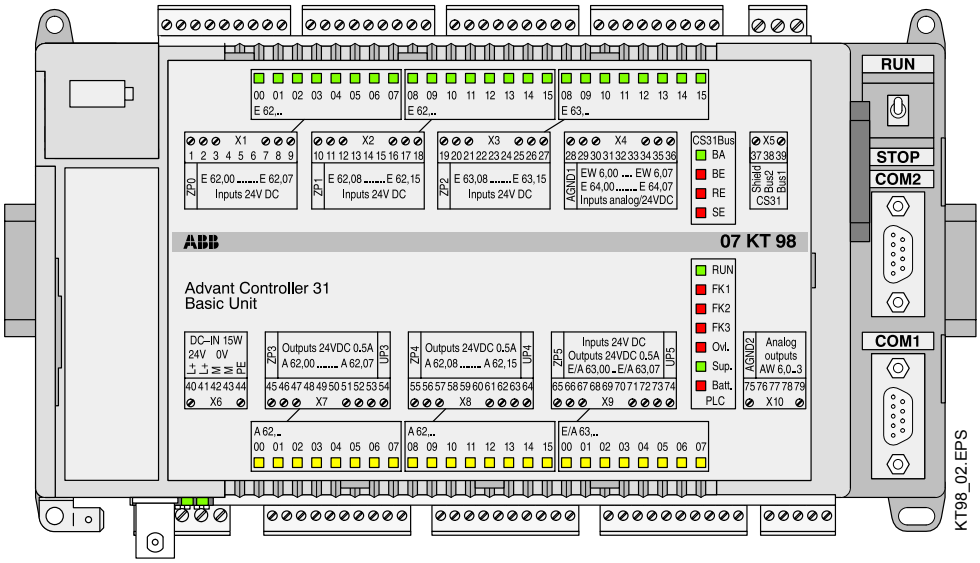
Hardware

Advant Controller 31
Intelligent Decentralized Automation System

Basic Unit
07 KT 98



2.2 Basic Unit 07 KT 98

Basic unit with max. 1 MB user program + 1 MB user data + 256 kB RETAIN, CS31 system bus

The basic unit 07 KT 98 is offered with several networking possibilities. A table on page 2.2-3 shows the features of the different basic units.

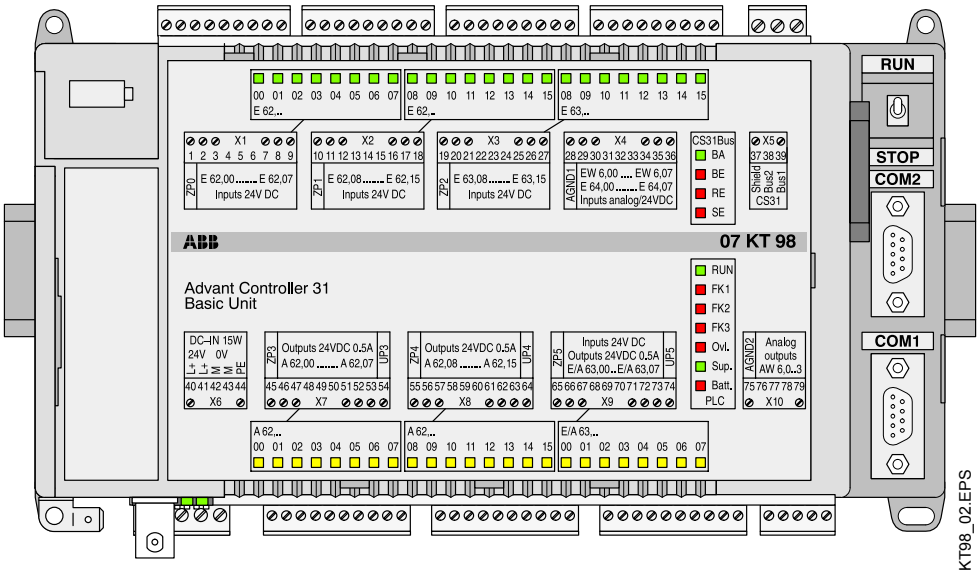


Fig. 2.2-1: Basic unit 07 KT 98 R0260

Contents

Functionality of the basic unit 07 KT 98

User program	1 MB
User data	1 MB + 256 kB RETAIN + 128 kB (Flash EPROM)
Digital inputs	24 in 3 groups of 8 each, electrically isolated
Digital outputs	16 transistor outputs in 2 groups of 8 each, electrically isolated
Digital inputs/outputs	8 in 1 group, electrically isolated
Analog inputs	8 in 1 group, individually configurable to 0...10 V, 0...5 V, +10 V, +5 V, 0...20 mA, 4...20 mA, Pt100 (2-wire or 3-wire), differential inputs, digital inputs
Analog outputs	4 in 1 group, individually configurable to 0...10 V, 0...20 mA, 4...20 mA
Serial interfaces	COM1, COM 2 as MODBUS interfaces, for programming and test functions and as freely programmable interfaces
Parallel interfaces for connection of couplers	07 KP 90 (RCOM), 07 KP 93 (2 x MODBUS), 07 MK 92 (freely programmable)
System bus interface	CS31
Integrated couplers	see next page
High-speed counter	integrated, many functions configurable
Real-time clock	integrated
SmartMedia Card	memory medium for operating system, user program and user data
LED displays	for signal conditions, operating statuses and error messages
Power supply voltage	24 V DC
Data backup	with lithium battery 07 LE 90
Programming software	907 AC 1131 as of V 4.1 (07 KT 98 with ARCNET interface) 907 AC 1131 as of V 4.2.1 (07 KT 98 with PROFIBUS-DP interface)

