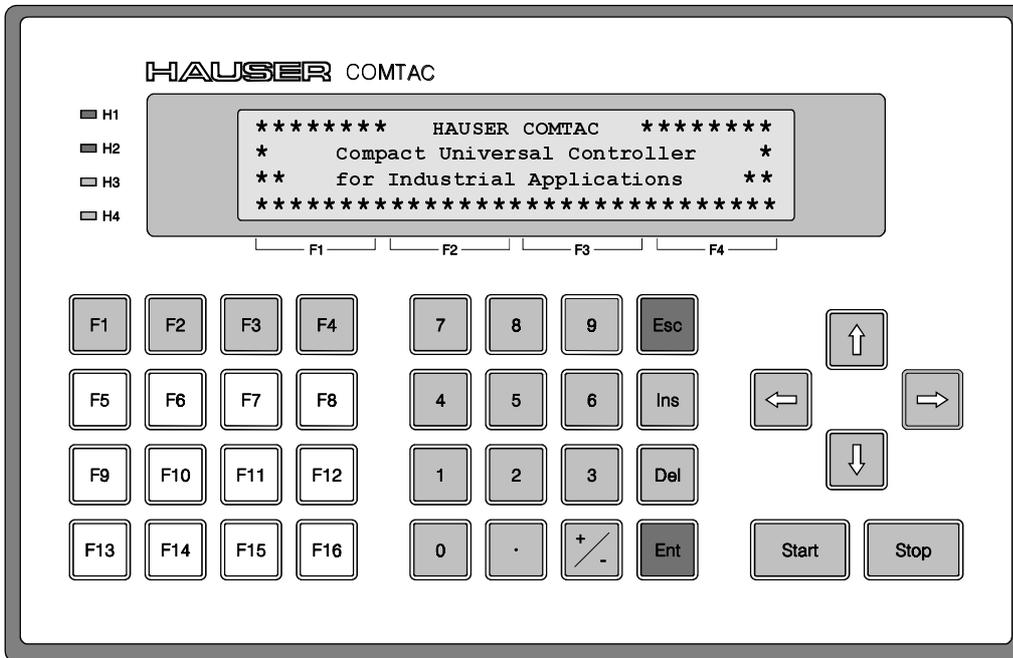


Compact Industrial Computer COMTAC

- The Low Cost Solution for Automation and Control -



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COMTAC 2000 & COMTAC 3000 features

Features

- ◆ Compact unit suitable for front panel mounting and for building into standard industrial switch cabinets.
- ◆ IP65 front panel protection as standard
- ◆ Numeric keypad with easily programmable function keys.
- ◆ Illuminated LCD panel (4x40 characters).

Control Functions

- ◆ 16 integrated 24V inputs. (32 on COMTAC 3000).
- ◆ 16 integrated 24V outputs, 24V/100mA or optional 300mA. (32 on COMTAC 3000)
- ◆ 3 analogue inputs (0...5V; 0...10V; -10V...+10V).
- ◆ RS485 interface for field bus communication and external I/O-expansion.
- ◆ Interrupt capability

COMTAC - the universal Industrial Controller

- ◆ Simple programming in BASIC language with BASIC interpreter and optimized control commands.
- ◆ Programmable Inputs and outputs.
- ◆ Powerful input - output control logic.
- ◆ Programmable LCD-display.
- ◆ Application specific labelling
- ◆ User defined function keys.
- ◆ Two RS232 interfaces to connect to other equipment:
 - ◆ Host interface: e. g. for a Terminal or PC to download programs or data.
 - ◆ Printer, floppy disk drive.
- ◆ RS485-interface
 - ◆ for a maximum of 31 bus devices
 - ◆ for field bus operation.
- ◆ Additional RS232 and RS485 interface available as an option
- ◆ external floppy disk drive HFM2 (3 ½ inch).

CTC-Pro software for the COMTAC"

COMTAC Software for automation of handling systems and production.

CTC-Pro software is based on our long experience in automation. It consists of several software modules for creating professional programs for handling systems or production applications.

