

ABSOLUTE CODE COUNTER INF8-ABS

OWNER'S GUIDE



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Vor dem Einschalten

Überzeugen Sie sich, ob Ihre Sendung das richtige Gerät Orbit Controls Modell INF8-ABS beinhaltet, einschliesslich einer Betriebsanleitung INF8-ABS.

Vor dem Einschalten des Gerätes überprüfen Sie die Anschlüsse und die Versorgungsspannung. Ein falsch angeschlossenes Gerät kann beschädigt werden und damit auch die mitverbundene Folgeelektronik. Für falsche Handhabung wird jede Haftung abgelehnt.

ZU BEACHTEN

Dieses Gerät wurde sorgfältig verpackt. Falls es bei Ihnen in beschädigtem Zustand eintrifft, benachrichtigen Sie unverzüglich den Orbit Controls Kundendienst (Tel: +41 1 730 2753 oder Fax: +41 1 730 2783) und nehmen Sie einen Schadenrapport auf, welchen Sie auch von der Transportgesellschaft unterschreiben lassen. Bewahren Sie bitte das Verpackungsmaterial für eventuelle Reklamationen auf.

Unpacking Instructions

Remove the Packing List and verify that you have received all equipment, including the following:

Orbit Controls Model INF8-ABS Programmable Counter.

Operator's Manual INF8-ABS.

If you have any questions about the shipment, please call the Orbit Controls Customer Service Department.

NOTE

When you receive the shipment, inspect the container and equipment for signs of damage. Note any evidence of rough handling in transit. Immediately report any damage to the Orbit Controls customer service, Phone +411 730 2753 or Fax +411 730 2783 and to the shipping agent.

The carrier will not honour damage claims unless all shipping material is saved for inspection. After examining and removing contents, save packing material and carton in event the reshipment is necessary.

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Absolute Code Counter INF8-ABS

- ✓ **Absolute Code Counter**
- ✓ **Gray or Binary**
- ✓ **Parallel or Serial**
- ✓ **Single Turn or Multi Turn**
- ✓ **Wide Scaling Range**
- ✓ **Four Set Point Relays**
- ✓ **Two Analog Outputs**
- ✓ **RS232 or RS485 Outputs**
- ✓ **Mains or DC Supply**



Model INF8-ABS is a 6-digit counter with programmable functions for Absolute Coded Resolvers with Grey or Binary parallel or serial outputs. The INF8-ABS is front-programmable with the keyboard and uses a high speed microcontroller. The standard features are programmable scale multiplication and division with decimal point and sign, independent decimal point of display, averaging filter, preset, four set points, two analog outputs, two serial data ports and selectable measuring mode.

Absolute Coded Resolvers with parallel or serial data outputs can be directly connected. The parallel inputs of the instrument can be set for up to 16 bits Grey or Binary. The serial input is designed for Gray or Binary code with up to 32 bits. The operation mode is programmable from the front keyboard.

Floating Point Arithmetic allows practically unlimited display capacity. The programmed decimal point is automatically positioned when the display arrives at the full range. When, during counting, the decimal point has moved to the right position after the LSD and the display arrives at the maximal count, the display information changes to the exponential expression xxxxE6, xxxxE7 etc.

Preset with 6 digit, sign and decimal point can be programmed over the entire range of the display. Once programmed, the Preset can be entered into the display at any time with the keyboard or the external Preset Input. The display starts counting at the Preset.

Scale of the display permits the display to read in required increments which are determined by the number of bits from the used encoder. If an encoder with e.g. 13 bits is used, the scale has to be set for the maximum count given by the binary combination of the bit number, which is 8191. The scale has 6 digits with decimal point and sign, the division constants can be selected from :1 to :800 000.

Average Filter can be programmed for constants from 1 to 128. It is mainly suitable for applications where the resolver generates pulses in the motionless position due to vibrations of the equipment.

Four Set Points SP1 ... SP4 can be adjusted over the entire display range from 0 ... ± 999999 . The set points activate open collector output transistors or optionally four mechanical relay.

Two serial communication ports RS 232 and RS 485 are optically isolated. The parameters can be selected with the keyboard.

Two analog outputs -10V ... +10V and 0/4 ... 20mA are optically isolated and are present at the output terminals simultaneously. The analog outputs can be set for 0 ... 10V, -10V ... +10V, 0-20mA or 4-20mA. Both analog output limits -10V (0/4mA) and +10V (20mA) can be assigned with the keyboard to any two desired display values. The 12 bit DAC has a resolution of 4096 increments and a reaction time of 1.8ms.

