24 V, 10 A, d.c.	SA161 Including power switch, mounting plate and cables	3BSE005746R1
Power supply Kit Input: 230 V a.c. Output: 24 V, 10 A, d.c.	SA162 Including power switch and cables	3BSE005747R1
Power supply Kit Input: 110/120/220/240 V a.c. or 110/220/250 V d.c. Output: 24 V, 60 W, d.c.	SA610 Including power switch, mounting plate and cables	3BSE005748R1

Table 8-9. Power Supply in RM5xx (width 700 mm)

Description	Consists of	Article No.
Power supply Kit Input: 120 V a.c. Output: 24 V, 10 A, d.c.	SA161 Including power switch, mounting plate and cables	3BSE007040R1
Power supply Kit Input: 230 V a.c. Output: 24 V, 10 A, d.c.	SA162 Including power switch and cables	3BSE007041R1
Power supply Kit Input: 110/120/220/240 V a.c. or 110/220/250 V d.c. Output: 24 V, 60 W, d.c.	SA610 Including power switch, mounting plate and cables	3BSE007042R1

Table 8-10. Power Supply for Field Equipment

Description	Consists of	Article No.
Single a.c Power Supply Input: 120 V a.c., 50/60 Hz Output: 24 V, 10 A, d.c., unregulated	SA161 SX554 TK402V027	3BSE003591R1
Single a.c Power Supply Input: 230 V a.c., 50/60 Hz Output: 24 V, 10 A, d.c., unregulated	SA162 SX554 TK402V027	3BSE003592R1
Single a.c Power Supply Input: 120 V a.c., 50/60 Hz Output: 48 V, 5 A, d.c., unregulated	SA171 SX554 TK402V027	3BSE003593R1
Single a.c Power Supply Input: 230 V a.c., 50/60 Hz Output: 48 V, 5 A, d.c., unregulated	SA172 SX554 TK402V027	3BSE003594R1

Table 8-11. Main Supply Filter

Description	Consists of	Article No.
Main Supply Filter, 250 V, 20 A	–	3BSC740007R1

Table 8-11. Main Supply Filter (Continued)

Description	Consists of	Article No.
Main Supply Filter, 250 V, 55 A	–	3BSC740008R1
Main Supply Filter, 250 V, 80 A For DC main supply, 24 V d.c., 48 V d.c.	–	3BSC740009R1

8.4.7 S600 I/O

Table 8-12. S600 I/O Units

Description	Consists of	Article No.
I/O station, non redundant bus extender	Subrack RF615, Cable duct RC610 Bus extender CI610	3BSE000650R1
I/O extension kit	Subrack RF620, Cable duct RC610 Bus cable TK612, Power cable TK615	3BSE011071R1
I/O bus extension kit	Bus extender CI615 for base station Bus terminator TC610 for I/O extension bus	3BSE000756R1
I/O station, **redundant** bus extender	Subrack RF615, Cable duct RC610 2 Bus extenders CI610	3BSE011004R1

Table 8-13. S600 Analog Input Modules

Description	Consists of	Article No.
32 channels, 12 bits resolution, single ended, 0-20 mA, shunt 250 Ω	AI610	3BHT300000R1
16 channels, 12 bits resolution, differential, 0-20 mA, 4-20 mA, ±20 mA or ±10 V, shunt 250 Ω, CMV 100 V, CMRR > 80 dB (16 2/3, 50 or 60 Hz)	AI620	3BHT300005R1
16 channels, 12 bits resolution, galvanic isolated as one group, 0-20 mA, CMV 50 V, CMRR> 100 dB, Shunt 100 Ω	AI625	3BHT300036R1

Table 8-13. S600 Analog Input Modules (Continued)

Description	Consists of	Article No.
12 channels for Pt100 or resistance, 3- or 4-wire (2 wire with extra wiring om process connector), 13 bits resolution, -200 to +600°C or 0-500 Ω, 0.5 V, CMRR > 100 dB, opto-isolated as one group	AI630	3BHT300011R1
14 channels for thermocouple or milli-volts and 2 channels for ambient (CJ) temperature measurement with Pt100, 12 bits resolution, CMRR > 120 dB, opto-isolated as one group	AI635	3BHT300032R1