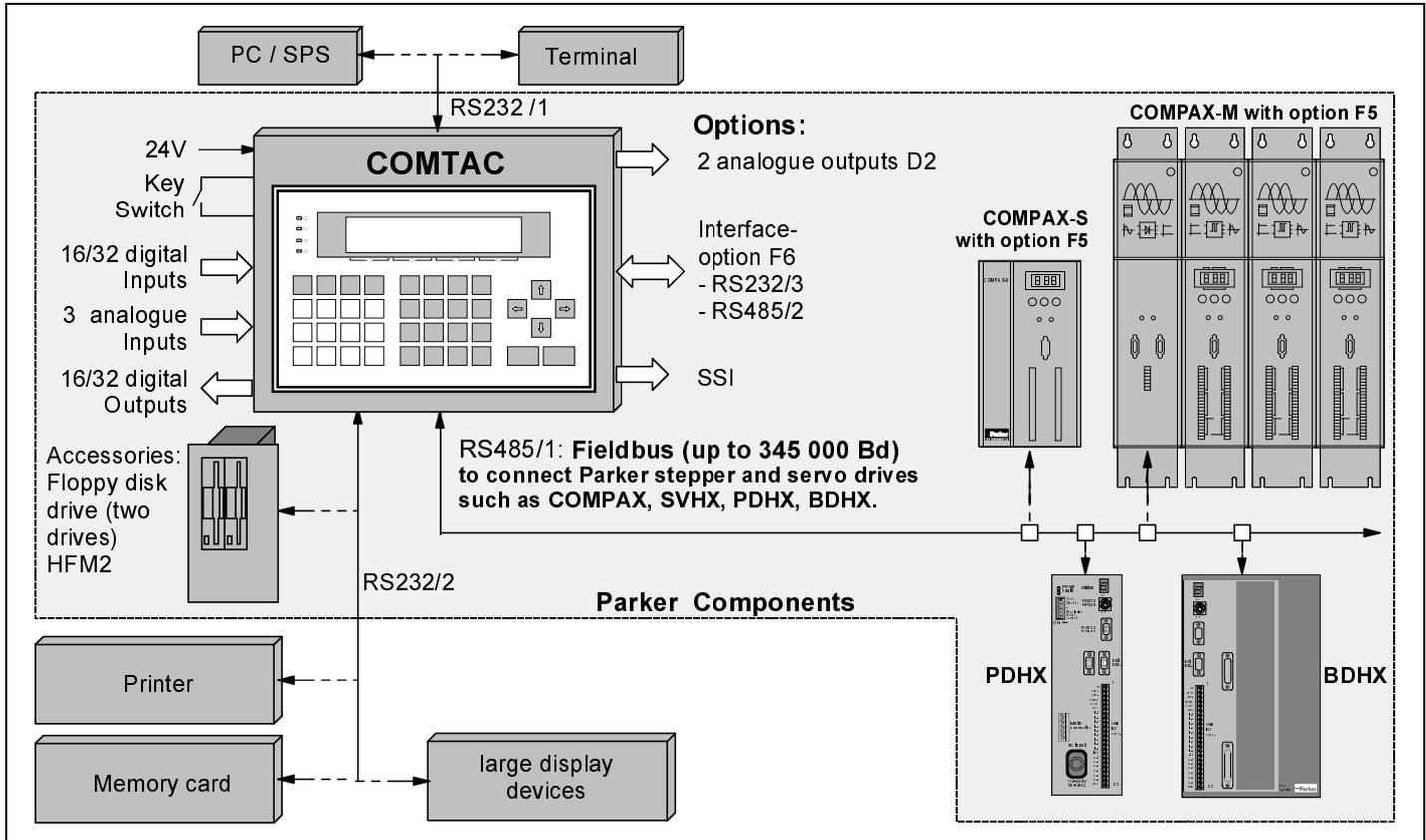
Typical application areas:

- ◆ Automation systems. COMTAC controls Parker servo drives and steppers.
- ◆ COMTAC used for a text display controlled by a PLC via digital inputs and outputs.

COMTAC - The Universal Industrial Computer

COMTAC is an easily programmable industrial computer, suitable for general automation applications.

The design allows for use as an universal controller for individual operation of machines and plant.



Software

COMTAC processes through a BASIC Interpreter with optimised commands for control tasks. Program operation is via a PC Programming Tool or alternatively with a terminal direct from the unit.

Both program and data in COMTAC are protected against power failure.

COMTAC Programming tool

To program COMTAC the HAUSER Programming Tool can be used both as a TV905 terminal emulator and as a PC program.