Excitation for supplying of external sensors is isolated from analog outputs and serial data ports. The minus potential is connected to the input GND. The excitation is adjustable with internal potentiometer from 5V/40mA up to 24V/100mA

Memory of the Display measurements during the counter operation can be selected from 100 ms to 10 seconds, or can be switched-off. This feature is build-in for the purpose of detecting the position lost during the resolver and/or the counter have been switched-off from the power. When during power-off the encoder was mechanically displaced (positioned), the display will report a position lost by displaying **ErrPOS** after the power is switched-on again. The counter will display the new correct position corresponding to the output bit combination of the absolute resolver.

FRONTPANEL KEYBOARD



With the five keys at the front the instrument's parameters can be set for the required operation and display mode. The menu steps can be scrolled at the display with the key MENU. The required parameter will be confirmed with SETPTS. The blinking cursor marks the digit which can be changed with MAX and positioned with MIN. To select the sign and the decimal point, the cursor has to be moved outside the display range so that none of the digits is blinking. The required decimal point and the sign can now be set with MAX.

The keys RESET and MIN have following functions:

RESET - terminates the programming mode and starts the measuring mode. If pressed during the measuring mode, the value selected in the menu step OFFSET will be entered into the display.

MIN - resets the display to zero when pressed during the measuring mode.

1 INF8-ABS SPECIFICATIONS

DISPLAY:	0 ... ± 999999, red, 7 segments, 14.7 mm. Free programmable decimal point and sign.		
INPUTS:	Terminals P6:	PARALLEL INPUT PORT:	- Positive Logic 5V CMOS, protected to 28V. Frequency range: 0...100 kHz.
		SERIAL INPUT PORT:	- Standard SSI- RS485 Line Driver with self generating clock.
PRESET:	Display offset programmable from 0 to ± 999999 with decimal point. It can be inserted into the Display with the RESET key. The display starts counting at the OFFSET value.		
ZERO:	Display is forced to zero with the MIN.		
SCALE:	6 digits constant 0 ... 999999 with decimal point and sign. It is a binary expression of the number of bits per revolution of the absolute coded resolver. By using a 16 bit resolver, the SCALE has to be set to 65535.		
dSCALE:	Dividing 6 digit constant free programmable.		
ORDER:	Display resolution, selection of the decimal point.		
FILTER:	Averaging filter with programmable number of measurements from 1 to 128.		
SET POINTS:	Four Set Points with decimal point and sign can be programmed from 0 to ± 999999. They activate open collector transistors 60V/100mA, or optional four mechanical relay 5A-230VAC.		
ANALOG OUT:	Voltage and Current Analog Outputs with 12 bit resolution are generated simultaneously. Voltage Output: -10V ... +10V, Current Output: 0/4 - 20mA. Zero or 4mA can be selected inside the instrument. The outputs are optically isolated by 250V rms. The response time is 1.8 msec.		
DATA PORT:	RS232 and RS485 (4-wire connection). One telegram consists of 8 bits, no parity, 1 start and 1 stop. The baud rate can be selected from 600 to 19200 bd, the address from 0 to 31. Address 0 selects automatically RS232. The serial outputs are optically isolated by max. 250V rms.		
EXCITATION:	Mains powered instruments:	Adjustable Excitation from 5V/40mA to 24V/100mA.	
	DC powered instruments:	Excitation is not available.	
TERMINALS:	Pluggable screw terminals and ribbon cable connector.		
MAINS:	115/230V ±10%, 50-60Hz.		
CASE:	DIN 48 x 96 mm, depth behind bezel 150 mm. Panel cut-out 45x93 mm. IP65 protection from the front.		

2 MENU

The instrument's software contains two menu loops: *MENU* and *HTEST*.

MENU is accessible with the keyboard during the instrument's operation and permits setting of process parameters.

HTEST can be accessed when the power is applied to the instrument (see page 8). This submenu is available for testing, calibration and selection of the operational mode parallel or serial. If parameters have been changed in this menu, they have to be stored with the key SETPTS.

