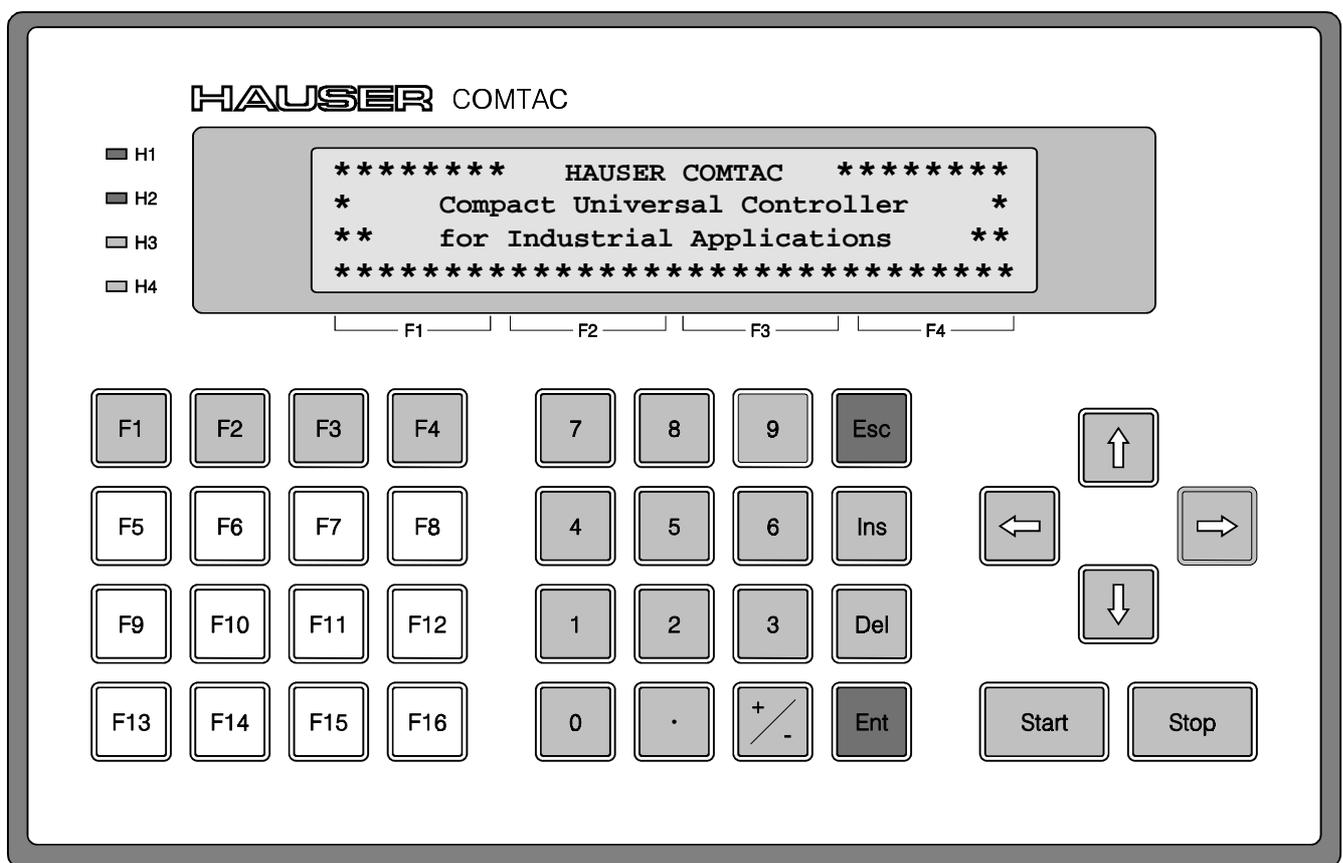


Device Description

Compact Industrial Computer



From Software version V2.00

February 98

HAUSER
We automate motion



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Conditions

- in conformance with CE-regulations in the field of trade and industry -

This product complies with the CE-regulations in respect of electro-magnetic compatibility (89/336/EWG) and concerning electrical equipment meant for use within certain voltage limits (73/23/EWG), provided the following conditions apply:

- ◆ **Devices may only be operated in their original state at the time of delivery.**
- ◆ **All connection cables must be 360°-shielded at each end.**
- ◆ **Laying of cables**
 - ◆ Signal lines and power-lines must be separated as far as possible.
 - ◆ Signal lines must never pass strong sources of interference (motors, transformers, contactors, etc.).
- ◆ **Accessories**
 - ◆ Please only use accessories recommended by HAUSER.

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This documentation applies to the following units:

COMTAC 2000
COMTAC 3000

HAUSER name plate



Further documents:

- ◆ Description of the programming language (BASIC).
- ◆ Operating instructions for the Programming Tool.

1. Summary

COMTAC 2000 is an easily programmable industrial computer, suitable for general control operations.

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

1.1 General

General

- ◆ Compact unit suitable for front panel mounting and for building into standard industrial switch cabinets.
- ◆ Standard protection: IP65 (front panel).
- ◆ Numeric 0 and easily programmable function keys.
- ◆ Illuminated LCD panel (4x40 characters).
- ◆ RAM for user programs and variables:
 - ◆ COMTAC 2000: 128kByte.
 - ◆ COMTAC 3000 320kByte.
- ◆ Nonvolatile RAM (ZPRAM) to store programs and data: 128kByte.

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.

Two basic Uses for COMTAC:

- ◆ COMTAC - as an universal industrial computer.
- ◆ COMTAC - as a compact multi-axis controller for COMPAX Servo Controllers.

LEDs of the COMTAC key board:

Can be programmed by the user.

Programming

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

1.2 COMTAC- universal Industrial Controller

- ◆ Simple programming in BASIC language with BASIC interpreter and optimized control commands. The commands are described in a separate document.
- ◆ Inputs and outputs are easy to program.
- ◆ Powerful input - output control logic.
- ◆ LCD-display - Easy to program.
- ◆ Custom labelling.
- ◆ User defined function keys.
- ◆ Two RS232 interfaces to connect to other equipment:
 - ◆ Host interface: e. g. for a PC or Terminal, to download programs or data.
 - ◆ Printer, floppy disk drive.
 - ◆ A third RS232 is available with option F6.
- ◆ RS485 interface
 - ◆ Two or four wire RS485 with ASCII protocol for up to 31 devices.
 - ◆ A second RS485 interface is available with option F6.

1.3 COMTAC - compact Multi-Axis Controller

The first RS485 interface can run a field bus protocol which is used in combination with COMPAX digital axis controllers.