The PC program is provided with a help program and supports the storage media of the PC.

All functions are described in the operating instructions for the Programming Tool.

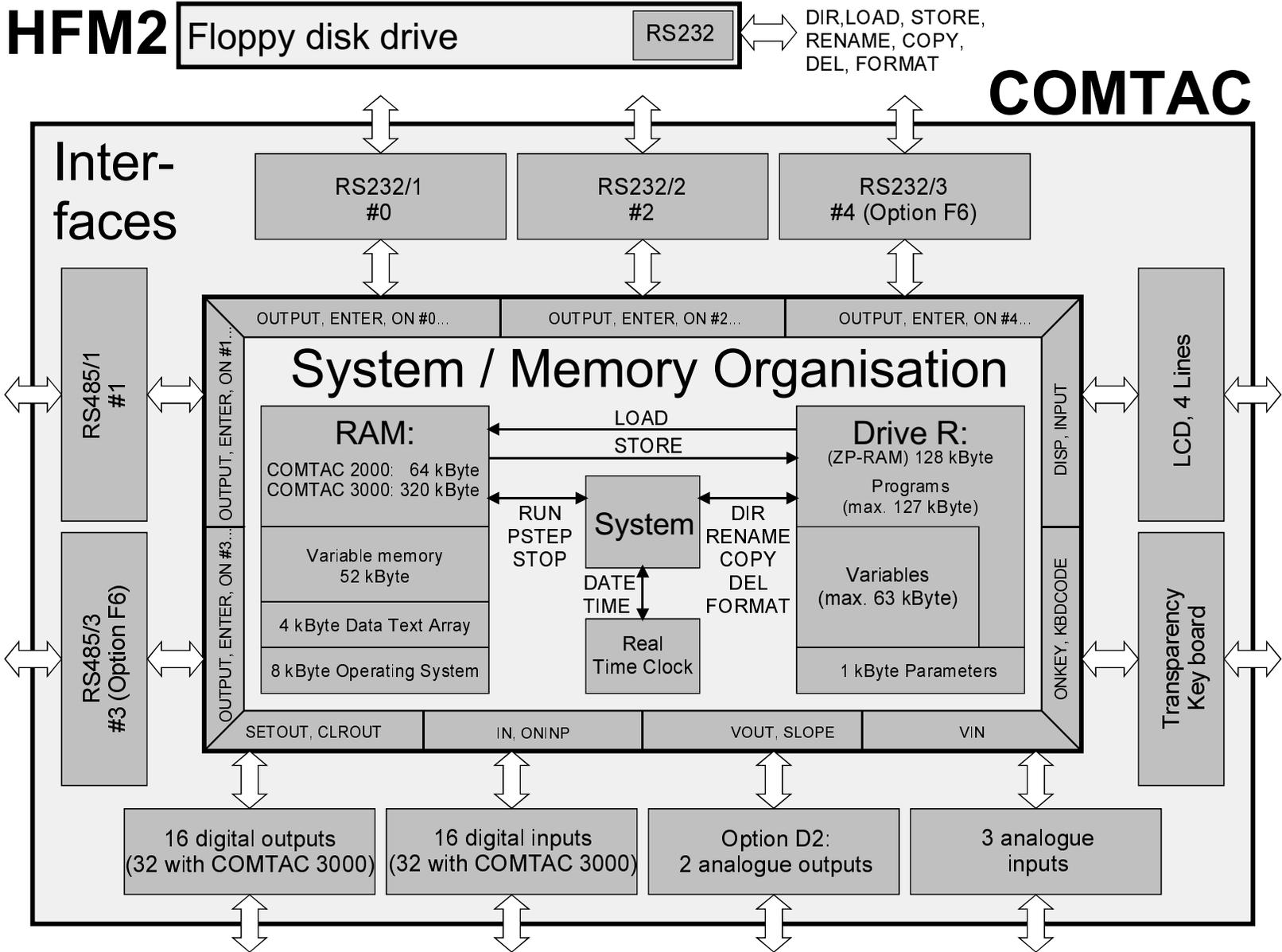
Interfaces

The versatile interfaces of COMTAC allow for a variety of control tasks in different areas:

- ◆ User interface (LCD-display, 4 lines of 40 characters)
- ◆ Three RS232 interfaces (one with option F6). All can be programmed by the user.
- ◆ Two RS485 interfaces (one with option F6). RS485/1 can run a field bus protocol.
- ◆ Input and output signals:
 - ◆ 16/32 digital inputs and outputs (PLC voltage levels); Optional outputs with 300mA rating.
 - ◆ Three analogue inputs (0...5V; 0...10V; -10...+10V).
 - ◆ Two optional analogue outputs (-10V...+10V / option D2) with a linear ramp function.