2.1 Menu Steps

Key	Display	Function
MENU	SP 1	Set Point 1 activates the output transistor OC1 or the output Relay SP1.
SETPTS	XXXXXX	Selection with MAX and MIN.
MENU	SP 2	Set Point 2 activates the output transistor OC2 or the output Relay SP2.
SETPTS	XXXXXX	Selection with MAX and MIN.
MENU	SP 3	Set Point 3 activates the output transistor OC3 or the output Relay SP3.
SETPTS	XXXXXX	Selection with MAX and MIN.
MENU	SP 4	Set Point 4 activates the output transistor OC4 or the output Relay SP4.
SETPTS	XXXXXX	Selection with MAX and MIN.
MENU	CntFCE	Counter Function
SETPTS	CirCLE	For Single Turn resolvers. Measurement within one revolution.
	Contin	For Multi Turn Resolvers. Measurement over more revolutions.
MENU	POSSt	Position Test OFF : The position of the encoder is memorized but no statement is generated when the position get lost during the instrument has been switched-off from the supply. Position Test tSt 1 ... tSt 7 : Position Test in time increments from approx. 10s (tSt 1) down to 100ms (tSt 7). When the position get lost during the instrument has been switched-off from the supply, the display shows ErrPOS when the power is switched-on again. The display switches into the measuring mode and shows the position determined by the momentary bit combination. When the position has not been changed during the instrument has been switched-off, the display shortly shows POS FI and switches into the measuring mode.
MENU	SELbit	Bit Selection for Gray or Binary, parallel or serial: Gray or Binary parallel: max. 16 bits Gray or Binary serial: max. 32 bits
MENU	SCALE	Binary expression of the number of bits of the used resolver. For an absolute coded resolver with 16 bits the SCALE has to be set 65535.
SETPTS	XXXXXX	Selection with MAX and MIN.
MENU	dSCALE	Dividing constant for the display.
SETPTS	XXXXXX	Selection with MAX and MIN.
MENU	OFFSEt	Display Offset-Preset.
SETPTS	XXXXXX	Selection with MAX and MIN.
MENU	OrdEr	Display resolution.
SETPTS	XXXXXX	Selection with MAX and MIN from CCCCCC to C.ddddd. Selection in angular mode: hh.nn.SS, mm.SS, mm.SS.d, mm.SS.dd.
MENU	Filter	Active Filter.
SETPTS	XXXXXX	Selection of the Filter Constant: Fil 1 Fil 128.
MENU	Aout L	Display value for Analog Output -10V(0V) and 0/4mA.
SETPTS	XXXXXX	Selection with MAX or MIN.
MENU	Aout H	Display value for Analog Output +10V and 20mA.
SETPTS	XXXXXX	Selection with MAX or MIN.
MENU	bAud	Baud Rate.
SETPTS	XXXXXX	Selection from 1200 to 19200 bd with MAX or MIN.

MENU	Addr	Address of the serial port.
SETPTS	rS 232	Address 0 activates automatically RS232. One of addresses 1-31 activates RS485.
MENU	rS Set	Communication Mode.
SETPTS	XXXXXX	PC SOFT: Request Mode for Supporting Programs, Terminal etc. Con.PC: Cont. transmission with all digits and decimal points as set in OrdEr. One.PC: One telegram only with all digits and decimal points as set in OrdEr. Con.Inf: Cont. Transmission with 6 digit as shown at the instruments display. One.Inf: One telegram only with 6 digit as shown at the instruments display.
MENU	StArt	Measuring mode.

2.2 HTEST

HtEst is a submenu for setting of the type of the absolute code, for testing and calibration purposes. It is activated only when the supply voltage to the instrument is switched-on while the key MENU is pressed. The key has to be kept pressed until the display shows **HtEst**. The key MENU scrolls the menu forward; the key RESET scrolls the menu backward. During the HTEST the display segments are tested, the Set Points activated and the Analog Outputs generated. The type of the absolute code can be set for parallel or serial.

Key	Display	Function
MENU	8.8.8.8.8.8.	The display segments are tested
MENU	SP 1	Relay / Transistor and LED SP1 are activated
MENU	SP 2	Relay / Transistor and LED SP2 are activated
MENU	SP 3	Relay / Transistor and LED SP3 are activated
MENU	SP 4	Relay / Transistor and LED SP4 are activated
MENU	Out -10	-10V (0V)* and 0/4mA are generated at the outputs
MENU	Out -5	- 5V (2.5V)* und 8mA are generated at the outputs
MENU	Out -10	0V (5V)* und 12mA are generated at the outputs
MENU	Out -10	+ 5V (7.5V)* und 16mA are generated at the outputs
MENU	Out -10	+10V und 20mA are generated at the outputs
MENU	Par	Parallel or Serial code can be selected with MAX or MIN. After selection press the key SETPS to store the settings. The display confirms with EESStO.
MENU	End	End of the HTEST submenu.

2.3 SELECTION of ABSOLUTE CODE

SERIAL CODE

Select **SER** in the HTEST and store with SETPS.

Select the type of code Gray or Binary and the number of bits.

Set Jumper at the input PC-Board: Header H4: 1-2, 5-6 and 9-10

Header H7: 1-2, 3-4 and 5-6

Connect the Resolver to the input connector **P4** at the rear, as show at pages 9-10.

PARALLEL CODE

Select **PAR** in the HTEST and store with SETPS.