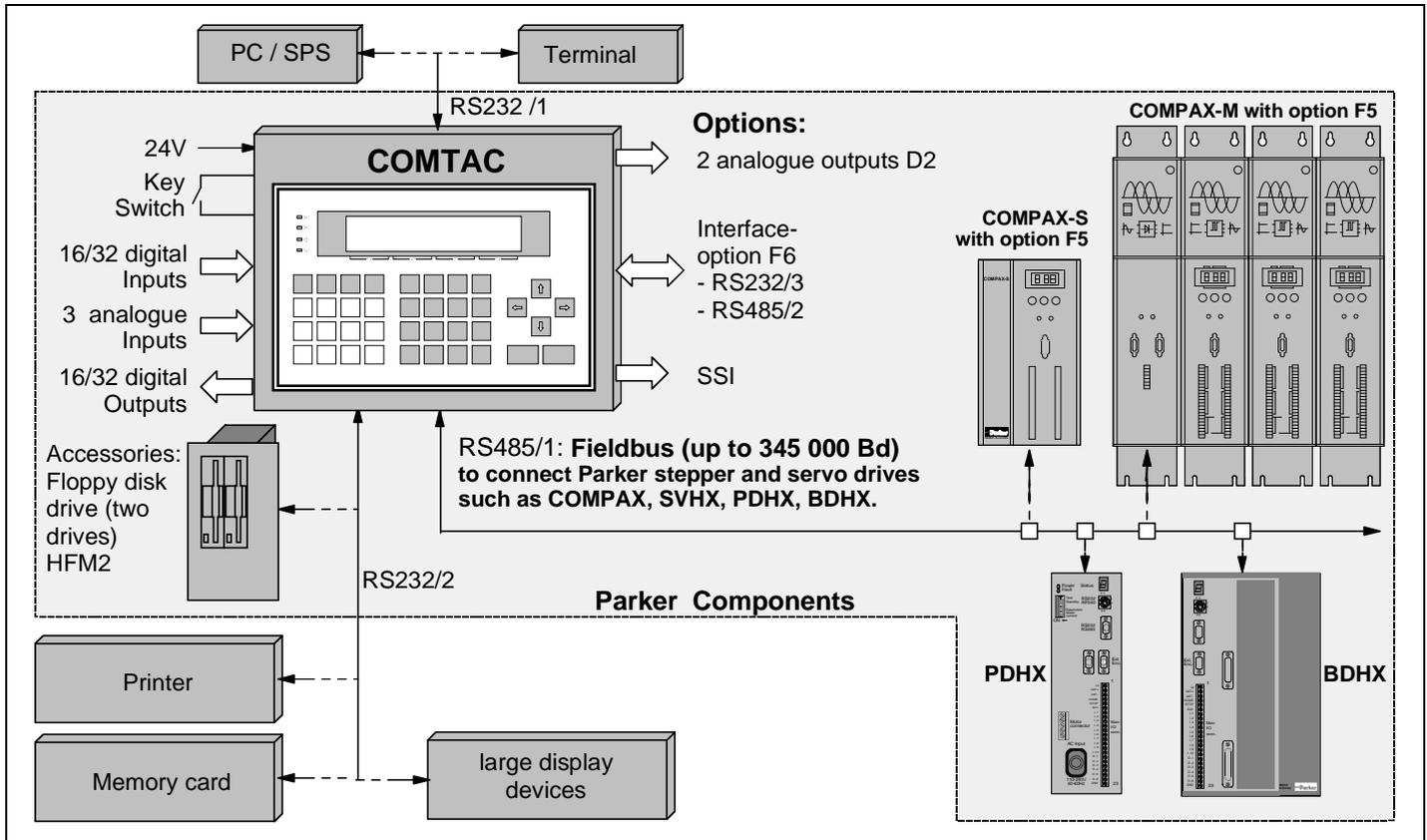
1.4 Set Up Software

To set up a system consisting of COMTAC and COMPAX there is a BASIC program available/(see page 15). This program is menu driven.

The functions are:

- ◆ Select the display,
- ◆ Set up the COMPAX drives,
- ◆ Output commands to the COMPAX drives
- ◆ Display and edit the COMTAC and COMPAX parameters.

2. COMTAC - a universal Industrial Controller



2.1 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.

2.2 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 the option F6). All can be programed by the user.
- ◆ Two RS485 interfaces (one with the 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.

2.2.1 User Interface

COMTAC offers a man - machine interface (MMI) with an easily programmable LCD-display (4 lines, 40 characters) and function keys programmable for all industrial requirements. Clean front panel design gives the user clear control management.

2.2.2 HOST Interface

Communication can be made with a higher level controller through the RS232 Host Interface of COMTAC 2000. Alternatively a terminal or a PC can be used.

2.2.3 RS232 Interface

The universally employed RS232 interface can be used for printers (protocol-printout, hard copy of the BASIC-source Codes etc.) or for connecting to storage media (floppy, memory card, etc.). In addition it can be used as an easily programmable interface connection for larger display devices.

2.2.4 RS485 Interface

With this interface COMTAC can operate with up to 31 bus devices. Typically connected here would be HAUSER - COMPAX - Servo controllers. The function is described in a separate document (command instruction).

Reference during an application with COMTAC, field-bus (option F5) and COMPAX:

Previous adjustment: P196=164

When using

- ◆ F5 (2 wire-RS485) Software \geq V1.22 and

- ◆ COMPAX - Version > V2.0

P196 has to be adjusted to 165.

2.2.5 Input and Output Signals

- ◆ 16/32 digital inputs and outputs (PLC voltage levels);
Optional outputs with 300mA.

- ◆ Three analogue inputs (0...5V; 0...10V; -10...+10V).