COMTAC - Structure

The block diagram shows the hardware functions of COMTAC together with the floppy disk drive HFM2. The inner block shows the handling of data and memory functions. The outer block shows interaction with interfaces and commands.



"CTC-Pro", the COMTAC Software for Automation in Handling and Production

"CTC-Pro" software is based on our long experience in automation. It consists of several software modules with which a professional program for handling systems or production applications can be created.

Advantages:

- ◆ Fast solutions, even for extensive calculations and data handling.
- ◆ MMI - data management: management of axis parameters and target positions of the axis.

Application areas:

- ◆ Automation systems using COMTAC in conjunction with Parker drives. COMTAC controls servo drives and steppers.
- ◆ COMTAC used for a text display controlled by a PLC via digital inputs and outputs.

User types:

COMTAC software is aimed at four different user types:

Technician in automation who uses a system of COMTAC and COMPAX

- ◆ The menus of the CTC-Pro software are used to control the system.
- ◆ With the "Programming" menu the data for machine interaction, axis parameters and target positions can be entered (teach function).
- ◆ The technician uses the available modules to create the operating program.
The available modules support:
 - Read in digital inputs
 - Define output functions
 - Movements of the axis.

⇒ This programming assumes a knowledge of the COMTAC functions.
Field bus communication is pre-programmed.

⇒ All control functions are carried out by COMTAC .

PLC programmer who uses a system of COMTAC and COMPAX

- ◆ COMTAC program is available which operates using the digital inputs and outputs together with a PLC.
- ◆ The menu functions of this program make programming and storing of machine parameters, target positions (teach function) and axis parameters possible.
The PLC has access to an assigned program number, position number and axis number using the digital inputs in a binary coded format. The internal COMTAC program decodes this number, produces position commands to the COMPAX and reports COMPAX status information back to the PLC.
Additional input and output functions for grippers, sensors and valves are performed by the PLC.
- ◆ Operating states, errors etc. can be displayed by COMTAC with an additional text display function. This makes other expensive text displays unnecessary.

⇒ There is no need to programme the COMTAC.

⇒ All control functions are carried out by the PLC.

PLC programmer who uses COMTAC for a text display

- ◆ Using the digital inputs, 100 strings can be selected and displayed on the COMTAC display.

⇒ There is no need to programme the COMTAC.

Basic programmer who uses a system of COMTAC and COMPAX

- ◆ For specific applications a helpful collection of program modules is available.
- ◆ The source code of these programmes is available and can be adapted to the requirements.

⇒ This programming assumes a knowledge of the COMTAC functions.
Field bus communication is already programmed.

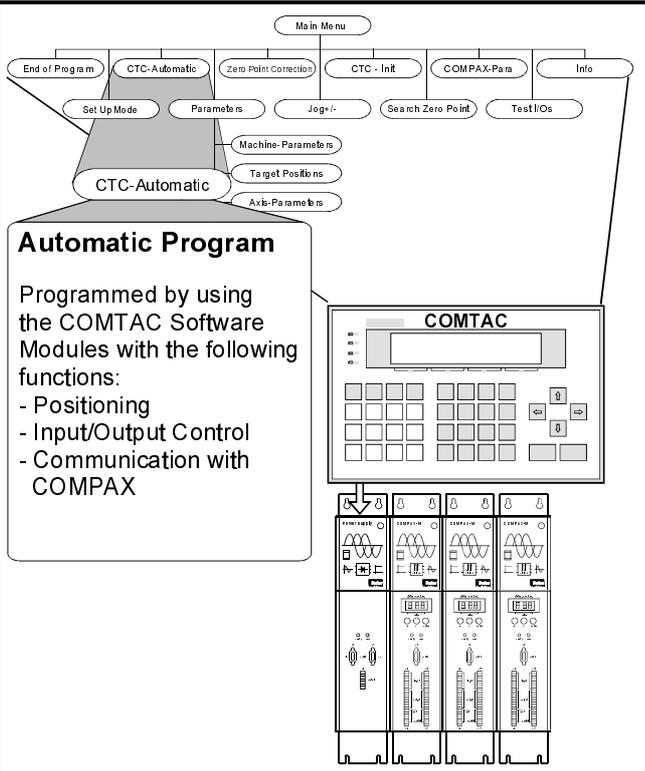
⇒ All control functions are carried out by COMTAC.