Select the type of code Gray or Binary and the number of bits.

Set Jumper at the input PC-Board: Header H4: 5-6

Connect the Resolver to the flat cable input connector **P6** at the rear, as show at pages 9-10.

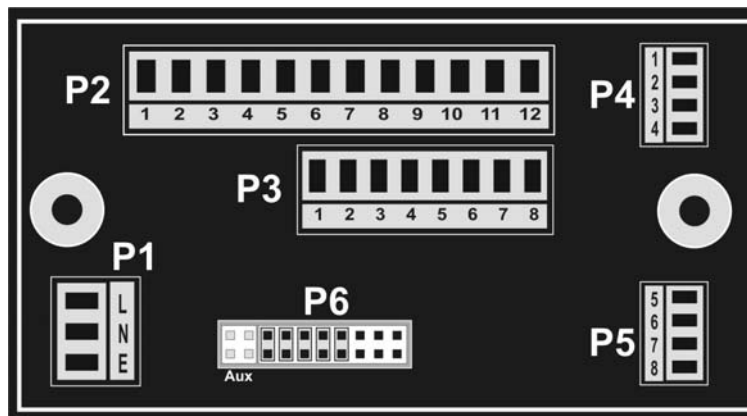
3 SCALE and DSCALE

SCALE is the binary expression for the bit amount per revolution of the used resolver.
A resolver with 12 bit/revolution has the SCALE setting 4095.

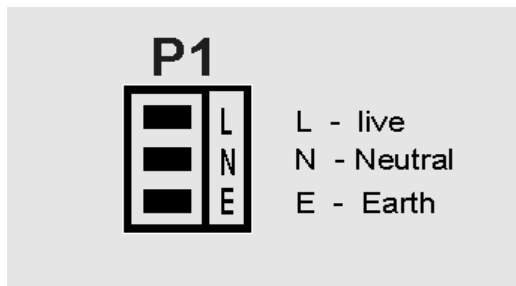
dSCALE is the dividing constant for the SCALE. In most applications is the setting 1.