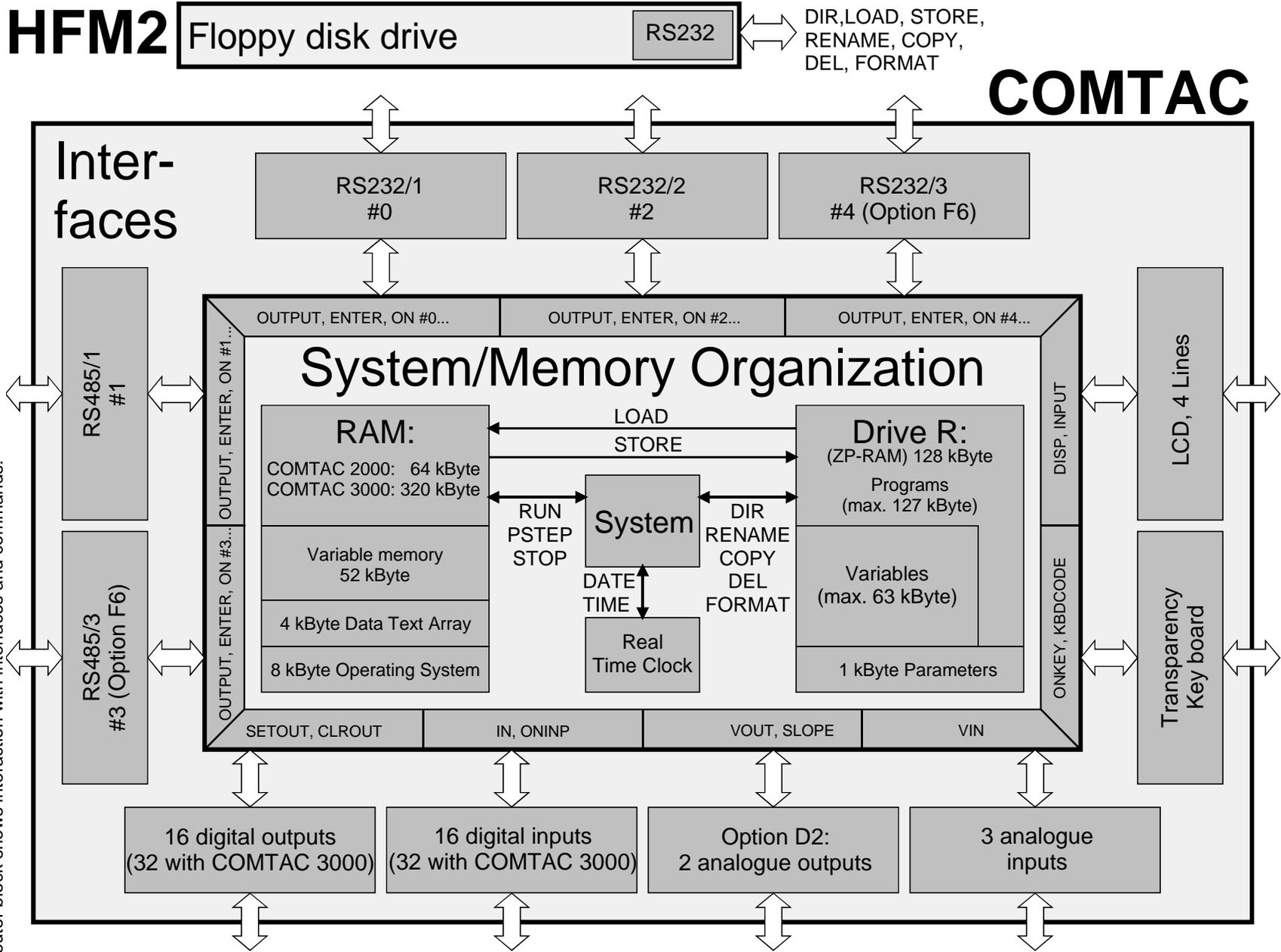
Two optional analogue outputs (-10V...+10V / Option D2) with a linear ramp function.

2.2.6 Additional Functions

Two slots are available for custom specific applications.

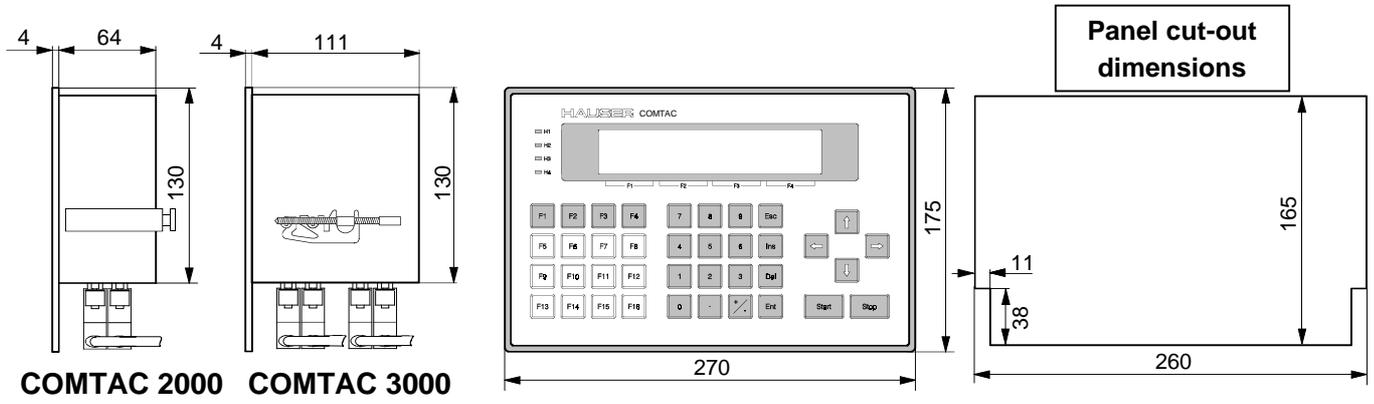
3. COMTAC Structure

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.



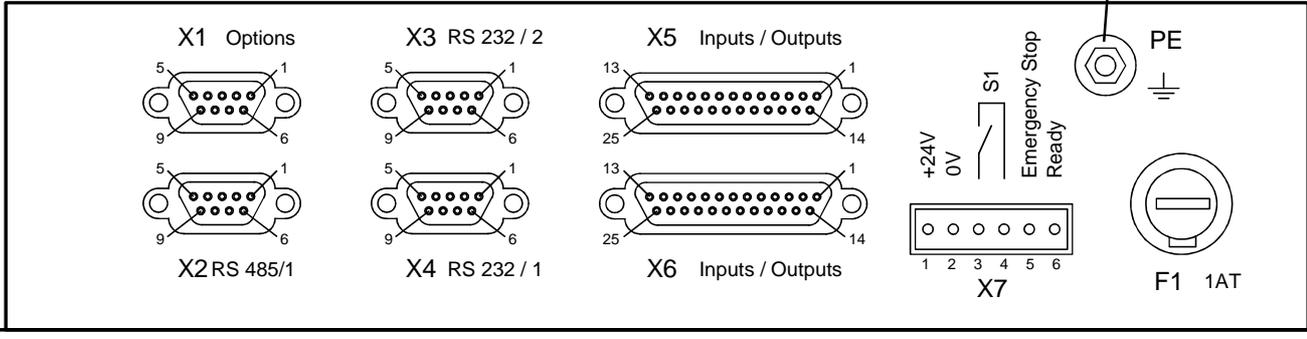
4. COMTAC Technical Data

4.1 Dimensions of COMTAC



4.2 Pin Assignment

4.2.1 Pin assignment COMTAC 2000:



X6: I1-I8, O1-O8	
Pin	Function
1	+24V (supply voltage *1)
2	O1
3	O2
4	O3
5	O4
6	O5
7	O6
8	O7
9	O8
10	GND24V
11	Shield
12	ANI1 (-10V...10V)
13	ANI2 (0...10V)
14	+24V (supply voltage *1)
15	I1
16	I2
17	I3
18	I4
19	I5
20	I6
21	I7
22	I8
23	GND24V
24	ANO1 (Option)
25	ANO2 (Option)