Table 8-14. S600 Analog Output Modules

Description	Consists of	Article No.
16 channels, 12 bits resolution, 0-20 mA, 0-10 V, opto-isolated as one group	AO610	3BHT300008R1
8 channels, 12 bits resolution, 0-20 mA, 4-20 mA ±20 mA, 0-5 V, 0-10 V, 1-5 V, ±10 V, each channel opto-isolated	AO650	3BHT300051R1

Table 8-15. S600 Analog Input/Output Modules

Description	Consists of	Article No.
AX645, 16 analog input channels, 4-20 mA, each configurable as input or output, 14 Bits resolution for input, 16 Bits resolution for output, opto-isolated as one group	AX645	3BHB001914R1

Table 8-16. S600 Pulse Counting Module

Description	Consists of	Article No.
5 counter channels, each with two counter inputs, max 100 kHz and one Strobe and one Set input, ±13 mA, 24 V d.c. or 5 V d.c. (only 24 V for Set), each input individually opto-isolated, connection via 15 Pin Sub-D for each channel. Operation modes: 1. Up- & down- counting 2. Frequency & difference measurement 3. Difference measurement 4. Position & rotational speed measurement	DP620	3BHT300016R1
Cable Kit for DP620. Connection unit TX620 and cable assemblies TK620V030.	TX620K01	3BSE009963R1
Speed meter input, max 50 kHz, ±13 mA, 24 V d.c. or 5 V d.c., detection of direction through second speed meter input, over-speeed trip logic with trip signal output via solid state 24 V d.c. and dry contact 60 V d.c., speed meter inputs and solid state output are individually opto-isolated.	DP640	3BHT300057R1

Table 8-17. S600 Digital Input Modules

Description	Consists of	Article No.
32 channels, 24 V d.c., non-isolated	DI610	3BHT300004R1
32 channels, 24 V d.c., opto-isolated in four groups	DI620	3BHT300002R1
32 channels, 48 V d.c., opto-isolated in four groups	DI621	3BHT300012R1
32 channels, 60 V d.c., opto-isolated in four groups	DI622	3BHT300013R1
16 channels, 120 V a.c., opto-isolated in four groups	DI635	3BHT300015R1
16 channels, 230 V a.c., opto-isolated in four groups	DI636	3BHT300014R1

Table 8-17. S600 Digital Input Modules (Continued)

Description	Consists of	Article No.
32 channels, 24 V d.c., opto-isolated in four groups, sequence of event or pulse catching capability	DI650	3BHT300025R1
32 channels, 48 V d.c., opto-isolated in four groups, sequence of event or pulse catching capability	DI651	3BHT300026R1
32 channels, 60 V d.c., opto-isolated in four groups, sequence of event or pulse catching capability	DI652	3BHT300027R1
32 channels, 24/48 V d.c., internal 48 V sensor power supply**,** opto-isolated, sequence of event capability, wire break supervision	DI685	3BSE011613R1

Table 8-18. S600 Digital Output Modules

Description	Consists of	Article No.
32 channels, 24 V d.c., short-circuit proof transistors, max. 200 mA, non-isolated	DO610	3BHT300006R1
32 channels, < 60 V d.c., short-circuit proof transistors, max. 0.5 A, opto-isolated in four groups	DO620	3BHT300009R1
16 channels, 24 V d.c., short-circuit proof transistors, max. 2.4 A, isolated in eight groups	DO625	3BHT300040R1
16 channels, 24-250 V a.c./d.c., relay contacts [1, 2]	DO630	3BHT300007R1
6 channels, **< 60 V d.c**., relay contacts each output separately isolated.	DX610	3BSE013087R1