4 INF8-ABS TERMINALS

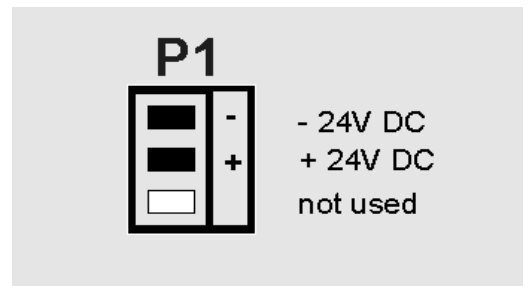
4.1 Rear Side of the Instrument



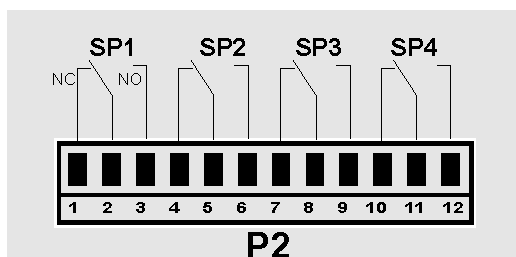
4.2 Terminals P1: Mains Supply



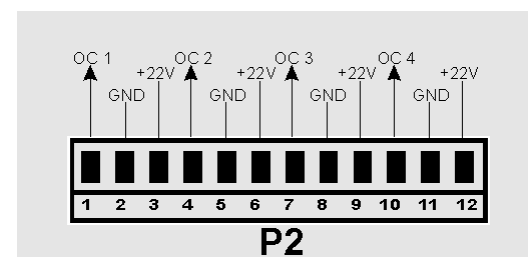
Terminals P1: DC Supply



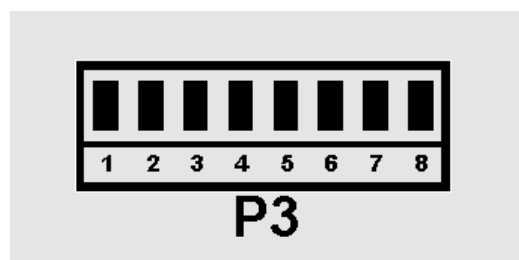
4.3 Terminals P2: Output Relay



Terminals P2: Transistors

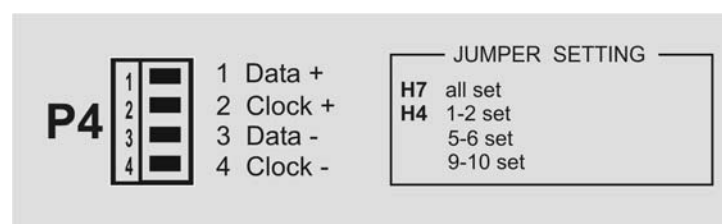


4.4 Terminals P3: Serial Data Ports



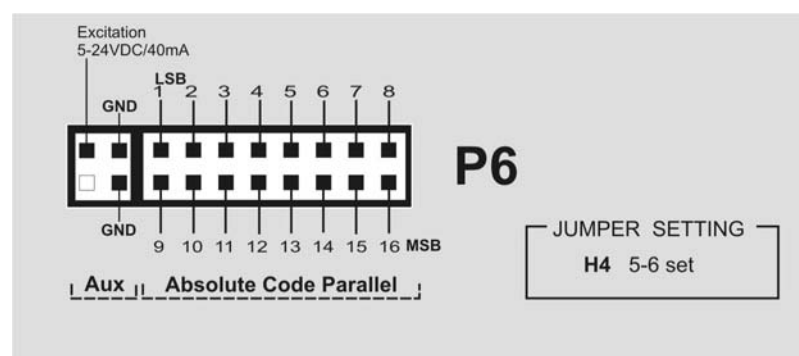
1	RxD	RS232
2	TxD	RS232
3	GND	
4	GND	
5	Non Inverting TxD	RS485
6	Inverting TxD	RS485
7	Non Inverting RxD	RS485
8	Inverting RxD	RS485

4.5 Terminals P4: Inputs for Absolute Serial Resolver



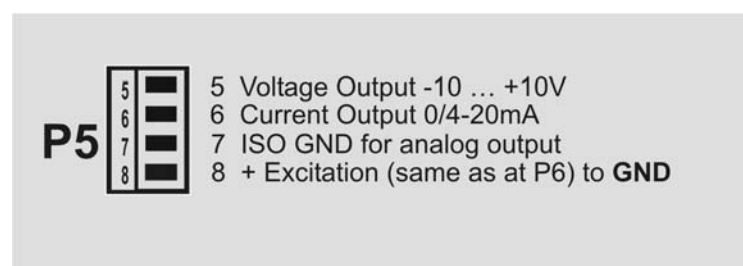
See page 12 for jumper settings

4.6 Terminals P4: Inputs for Absolute Parallel Resolver



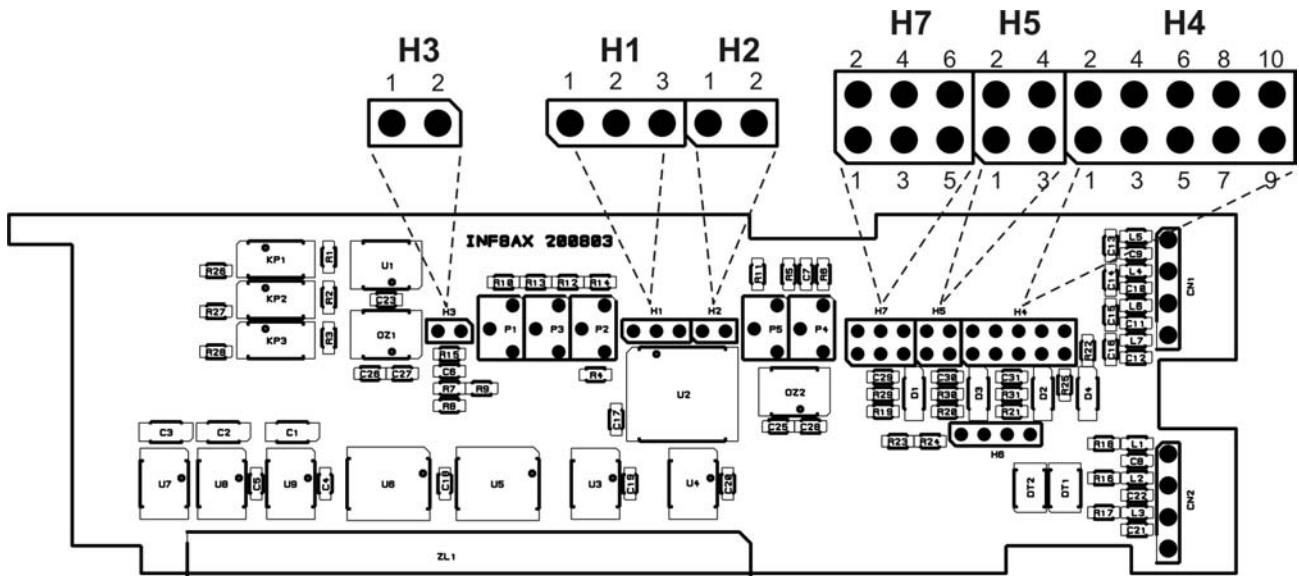
See page 12 for jumper settings

4.7 Terminals P5: Analog Outputs



Voltage Output can be set for 0...+10V or -10...+10V
Current Output can be set for 0-20mA or 4-20mA

5.2 Signal Conditioning Board



5.2.1 Parallel Absolute Code Inputs

The parallel input signals from an absolute code resolver are connected to **P6** terminals, as shown at page 10. The Header at the Signal Conditioning Board **H4** has one Jumper set in position **5-6**.