X5: I9-I16, O9-O16	
Pin	Function
1	+24V (supply voltage *1)
2	O9
3	O10
4	O11
5	O12
6	O13
7	O14
8	O15
9	O16
10	GND24V
11	shield
12	GND
13	+5V
14	+24V (supply voltage *1)
15	I9
16	I10
17	I11
17	I12
19	I13
20	I14
21	I15
22	I16
23	GND24V
24	reserved
25	ANI3 (0...5V)

X4: RS232/1	
Pin	Function
1	reserved
2	RXD0
3	TXD0
4	DTR0
5	GND
6	reserved
7	RTS0
8	CTS0
9	+5V

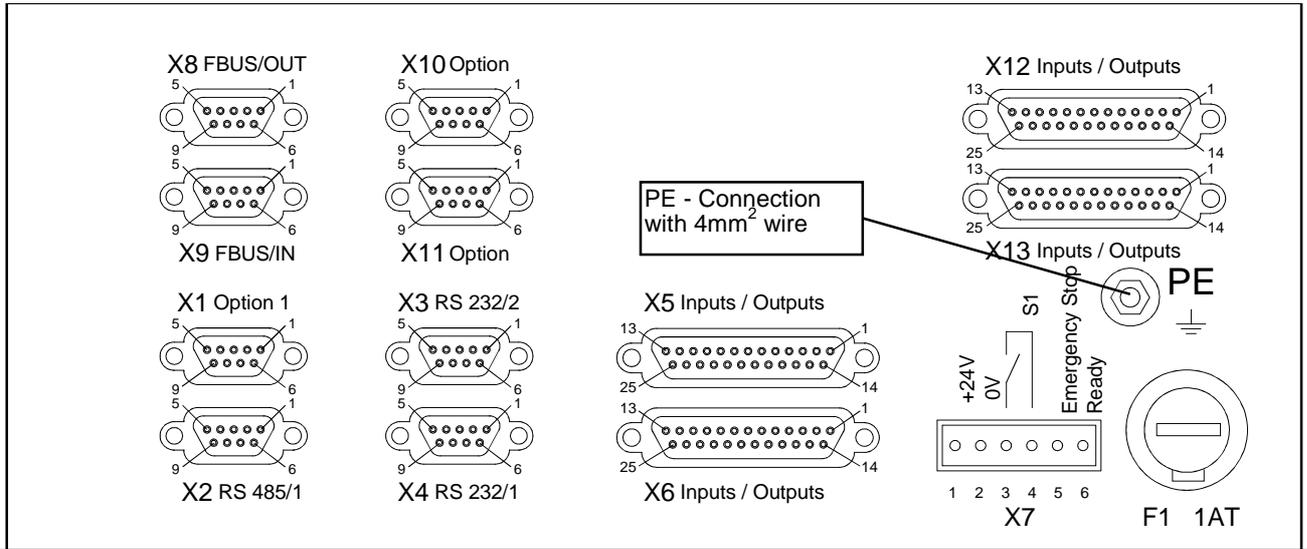
X2: RS485/1	
Pin	Function
1	RXD1
2	TXD1
3	GND
4	reserved
5	reserved
6	RXD1/
7	TXD1/
8	reserved
9	reserved

X3: RS232/2	
Pin	Function
1	reserved
2	RXD2
3	TXD2
4	DTR2
5	GND
6	reserved
7	RTS2
8	CTS2
9	+5V

X1:RS232/3, RS485/2 (Option F6)	
Pin	Function
1	TXD3
2	RXD4
3	TXD4
4	RXD3
5	GND
6	TXD3/
7	RTS4
8	CTS4
9	RXD/3

*1) These pins are only used to supply the digital outputs, not COMTAC itself. All pins must be used.
(X6/1, X6/10 X6/14, X6/23, X5/1, X5/10 X5/14, X5/23)

4.2.2 Pin Assignment COMTAC 3000:



X6: I1-I8, O1-O8	
Pin	Function
1	+24V (supply voltage *1)
2	O1
3	O2
4	O3
5	O4
6	O5
7	O6
8	O7
9	O8
10	GND24V
11	Shield
12	ANI1 (-10V...10V)
13	ANI2 (0...10V)
14	+24V (supply voltage *1)
15	I1
16	I2
17	I3
18	I4
19	I5
20	I6
21	I7
22	I8
23	GND24V
24	ANO1 (Option)
25	ANO2 (Option)

X5: I9-I16, O9-O16	
Pin	Function
1	+24V (supply voltage *1)
2	O9
3	O10
4	O11
5	O12
6	O13
7	O14
8	O15
9	O16
10	GND24V
11	shield
12	GND
13	+5V
14	+24V (supply voltage *1)
15	I9
16	I10
17	I11
18	I12
19	I13
20	I14
21	I15
22	I16
23	GND24V
24	reserved
25	ANI3 (0...5V)

X13: I17-I24, O17-O24	
Pin	Function
1	+24V (supply voltage *1)
2	O17
3	O18
4	O19
5	O20
6	O21
7	O22
8	O23
9	O24
10	GND24V
11	shield
12	GND5V
13	n. c.
14	+24V (supply voltage *1)
15	I17
16	I18
17	I19
18	I20
19	I21
20	I22
21	I23
22	I24
23	GND24V
24	ANO1 (Option)
25	ANO2 (Option)

X12: I25-I32, O25-O32	
Pin	Function
1	+24V (supply voltage *1)
2	O25
3	O26
4	O27
5	O28
6	O29
7	O30
8	O31
9	O32
10	GND24V
11	shield
12	GND5V
13	+5V
14	+24V (supply voltage *1)
15	I25
16	I26
17	I27
18	I28
19	I29
20	I30
21	I31
22	I32
23	GND24V
24	reserved
25	reserved

*1) These pins are only used to supply the digital outputs, not COMTAC itself. All pins must be used.