User categories

COMTAC software for automation offers solutions for four user types:

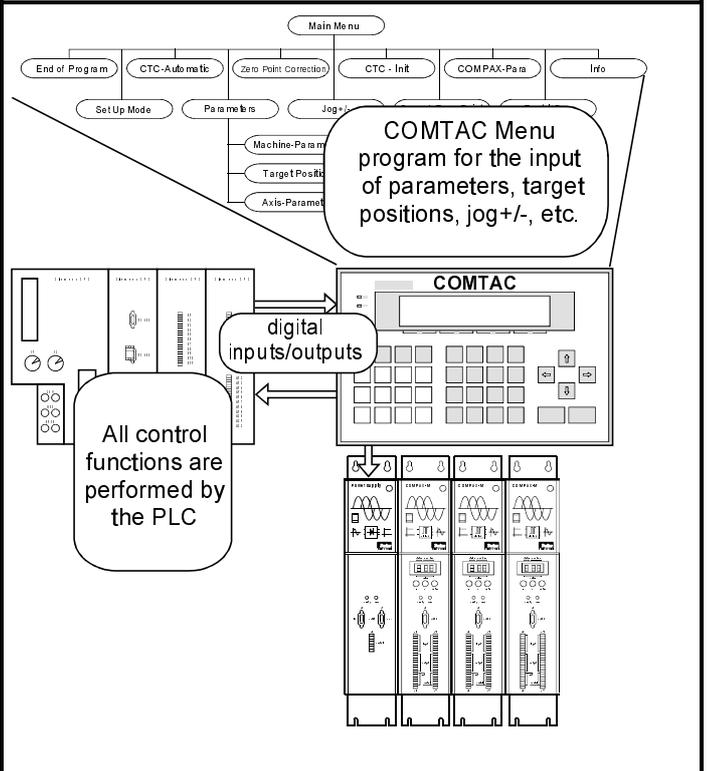
Technician in automation who uses a system of COMTAC and COMPAX

The menu structure is already programmed. The automatic mode and the set up mode, if necessary, are programmed using the available modules for communication with COMPAX.



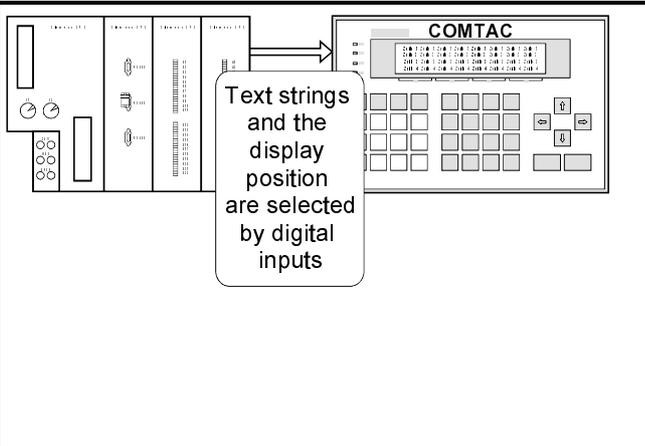
PLC programmer who uses a system of COMTAC and COMPAX

COMTAC runs a program to input and store target positions, machine and axis parameters in a look up table. All control functions are programmed in the PLC. Axis commands to COMPAX are sent via the digital inputs and outputs of COMTAC.