5.2.2 Serial Absolute Code Inputs

The serial parallel input signals are connected to **P4** terminals, as shown at page 10. The Headers at the Signal Conditioning Board have to be set:

H4 1-2, 5-6, 9-10
H7 1-2, 3-4, 5-6

5.2.3 Analog Outputs

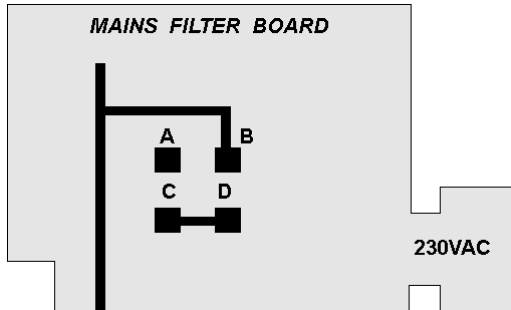
Two analog outputs are generated simultaneously, -10 ... +10V (or 0 ... 10V) and 0/4-20mA. The required output type is selected with jumpers in **H1**, **H2** and **H3** headers at the signal conditioning board INF8AX.

Analog Output Selection and adjusting Potentiometers

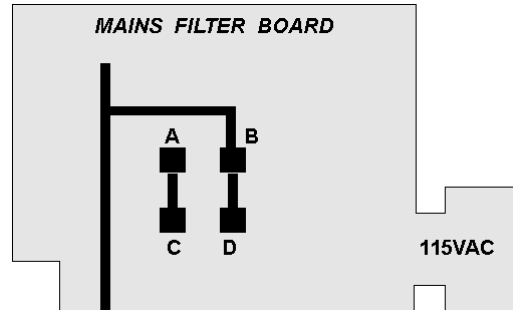
Output	H1	H2	H3	P1	P2	P3	P4	P5
0...10V, 4-20mA	1-2	open	open	4.00mA	20.00mA	+10.00V	---	0.00V fine
0...10V, 0-20mA	2-3	open	closed	0.00mA	20.00mA	+10.00V	---	0.00V fine
-10...+10V, 4-20mA	1-2	closed	open	4.00mA	20.00mA	+10.00V	-10.00V	---
-10...+10V, 0-20mA	2-3	closed	closed	0.00mA	20.00mA	+10.00V	-10.00V	---

5.3 Mains Filter Board

The power supply has been set for 230V AC operation. To change the voltage to 115VAC, change the position of the two runs at the Mains Filter side board, as shown bellow:



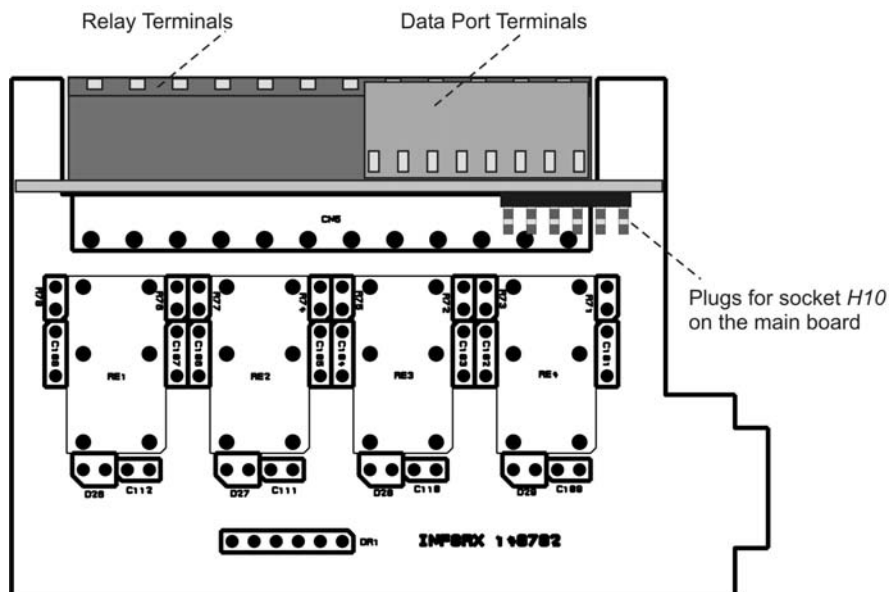
Mains 230VAC: C and D connected



Mains 115VAC: A with C and B with D connected

5.4 Relay Output and Serial Data Port

Serial Data Port and Output Relay build one optional unit which is pluggable into the main board.