1 Relay data Load current: max 2 A min 20 mA Breaking Capacity: a.c. max 500 VA d.c. max 40 W
2 Relay data Load current: max 2 A, Breaking Capacity: max 120 W for d.c. loads

8.4.8 Cables and Connectors

Table 8-19. Cables and Connectors

Description	Consists of	Article No.
Front connector with screw terminals	TF620	3BHT100013R1
Process cable w. fitted connector TF610, unscreened, l = 3 m (9.8 ft.)	TK630V030	3BSC950007R1
Process cable w. fitted connector TF610, unscreened, l = 5 m (16 ft.)	TK630V050	3BSC950007R2
Process cable w. fitted connector TF610, unscreened, l = 10 m (32.8 ft.)	TK630V110	3BSC950007R3
Process cable w. fitted connector TF610, screened, l = 3 m (9.8 ft.)	TK640V030	3BSC950008R1
Process cable w. fitted connector TF610, screened, l = 5 m (16 ft.)	TK640V050	3BSC950008R2
Process cable w. fitted connector TF610, screened, l = 10 m (32.8 ft.)	TK640V110	3BSC950008R3
Terminal unit TX650 one per I/O module is required	AC110K11	3BSC840005R1
Mounting bar for terminal unit RA620	AC110K09	2166 0559-F
Cable from base to I/O station, 2.5 m (8 ft.)	TK610V025	3BHT200007R1
Cable from base to I/O station, 5 m (16 ft.)	TK610V050	3BHT200008R1
Cable from base to I/O station, 10 m (32 ft.)	TK610V110	3BHT200009R1

Table 8-20. Cable Set for Redundant and Parallel Processing

Description	Consists of	Article No.
CPU connection cable set for data exchange (parallel processing), l = 30 cm	TK661V003	3BSE010995R1
CPU connection cable set for data exchange (parallel processing), l = 50 cm	TK661V005	3BSE010995R2
CPU connection cable set for data exchange (parallel processing), l = 6 m	TK661V060	3BSE010995R3
CPU connection cable set for data exchange (parallel processing), l = 8 m	TK661V080	3BSE010995R4

Table 8-20. Cable Set for Redundant and Parallel Processing (Continued)

Description	Consists of	Article No.
CPU connection cable set for redundancy, l = 30 cm	TK662V003	3BSE010996R1
CPU connection cable set for redundancy, l = 6 m	TK662V060	3BSE010996R2
CPU connection cable set for redundancy, l = 8 m	TK662V080	3BSE010996R3

8.4.9 Assemby and Test

Table 8-21. Assembly and Test

Description	Consists of	Article No.
Assembly and Test of subrack in RM500 cabinet. Applicable if assembled by ABB Automation Products in Västerås.	–	3BSE016033R1

8.4.10 Packaging Options

Table 8-22. RM500V1 Cabinets (width 800 mm)

Description	Consists of	Article No.
Cabinet RM521 ventilated cabinet IP21, height = 2125 mm	RM521	3BSE016063R1
Cabinet RM522 ventilated cabinet IP41, height = 2125 mm	RM522	3BSE016064R1
Cabinet RM523 sealed cabinet IP54, height = 2125 mm	RM523	3BSE016065R1
Plate holder for one RM500V1 cabinets (2125 mm)	Plate holder	3BSE016259R1
End panel for RM500V1 cabinets (2125 mm)	End panel	3BSE016253R1
Replacement of single door to double door. For RM500V1 cabinets (2125 mm).	Door	3BSE016260R1
Shield plate, to be used between cabinets in a row (2125 mm)	Shield plate	3BSE016256R1
Locking Device Cylinder, RM500.	Lock	3BSE016258R1

Table 8-23. RM500V2 Cabinets (width 700 mm)

Description	Consists of	Article No.
Cabinet RM507 ventilated cabinet IP21, (H= 2225 mm)	RM507	3BSE016051R1
End panel for RM5xx cabinets (H=2225 mm)	End panel	3BSE016254R1
Shield plate, (H=2225 mm)	Shield plate	3BSE016257R1