(X6/1, X6/10 X6/14, X6/23, X5/1, X5/10 X5/14, X5/23 X13/1, X13/10 X13/14, X13/23, X12/1, X12/10 X12/14, X12/23)

X4 (RS232/1)	
Pin	Function
1	reserved
2	RXD0
3	TXD0
4	DTR0
5	GND
6	reserved
7	RTS0
8	CTS0
9	+5V

X2 (RS485/1)	
Pin	Function
1	RXD1
2	TXD1
3	GND
4	reserved
5	reserved
6	RXD1/
7	TXD1/
8	reserved
9	reserved

X10 (RS485/2)	
Pin	Function
1	RXD3
2	TXD3
3	GND
4	reserved
5	reserved
6	RXD3/
7	TXD3/
8	reserved
9	reserved

X8	
Pin	Function
1	not used
2	
3	
4	
5	
6	
7	
8	
9	

X3 (RS232/2)	
Pin	Function
1	reserved
2	RXD2
3	TXD2
4	DTR2
5	GND
6	reserved
7	RTS2
8	CTS2
9	+5V

X1:RS232/3, RS485/2 (Option F6)	
Pin	Function
1	RXD3
2	RXD4
3	TXD4
4	TXD3
5	GND
6	RXD3/
7	RTS4
8	CTS4
9	TXD3

X11 (RS232/3)	
Pin	Function
1	n. c.
2	RXD4
3	TXD4
4	n. c.
5	GND
6	n. c.
7	RTS4
8	CTS4
9	n. c.

X9	
Pin	Function
1	not used
2	
3	
4	
5	
6	
7	
8	
9	

4.2.3 Connector X7

Supply Voltage to COMTAC

24V DC $\pm 15\%$ / 0,2A.

Switch SW1

Input for a key switch

- ◆ The state of the key switch can be evaluated in the user program.

Emergency Stop / Ready Input

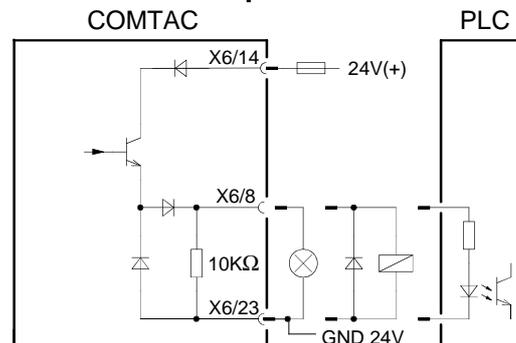
- ◆ The state of these inputs can be evaluated in the user program.

1.	A1...A16	total 1,6A
2.	A1...A4, A5...A8, A9...A12, A13...A16	Per group of four 800mA, but see 1.
3.	A	300 mA per output, but see 1. and 2.

The digital outputs are short circuit protected. In the case of a short circuit an error message occurs.
The digital outputs refer to 24V ground.

➡ The external supply voltage of 24V for the digital outputs must have a separate fuse (X6/14 and X6/23 resp. X6/10 or X5/14 and X5/23 resp. X5/10).

Schematic example for O7



➡ The digital outputs are available with 300mA per output (Option I2).

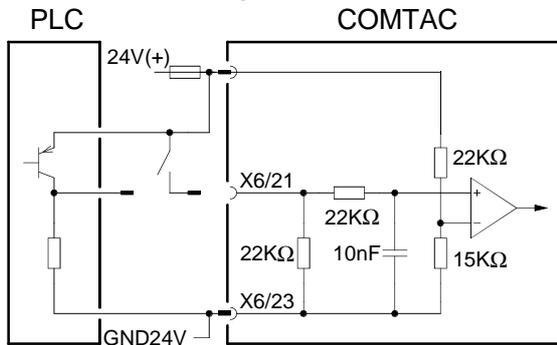
4.2.4 Digital Outputs

Loading of the Digital Outputs:

There are 4 groups with 4 outputs each. The maximum load depends on how many outputs are switched on at the same time. The maximum output current is 100mA if all outputs are switched on. One single output of one group can supply 300mA.

4.2.5 Digital Inputs

Schematic example for I7

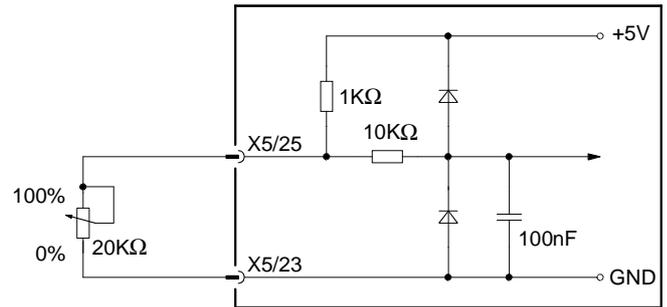


Input level: **logic "1"** >12V, **logic "0"** <12V.

Analogue input 3: 0...+5V

Input resistance: $R_i = 44k\Omega$; Resolution = 20mV.

COMTAC



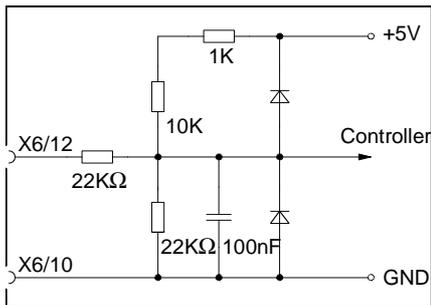
This input can be used to connect to a potentiometer.

➡ Voltages outside the input ranges are limited to the maximum or minimum input voltage.

4.2.6 Analogue Inputs

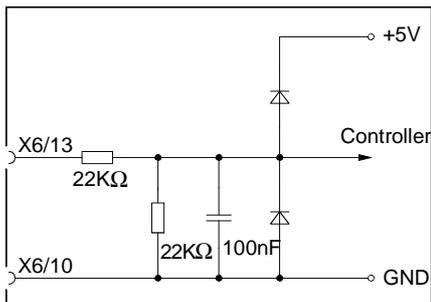
Analogue input 1: -10V...+10V

Input resistance: $R_i = 30k\Omega$; Resolution = 80mV.



Analogue input 2: 0...+10V

Input resistance: $R_i = 44k\Omega$; Resolution = 40mV



4.2.7 Analogue Outputs (Option D2)

Option D2 consists of two analogue outputs in the range -10V to +10V.

Maximum output current: 2,5mA (minimum load = 4kΩ).