5.4.1 Relay Outputs

The output relays have contacts for 5A-230VAC. They are activated when the display is equal or larger than the value set in the menu steps SP1, SP2, SP3, and SP4.

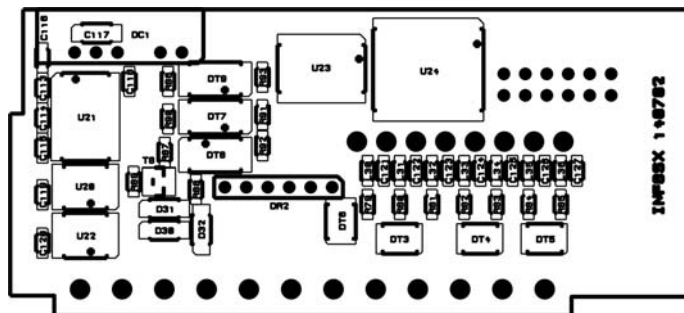
5.4.2 Serial Data Ports

Two data ports are available at the P3 connector: RS 232 and RS 485 (4-wire connection). One telegram consists of 8 bits, no parity, 1 start and 1 stop.

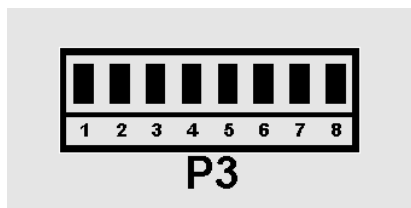
Baud Rate: 600 to 19200 bd

Isolation: 250V rms.

Address: 0 to 31. The address 0 activates RS 232.
One of addresses 01 to 31 activates RS 485.

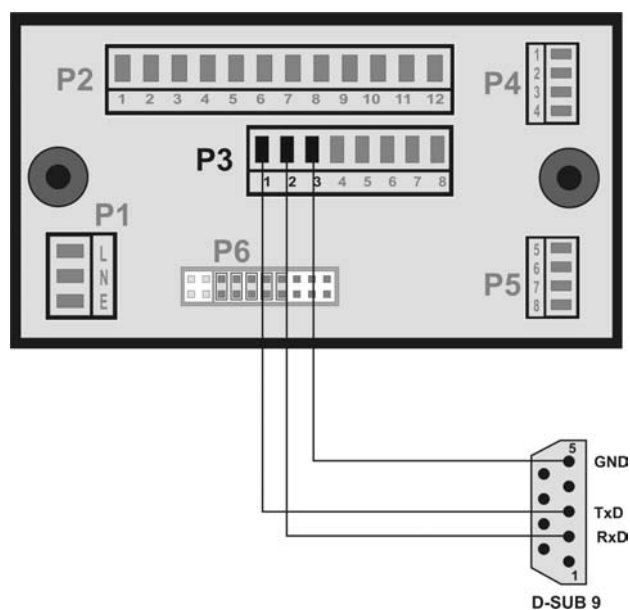


Serial Port Terminals P3



1	RxD	RS232
2	TxD	RS232
3	GND	
4	GND	
5	Non Inverting TxD	RS485
6	Inverting TxD	RS485
7	Non Inverting RxD	RS485
8	Inverting RxD	RS485

5.4.3 Connection via RS 232 to a PC



6 COMMUNICATION

The measured results at the display can be send via the serial data port to a PC, large display, remote display, data acquisition unit or any other type of data receiver. Continuous or Request Transmission can be selected in the menu step ***rS Set***.

6.1 Request Transmission

Set ***PCSOft*** in the menu step ***rS Set***.

The bi-directional serial interface RS232/RS485 permits the transmission of both, the displayed data from the INF8-C to the PC and the control commands from the PC to the INF8-C. To enable the communication, the serial interface card has to be installed inside INF8-C. The data transmission from INF8-C is initiated with the command <CR> <LF> sent from the PC to the INF8-ABS.

6.2 Continuous Transmission

The menu step ***rS Set*** has following possible settings:

- Con.PC*** Continuous transmission with all digits and decimal points as set in OrdEr.
P3-Pin 1 (Rx) has to be set to +10V.
- One.PC*** One telegram only with all digits and decimal points as set in OrdEr.
P3-Pin 1 (Rx) has to receive +10V pulse.
- Con.Inf*** Continuous transmission of only 6 digits as shown at the instruments display.
P3-Pin 1 (Rx) has to be set to +10V.
- One.Inf*** One telegram only with 6 digits as show at the instruments display.
P3-Pin 1 (Rx) has to receive +10V pulse.