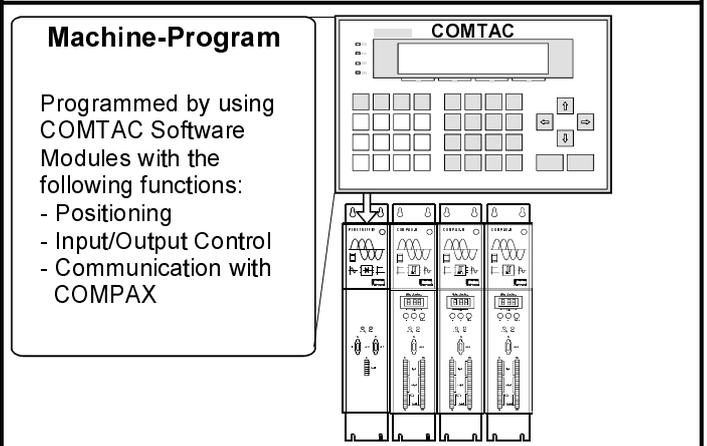
PLC programmer who uses COMTAC for a text display

100 strings can be selected and displayed on the COMTAC display using the digital inputs.



Basic programmer who uses a system of COMTAC and COMPAX

The menu structure and the automatic mode is programmed in BASIC language using existing modules. This simplifies the programming operation.



Interrupt facilities

Interrupt Sources

COMTAC operates with 48 different interrupt sources:

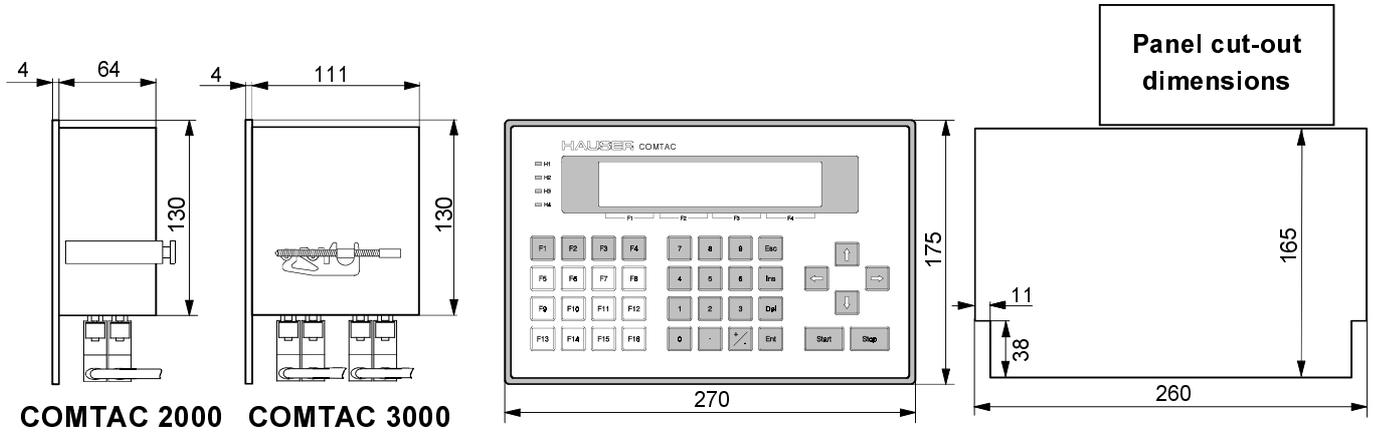
Source	Interrupt service statement	Description
Error	ONERR GOTO/GOSUB	COMTAC system error
COMPAX-Error	ONCPXERR GOTO/GOSUB	A COMPAX device connected via field bus to COMTAC reports an error or a warning.
Emergency Stop input (EMY_STOP)	ONEMY GOTO/GOSUB	The programmed transition on the Emergency Stop input occurred.
Timer	ONTIMER value, target line.	The BASIC timer reached the programmed preset value.
COMTAC key board	ONKBD GOTO/GOSUB	A key has been pressed or was released.
RS232/0-interface	ON#0 GOTO/GOSUB	According to the interface protocol, characters have been received and the flag "Input-Rdy" in the control register STSCTR#0 was set.
RS485/1-interface	ON#1 GOTO/GOSUB	According to the interface protocol, characters have been received and the flag "Input-Rdy" in the control register STSCTR#1 was set.
RS232/2-interface	ON#2 GOTO/GOSUB	According to the interface protocol, characters have been received and the flag "Input-Rdy" in the control register STSCTR#2 was set.
RS485/3-interface (Option F6)	ON#3 GOTO/GOSUB	According to the interface protocol, characters have been received and the flag "Input-Rdy" in the control register STSCTR#3 was set.
RS232/4-interface (Option F6)	ON#4 GOTO/GOSUB	According to the interface protocol, characters have been received and the flag "Input-Rdy" in the control register STSCTR#4 was set.
RS485/5-interface (not currently available)	ON#5 GOTO/GOSUB	According to the interface protocol, characters have been received and the flag "Input-Rdy" in the control register STSCTR#5 was set.
Real time clock (RTC)	ONTIME GOTO/GOSUB	The RTC time is equal to or greater than the programmed preset value.
Ready input (RDY)	ONRDY GOTO/GOSUB	The Ready input has been activated.
Key switch (KEYSWITCH)	ONKEY 19 GOTO/GOSUB	The key switch has been closed or opened.
Function key 1 to 18	ONKEY x GOTO/GOSUB	The specified key has been pressed
Digital inputs 1 to 16	ONINP GOTO/GOSUB	The specified input has been activated

