

ABB ABB Series Service Manual

07 KT 98

1. Description

ABB 07KT98 GJR5253100R0260 07 KT 98 Advant Controller 31 Basic Unit

3. Product Information

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ABB 07KT98 GJR5253100R0260 07 KT 98 Advant Controller 31 Basic Unit

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)

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.

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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.

Digital I/O: 24 Digital Inputs, 16 Digital Outputs, And 8 additional configurable Digital Inputs/Outputs.

Analog Inputs: 8 channels.

Pt100 Support: Yes.

Digital Configuration: Yes, analog inputs are configurable as digital inputs.

Analog Outputs: 4 channels.

20 mA Support: Yes.

Terminals 20 to 27: Assigned to E 63,08 to E 63,15.

Performance: Significantly faster processing time, typically 0.07 ms for 1 kB of program (65% bits, 35% words).

Order Number: GJR5 2531 00 R

Communication: Includes CS 31 - Field bus.

Memory:

Program Memory: 1000 kByte Flash EPROM and RAM.

Plug-in Memory: Smart Media Card (Flash) for data storage and reloading the SPS-program.

Data Memory: 8192 bits, 8192 words (16 bit), and 1024 double words (32 bit).

Variables: 1 MB Variables + 256 k RETAIN.

Performance: Significantly faster cycle time for 1 Kbyte at 0.07 ms.

Inputs/Outputs:

Integral I/O: 24 DI, 16 DO, and 8 DC.

Maximum DI/DO: 1040 in total.

Integral AI/AO: 8 AI and 4 AO.

Maximum AI/AO: 232 AI and 228 AO.

Execution & Control:

Programming System: 907AC1131.

Program Execution: Cyclic, time controlled Multitasking (20 Tasks).

Logic Components: Unrestricted Timers and Counters; 256 Sequencers (of 16 sequences).

Fast Counters: 1 to 2 (various operating modes, max. 50 kHz).

Special Functions: Protocols such as PDNet, ARCNET®, MODBUS®, PI and PID controllers; 32 bit arithmetic; ASCII communication; Floating Point Arithmetic.

Hardware Details: Password protection, exchangeable battery, real-time clock, withdrawable terminal blocks with screw terminals, and mounting with or without DIN rail.

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