8.4.11 S800 I/O

S800 I/O modules need to be ordered from Price Book S800 I/O (3BSE020696/A), Price List S800 I/O Version 3.2 (3BSE014394/E). Note that Advant Controller 160 version 2.1 does not support all S800 modules that are mentioned in the Price List. The following table applies:

Table 8-24. S800 I/O modules for Advant Controller 160

Type	Supported Modules
Analog Input	AI801, AI810, AI820, AI830, AI835
Analog Output	AO801, AO810, AO820
Digital Input	DI801, DI810, DI811, DI814, DI820, DI821, DI885
Digital Output	DO801, DO810, DO814, DO815, DO820, DO821
Pulse Counter	–

8.4.12 Documentation

Table 8-25. Documentation on Advant Controller 160

Title	Description	Article No.
Advant OCS with Master SW User Documentation on CD-ROM	Complete Documentation of Advant OCS with Master software on CD-ROM.	3BSE008143R1101
WWW Access to Advant OCS Documentation	Subscription for one year, single user.	3BSE001228R0001
WWW Access to Advant OCS Documentation	Subscription for 5 years, single user.	3BSE001503R0001

Table 8-25. Documentation on Advant Controller 160 (Continued)

Title	Description	Article No.
AMPL Configuration Advant Controller 100 Series Reference Manual	Contains instructions about configuration and application programming, fault tracing, execution, memory and load calculation of Advant Controller 110 and 160.	3BSE009626R501
Advant Controller 160 User's Guide	User's Guide describing the AC 160 equipment and how to install and commission the system.	3BDS005555R201
Data Base Elements Advant Controller 160 Reference Manual	Reference Manual describing the DB Elements used in Advant Controller 160.	3BDS005556R301
PC Elements Advant Controller 160 Reference Manual	Reference Manual describing the PC Elements used with Advant Controller 160.	3BDS005557R201
S600 I/O Hardware Reference Manual/ Rev B	Reference Manual describing the I/O and interface modules used with Advant Controller 100 Series.	3BSE011123R0001 / Rev B
S600 I/O Hardware Advant Controller 160 Reference Manual	Reference Manual describing the I/O and interface modules used with Advant Controller 160.	3BDS005558R201
Advant Fieldbus 100 User's Guide	User's Guide for Advant Fieldbus 100, containing a technical description, technical data and instructions for installation, commissioning and fault tracing used.	3BSE000506R801
RCOM Advant Controller 100 Series User's Guide	Contains a technical description, instruction for installation, start-up, design and fault tracing of <u>R</u>emote <u>COM</u>munication in Advant Controller 110 and 160.	3BSE003181R0001 Rev. A
Multi Vendor Interface - MODBUS Advant Controller 100 Series User's Guide	Contains a technical description, instruction for installation, start-up, design and fault tracing for MVI/MODBUS in Advant Controller 110 and 160.	3BSE006712R0001 Rev. A
Multi Vendor Interface - Siemens 3964(R) Advant Controller 100 Series User's Guide	Contains a technical description, instruction for installation, start-up, design and fault tracing for MVI/Siemens 3964(R) in Advant Controller 110 and 160.	3BSE006713R0001 Rev. A

Table 8-25. Documentation on Advant Controller 160 (Continued)

Title	Description	Article No.
PROFIBUS-DP Advant Controller 110/160 User's Guide	Information about PROFIBUS-DP for Advant Controller 110 and Advant Controller 160.	3BDS100313R301
MODBUS Panel Connections User's Guide	How to connect a panel to Advant controller 160 via MODBUS interface.	3BDS004129R401
Installation Rules User's Guide	A description on the installation rules for Advant OCS, to ensure correct function in environments where such disturbances are present.	3BSE009178R0001 Rev. A
Interference-free Electronics. Design and Applications	Interference-free electronics teaches how to design circuit boards, electronic devices and systems with high immunity to interference. The book also deals with process adaptation, communication and power supply with immunity to interference.	3BSE000877R1