Interrupt Priority

- ◆ An error interrupt always has the highest priority (9). An error interrupt program cannot be interrupted.
- ◆ Other Interrupt sources can be set to a priority level from 1/(lowest) to 8/(highest).
- ◆ A higher priority interrupt can interrupt a lower priority interrupt.
- ◆ An interrupt subroutine cannot be interrupted by another interrupt with the same level
- ◆ After power on, all interrupt sources have the same level of 1 except the error interrupt/(9).

Dimensions

Dimensions of COMTAC 2000 and COMTAC 3000



Floppy Disk Drive HFM2

EMC compliant floppy disk drive (two drives) with ASCII RS232 for industrial use.

Technical data

Drives

- ◆ 2 x 3½"
- ◆ 720 KByte / 1,44 MByte.

RS232 interface

- ◆ up to 38 400 Baud
- ◆ 8 Data bits.

Mounting:

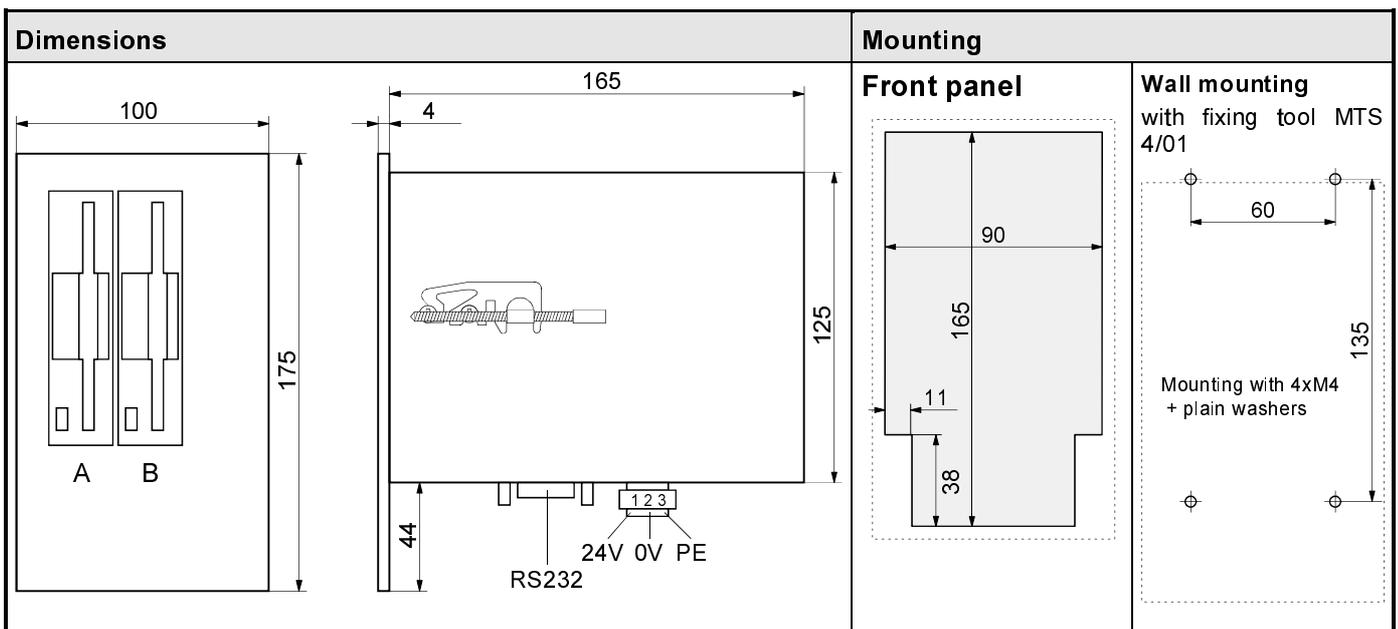
- ◆ Front panel mounting
- ◆ Wall mounting.