Differences between the basic units 07 KT 95 to 07 KT 98

Basic unit	07 KT 95	07 KT 96	07 KT 97	07 KT 98		
Number of digital inputs	12	24	24	24		
Number of digital outputs	8	16	16	16		
No. of digital inputs/outputs	-	-	8	8		
Number of analog inputs	4	-	8	8		
Pt100	no	-	yes	yes		
Number of analog outputs	2	-	4	4		
20 mA	no	-	yes	yes		
Are the analog inputs configurable as digital inputs?	no	-	yes	yes		
Terminals 20	-	E 63,00	E 63,08	E 63,08		
to	-	to	to	to		
27	-	E 63,07	E 63,15	E 63,15		
Processing time, 65 % bits, 35 % words, for 1 kB of program, typ.	0.3 ms	0.3 ms	0.3 ms	0.07 ms		
Order number	GJR5 2528 00 R....	GJR5 2529 00 R....	GJR5 2530 00 R....	GJR5 2531 00 R....		

Available versions of the basic units 07 KT 95 to 07 KT 98

Version of the basic unit	Integrated (internal) couplers	Version is available with			
		07 KT 95	07 KT 96	07 KT 97	07 KT 98
R0100, R0200	none	♦	♦	♦	
R0120, R0220	PROFIBUS-DP			♦	♦
R0160, R0260	ARCNET			♦	♦
R0162, R0262	ARCNET + PROFIBUS-DP			♦	♦
R0268	ARCNET + CANopen				♦
R0270	Ethernet			♦	♦
R0272	Ethernet + PROFIBUS-DP			♦	♦
R0276	Ethernet + ARCNET			♦	♦
R0277	Ethernet + Ethernet			♦	♦
R0278	Ethernet + CANopen			♦	♦
R0280	CANopen			♦	♦

Usable SmartMedia Cards

Version of the basic unit	Usable SmartMedia Card	
	07 MC 90, **5 V** GJR5 2526 00 R0**1**01	07 MC 90, **3.3 V** GJR5 2526 00 R0**2**01
R0**1**00 to R0**1**99	♦	
R0**2**00 to R0**2**99	♦	♦

2.2.1 Brief description

The basic unit 07 KT 98 works either as

- bus master in the decentralized automation system Advant Controller 31 or as
- slave (remote processor) in the decentralized automation system Advant Controller 31 or as
- stand-alone basic unit.

The basic unit is powered by 24 V DC.

2.2.1.1 Main features

- 24 digital inputs with LED displays
- 16 digital transistor outputs with LED displays
- 8 digital inputs/outputs with LED displays
- 8 **individually configurable** analog inputs 0...10 V, 0...5 V, ±10 V, ±5 V, 0...20 mA, 4...20 mA, differential inputs, Pt100 (2-wire or 3-wire), the analog inputs are also individually configurable as digital inputs
- 4 **individually configurable** analog outputs ±10 V, 0...20 mA, 4...20 mA
- 2 counters for counting frequencies up to 50 kHz, configurable in 7 different operating modes
- 1 CS31 system bus interface for system expansion
- 1 interface for connecting communication modules (e.g. 07 KP 90)
- 2 serial interfaces COM1, COM2
  – as MODBUS interfaces and
  – for programming and test functions
  – as freely programmable interfaces
- Real-time clock
- LEDs for displaying operating conditions and error messages
- Detachable screw-type terminal blocks
- Fastening by screws or by snapping the device onto a DIN rail
- The lithium battery 07 LE 90 can be put into the battery compartment in order to
  – store and backup data which is additionally contained in the RAM, e.g. the status of flags (RETAIN)
  – backup the time and date (real-time clock)
- RUN/STOP switch for starting and aborting the program execution
- Extensive diagnosis functions
  – self-diagnosis of the basic unit
  – diagnosis of the CS31 system bus and the connected modules
- Integrated Flash EPROM for storing program and data
- Exchangeable SmartMedia Card 07 MC 90 for user data or for updating the operating system or PLC program

2.2.1.2 Project planning / start-up

The following has to be observed for project planning and start-up:

- Programming
  is performed with AC31 programming software, which can be run on commercially available IBM compatible PCs (see documentation of the programming system 907 AC 1131).
- Online program modification
  A quick modification of the user program is possible without interrupting the operation (see programming system 907 AC 1131).
- Possible operating modes
  – Stand-alone basic unit
  – Bus master basic unit
  – Slave basic unit
- Backup of data areas,
  i.e. saving of data during power OFF/ON, is possible with an integrated battery and/or

  by storing them in the Flash EPROM.
- When using the PROFIBUS DP interface, project planning is performed in the same way as with 07 KT 97. For details see chapter "System Description".