Resolution: 12Bit \approx 5mV

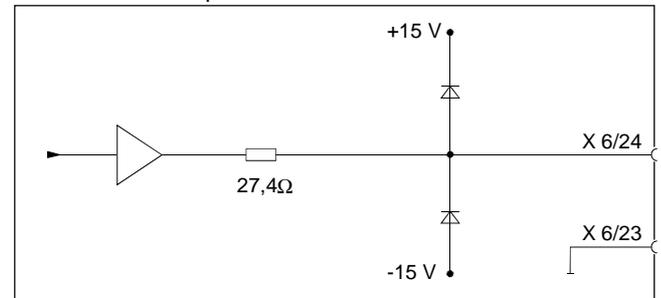
Accuracy: 0,2%

Linearity: 5mV

Short circuit protection against ground

Schematic example of ANO1

Schematics of output 1:



4.3 RS485 - Interfaces

COMTAC is the host for the RS485.

Interface parameters:

Interface:	2 or 4 wire mode
Baud rate:	150 ...345600 Baud
Maximum length of wire: .	1,2km
Number of devices:	up to 31
Address:	0 (host mode)
Bits per character:	8 data bits
Start bit:	1
Stop bit:	1
Parity:	adjustable
Hardware handshake:	none
Software handshake:	XON, XOFF
Time-out function:	can be eanbled/disabled
Block-Check-Character BCC:	can be eanbled/disabled
Input buffer:	256 characters
Output buffer:	256 characters
Data format:	ASCII except BCC
Stop character	adjustable

Operation

See COMTAC "Command Description".

Cable

The interface cable from COMTAC to COMPAX has the following designation: SSK13/...

The pinning of this cable is explained under "Accessories" (see below).

4.4 COMPAX Fieldbus interface

The fieldbus interface runs with a special protocol via the RS485 Hardware. This means that all devices are polled and within a fix time period the input and output bytes of all devices are updated sequentially device by device. This procedure is repeated periodically and is so called the cyclic data exchange. The following data is exchanged:

- ◆ Reading the digital inputs.
- ◆ Reading and describing the digital outputs.
- ◆ Reading the COMPAX status word.
- ◆ Describing the COMPAX control word and the digital inputs.
- ◆ Setting the override value.
- ◆ Reading the actual value.

The exchange of other commands or data is performed by special field bus commands. This procedure is called non cyclic because it happens only at a definite time when a command is executed.

Within the COMTAC Command Description there is a chapter about the field bus.

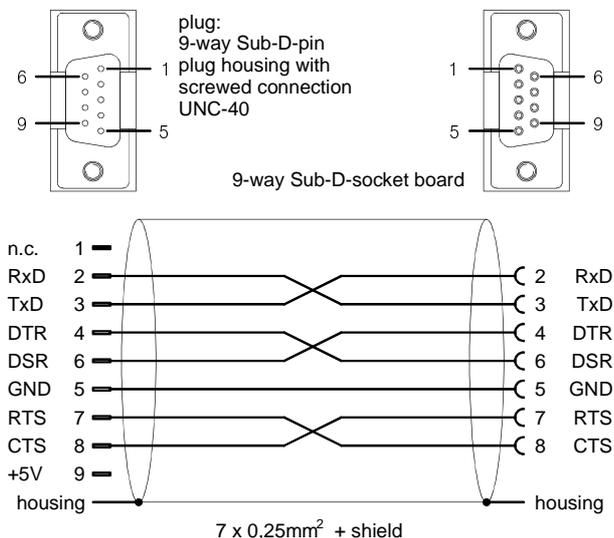
5. Accessories

5.1 PC-Software: "COMTAC Programming Tool"

The DOS program "COMTAC Programming Tool" supports the programming and the file handling.

5.2 RS232 - Cable

5.2.1 SSK1/...: COMTAC - PC/terminal X3 / X4 SSK 1/.. PC / Terminal

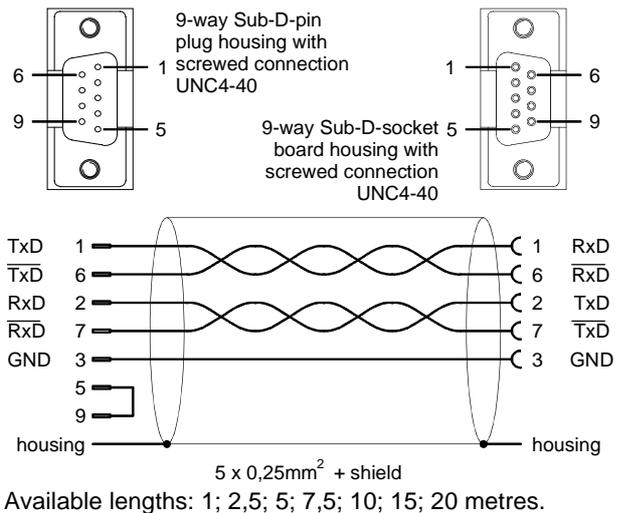


➡ The shield of the cable must be connected at both ends. It is connected to the housing of the plug around the cable.

Available lengths: 1; 2,5; 5; 7,5; 10; 15; 20 metres.

5.3 RS485 Cable

5.2.1 SSK13/ : COMTAC to the first bus device and COMPAX to COMPAX COMTAC X2 SSK 13/.. first bus device



5.4 Floppy Disk Drive HFM2

- Two drives with an RS232 interface for industrial use, EMC compliant

Technical Data

◆ Two drives

- ◆ 2 x 3½ inch,
- ◆ 720 Kbyte / 1,44 MByte.

◆ RS232 interface

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

◆ Mounting:

- ◆ Front panel
- or
- ◆ wall mounting.

◆ For industrial use

- ◆ EMC compliant: EN50082-2.

◆ Protection class: IP20

◆ Supply voltage: 24V DC ±10%

◆ Use together with:

- ◆ COMTAC 2000 ,
- ◆ COMTAC 3000
- ◆ any control with an RS232 interface.