For industrial use

- ◆ EMC compliant: EN50082-2.

Used in combination with

- ◆ COMTAC 2000
- ◆ COMTAC 3000
- ◆ any controller with an RS232 interface



Technical Data

Features

Technology

- ◆ Compact unit for front panel or cabinet mounting.
- ◆ Supply voltage: 24V DC $\pm 10\%$ / 0,6A.
Fuse: 1,0AT.
- ◆ External key switch
- ◆ Protection class of front panel: IP65.
- ◆ Numeric and function keys
- ◆ Individual labelling of the function keys
- ◆ Custom specific device labelling.
- ◆ Illuminated LCD panel (4x40 characters).
- ◆ RAM:
 - ◆ COMTAC 2000: 128kByte (56kByte for Data).
 - ◆ COMTAC 3000: 320kByte (56kByte for Data).
- ◆ Nonvolatile RAM (ZPRAM) to store programs and data: 128kByte.
- ◆ EMC compliant: EN50082-2.
ESD: IEC801-2; Burst: IEC801-4.

Programming

- ◆ With a terminal (e.g. VT100)
or
- ◆ with the COMTAC Programming Tool which runs under DOS.

Interfaces

- ◆ digital inputs (24V)

COMTAC 2000	COMTAC 3000
16	32

- ◆ digital outputs (24V)

COMTAC 2000	COMTAC 3000
16 each rated at 100mA or 300mA (Option I2).	32 each rated at 100mA or 300mA (Option I2).

- ◆ 3 analogue inputs: 0...10V,
-10V...+10V and
0...5V.
- ◆ 2 analogue outputs: -10V...+10V (Option D2).
- ◆ 2xRS232 interfaces.
- ◆ 1xRS485 interface 2/4 wire.
- ◆ Optional additional RS232 and RS485 interface (Option F6).
- ◆ Sub-D connectors for all inputs and outputs.

Command Summary

- ◆ Independent programmable controller with optimised commands for control functions.
The commands are described in the "Command Description".
- ◆ Free access to all inputs and outputs.
- ◆ Interrupt capability for interfaces and inputs; extensive logical functions for inputs and outputs.
- ◆ Programmable LCD display.

COMTAC as a Multi Axis Controller for COMPAX

- ◆ Field bus protocol using the RS485 interface for enhanced controller functions.

Shipping contents

- ◆ COMTAC.
- ◆ Documentation:
 - ◆ Device description.
 - ◆ Command description
- ◆ Diskette with the MENU program.
- ◆ X7 connector.

Options

- ◆ Option I2: for 16 digital 300mA outputs.
This option replaces the 100mA outputs.
- ◆ Option D2: 2 analogue outputs: -10V...+10V.
- ◆ Option F6: Additional RS232 and RS485 interface.

Accessories

- ◆ PC-Software: COMTAC Programming Tool.
- ◆ Floppy disk drive HFM2
- ◆ RS232 cable SSK1. Lengths: [m] 1; 2,5; 5; 7,5; 10; 15; 20.
- ◆ RS485 cable SSK13. Lengths [m] 1; 2,5; 5; 7,5; 10; 15; 20; 25; 35.
- ◆ Clamp module EAM3 with cable. Lengths [m] 1; 2,5; 5; 7,5; 10; 15; 20; 25; 35.



Head Office:

Parker Hannifin GmbH
EMD HAUSER-
P.O. Box: 77607-1720
Robert-Bosch-Str. 22
D-77656 Offenburg
phone (0781) 509-0 fax (0781) 509-176

Parker Hannifin plc
EMD-Digiplan
21 Balena Close
Poole, Dorset
England. BH17 7DX
phone: (01202) 690911
fax: (01202) 600820