HFM 2 usage

⇒ COMTAC Parameters for the floppy disk interface:

- ◆ CONTROL(10) = Floppy-interface nr.(0,2 or 4)
- ◆ CONTROL(11) = Floppy-Time out value (1 = 100ms)
- ◆ CONTROL(12) = Floppy baudrate

⇒ Commands for the floppy

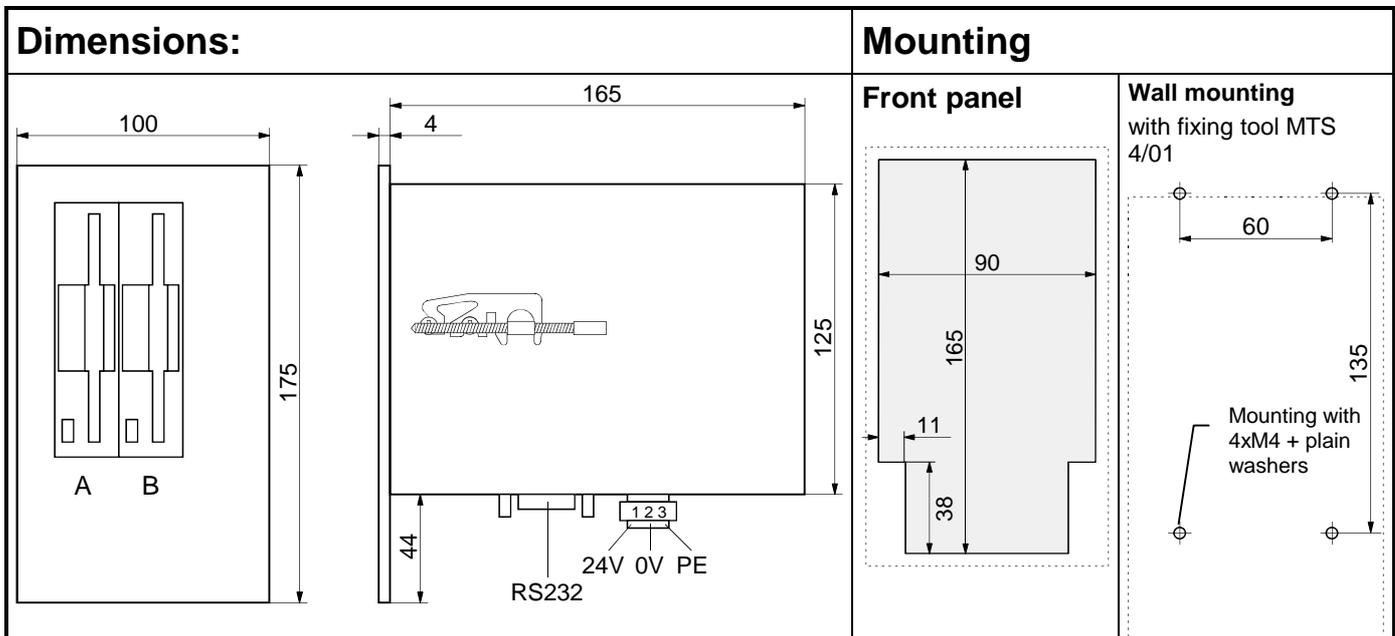
- ◆ FORMAT A:/B:
- ◆ LOAD A:/B: "..."
- ◆ STORE A:/B: "..."
- ◆ DEL A:/B: "..."
- ◆ COPY A: "... TO B:/R: "..."
- ◆ COPY B: "... TO A:/R: "..."
- ◆ COPY A: (copies the disk in drive A to the disk in drive B)
- ◆ RENAME A:/B: "..."
- ◆ DIR A:/B:

All floppy commands can be programed in the user program.

Pin assignment of the RS232 connector:

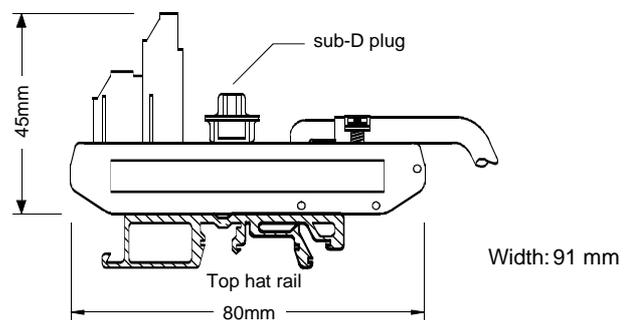
RS232	
Pin	Function
1	reserved
2	RXD2
3	TXD2
4	DTR2
5	GND
6	reserved
7	RTS2
8	CTS2
9	+5V

➔ The cable used is the SSK1 (see page 13).



5.5 Clamp module (EAM)

The clamp module EAM3... is for wiring of the inputs and outputs of COMTAC to other units. This module can be mounted to a hat rail. EAM3... consists of the clamps and a cable (different lengths are available) with a Sub-D-plug to connect to COMTAC.



Assignment of the clamps

The pin assignment corresponds to those of the connectors X5, X6, X12 and X13.

6. COMTAC - Standard Software to set up COMPAX

COMTAC is delivered together with the BASIC program "MENU". This program supports the setting up of the COMPAX devices.

With function key 1 to 4 the different functions can be activated.

The program can be stopped with function key 16.

Line 4 of the LCD is used to display actual information for the soft keys.

The field bus protocol is necessary.

6.1 Setting up the Field Bus

The default values of the COMPAX interface parameters for RS485 are:

- ◆ Device address: P194 = 99.
- ◆ Baudrate P195: = 9600.
- ◆ RS485 mode: P196 = 0.
- ◆ These parameters must be changed in order to use COMPAX with the field bus protocol and COMTAC.
- ◆ Each COMPAX connected to the field bus has to be set up.
- ◆ The interface parameters of COMPAX can be changed with the front panel keys, the hand held terminal BDF2 or a terminal program via the RS232 interface.

Adjustments:

- ◆ Device address: P194 = 1 to 99. 99 is the broadcast address.
- ◆ Baudrate: P195 = 345600.
- ◆ RS485 mode: P196 = 165. (field bus mode)

➡ These values become valid after COMPAX is powered on.

- ◆ After this the COMPAX devices have to be connected to the COMTAC. See users manual for the RS485 option.

➡ Now COMTAC can be switched on. The program MENU starts.

6.2 Main menu

```
MENU V1.00
Choose function with F1-F4, F16=end

display      set up      commands  parameters
```

By pressing one of the four function keys you get into the particular sub menu. The sub menus F1="display" and F2="set up" are directly accessible.

The sub menus F3="commands" and F4="parameters" are password protected. If F3 or F4 is chosen the following request appears:

Password protection

```
Please insert the password: _

Insert the password, confirm with enter
```

The password is a 3-digit numerical code: "302". The password protection is disabled from then on even after "Power-Off / Power-On". With a parameter it is possible to reactivate the password protection (see menu "parameters" axis A00).

6.3 "Display" menu for choosing status information

```
display A01:  → none
               actual position
               target position
Move cursor, insert number if necessary, press ENT
```

Number of axis "A01" means: The selection refers to the device with device address 01 (all values from 01 up to 99 are eligible).
In the following the "Cursor Down" key is pressed three times:

```
display A01:   none
               → actual position
               target position
Move cursor, insert number if necessary, press ENT
```

```
display A01:   none
               actual position
               → target position
Move cursor, insert number if necessary, press ENT
```

```
display A01:   actual position
               target position
               → following error
Move cursor, insert number if necessary, press ENT
```

After pressing "Cursor Up" twice:

display A01: → actual position
 target position
 following error
 Move cursor, insert number if necessary, press ENT

By pressing the "enter" key one line of the status display is defined.
 Definition of the display line numbers (1,2,3) (insertion with →):

display A01: → actual position in line_
 target position
 following error
 Move cursor, insert number if necessary, press ENT

A maximum of 3 simultaneous status values are possible; e.g. for 3 axes the status display may look like the following:

actual position	A01: +1000.00 mm
actual position	A02: +2000.00 mm
speed	A03: +100. %
display	set-up commands parameters

6.4 "Set up" menu to start up the axes

Set up A01: → drive to machine zero
 drive to real zero
 hand operation
 Move cursor, insert number if necessary, press ENT

After pressing "cursor down":

Set up A01: drive to machine zero
 → drive to real zero
 hand operation
 Move cursor, insert number if necessary, press ENT

Following "Enter" axis 1 (A01) drives to the real zero point. It is also possible to change the selected axis: With the numeral keys the axis number 03 can be selected:

Set up A03: drive to machine zero
 → drive to real zero
 hand operation
 Move cursor, insert number if necessary, press ENT

Following "enter" axis 3 moves. Alternatively a hand (jog +/-)operation is possible: Choose this operation mode with "cursor down":

Set up A03: drive to machine zero
 drive to real zero
 → hand operation
 Move cursor, insert number if necessary, press ENT

With "ENT" the hand operation is selected, now moving the axis 03 with the arrow keys "←" and "→" is possible.

Generally the following applies to the set up menu:

With "ENT" the chosen function will be executed. The display changes to the general status display, in this way you can check the actual position.

In the bottom line of the display information on the executed function is displayed, e.g.:

Actual position	A01: +1000.00 mm
Actual position	A02: +2000.00 mm
speed	A03: +100. %
-- A01: drive to machine zero --	

Actual position	A01: +1000.00 mm
Actual position	A02: +2000.00 mm
speed	A03: +100. %
-- A01: hand operation via the arrow keys ← →	

With "ESC" key you return to the "set up" menu.

6.5 "Commands" menu for sending direct commands

command A01: → POSA
 POSR
 SPEED
 Move cursor, insert number if necessary, press ENT

After pressing "cursor down":

command A01: POSA
 → POSR
 SPEED
 Move cursor, insert number if necessary, press ENT

After pressing "cursor down":

command A01: POSA
 POSR
 → SPEED
 Move cursor, insert number if necessary, press ENT

Example to set the speed to 50%:

Select the speed command (cursor up and down). To enter the speed value push arrow key → then insert the number:

command A01: POSA
 POSR
 → SPEED 50
 Move cursor, insert number if necessary, press ENT

The ENTER key executes the selected command. With "Cursor down" (↓) another command can be selected. With "Cursor up" (↑) the POSR command can be selected a second time. All entered values for a command are saved. After selecting the POSR command the target position can be entered. ENTER executes the command:

command A01: POSA
 → POSR 1000.25
 SPEED 50
 Move cursor, insert number if necessary, press ENT

Generally the following applies to the command menu:

The chosen function will be executed by pressing "ENT". The display changes to the status display, there you can check the actual positions.

In the bottom line of the display, information on the executed function will be displayed, e.g.:

Actual position	A01: +1000.00 mm
Actual position	A02: +2000.00 mm
Speed	A03: +100. %
-- A01: drive to machine zero --	

With "ESC" key you return to the "commands" menu.

6.6 "Parameters" menu for modifying parameters

Paramet.A01: → P001=+0.00
real zero point

Move cursor, insert number if necessary, press ENT

After pressing cursor down(↓:)

Paramet.A01: → P002=+10.
standard speed

Move cursor, insert number if necessary, press ENT

By changing the display A01 to A02 the axis number 2 is selected:

Paramet.A02: → P001=+0.00
real zero point

Move cursor, insert number if necessary, press ENT

➡ To activate the new parameters of COMPAX you should go to the "set up" menu and select the command line "activate new parameters".

If A00 is inserted COMTAC switches to its own parameter set:

A00: → P001=+1
software date

Move cursor, insert number if necessary, press ENT

After multiple or continuously pressing of cursor down(↓:)

A00: → P110=+302
password protection

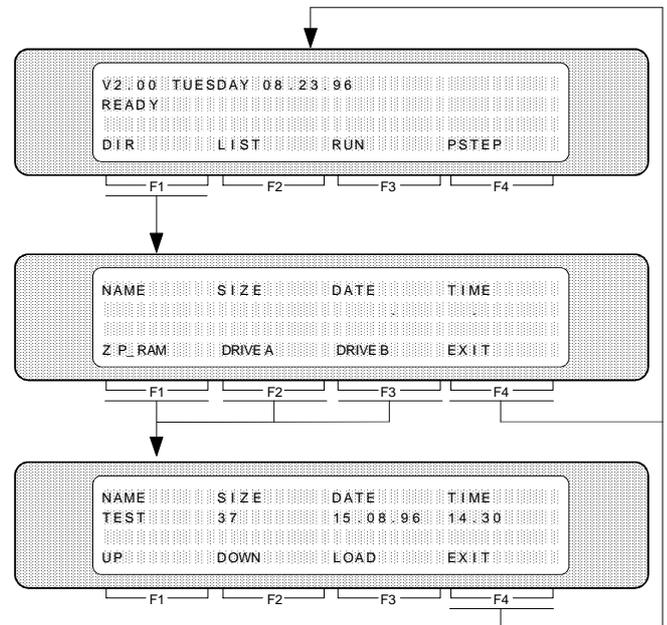
Move cursor, insert number if necessary, press ENT

Moving the cursor to the value of P110 (→), then inserting 270, confirming with ENT will reactivate the password protection. Quit the menu with "ESC" at every time.

Special function: With key sequence → ← the value of the parameters can be inserted directly.

7. COMTAC - Command Mode

After stopping the MENU program with F16 or when switching on COMTAC without an autostart program the command mode is active.



Commands	Function
DIR	Contents of the specified drive (directory)
LIST	List a program The line number for the first line to be listed can be entered.
RUN	Start a program which was previously loaded The line number from which the program should start can be entered.
PSTEP	Single step of the program
UP	Scroll the display up to select a program
DOWN	Scroll the display down to select a program
LOAD	Load a program into the RAM
EXIT	Back to the main menu

8. 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.
- ◆ Programable 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-Programing 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.