6.3 INF8-ABS Soft Manager for Windows

This software package is optionally available at a disk. It permits programming of the INF8-ABS from a PC, setting the operating parameters and transmitting of the displayed results to the PC.

7 PROGRAMMING via SERIAL DATA PORT

Operating.

1. Open IFACE

IFACE mode is set after downloading

'P' + <CR> + <LF> 3 Byte for RS232

or

addr+'P' + <CR> + <LF> 3 Byte for RS485

Inf8 return

IFACE#aa<CR>LF>

Notice 1:

#aa is a string of an integer number, which represent the address of INF8.

For RS232 equal zero, for RS 485 between 01 and 32

If downloading, addr represent the address of INF8, which communicate on RS485.

addr is 1 byte, which is computed as #aa+128.

For RS232 no addr byte is send.

2. Close IFACE

Meas mode is set after downloading

'E' + <CR> + <LF> 3 Byte

Inf8 return

MEAS#aa<CR>LF>

#aa is a string of an integer number, which represent the address of INF8.

For RS232 equal zero, for RS485 between 01 and 32

3. Up load number (In IFACE mode only)

Send command and numbers from Tab1.

INF8 sends the answer immediately after <LF> (see Tab1):

PROM#aa #bb #num<CR>LF>

#aa is a string of an integer number, which represent the address of INF8.

For RS232 equal zero, for RS485 between 01 and 32

and #num is a string of the requested real number such as 1.23456 etc.

4. Down load number (In IFACE mode only)

Send command and numbers from Tab1.

INF8 sends the answer immediately after <LF> (see Tab1):

PROM#aa #bb #num<CR>LF>

#aa is a string of an integer number, which represent the address of INF8.

For RS232 equal zero, for RS485 between 01 and 32

and #num is a string of downloaded number such as 1.23456 etc.

5. Up load select (In IFACE mode only)

Send command and select from Tab1.

INF8 sends the answer immediately after <LF> (see Tab1):

MENU#aa #bb #sel<CR>LF>

#aa is a string of an integer number, which represent the address of INF8.

For RS232 equal zero, for RS485 between 01 and 32

and #sel is a string of requested integer number such as 12 etc.

6. Down load select (In IFACE mode only)

Send the command and the numbers from Tab1.

INF8 sends the answer immediately after <LF> (see Tab. 1):

MENU#aa #bb #sel<CR><LF>

#aa is a string of an integer number, which represent the address of INF8.

For RS232 equal zero, for RS485 between 01 and 32

and #sel is a string of requested integer number such as 12 etc.

Tab. 1.

PCSETTAB	Up Load to INF8	Down Load to PC
SCALE	'N'+0+'1'+<CR>+<LF>	'N'+0+'1'+ ' '+"#num"+<CR>+<LF>
OFFSET	'N'+0+'2'+<CR>+<LF>	'N'+0+'2'+ ' '+"#num"+<CR>+<LF>
SP 1	'N'+0+'3'+<CR>+<LF>	'N'+0+'3'+ ' '+"#num"+<CR>+<LF>
SP 2	'N'+0+'4'+<CR>+<LF>	'N'+0+'4'+ ' '+"#num"+<CR>+<LF>
SP 3	'N'+0+'5'+<CR>+<LF>	'N'+0+'5'+ ' '+"#num"+<CR>+<LF>
SP 4	'N'+0+'6'+<CR>+<LF>	'N'+0+'6'+ ' '+"#num"+<CR>+<LF>
AOUT L	'N'+0+'7'+<CR>+<LF>	'N'+0+'7'+ ' '+"#num"+<CR>+<LF>
AOUT H	'N'+0+'8'+<CR>+<LF>	'N'+0+'8'+ ' '+"#num"+<CR>+<LF>
BAUD	'M'+0+'9'+<CR>+<LF>	'M'+0+'9'+ ' '+"#sel"+<CR>+<LF>
ADDR	'M'+1+'0'+<CR>+<LF>	'M'+1+'0'+ ' '+"#sel"+<CR>+<LF>
ORDER	'M'+1+'1'+<CR>+<LF>	'M'+1+'1'+ ' '+"#sel"+<CR>+<LF>
DSCALE	'N'+1+'2'+<CR>+<LF>	'N'+1+'2'+ ' '+"#num"+<CR>+<LF>
FILTER	'M'+1+'3'+<CR>+<LF>	'M'+1+'3'+ ' '+"#sel"+<CR>+<LF>
SELINF	'M'+1+'4'+<CR>+<LF>	'M'+1+'4'+ ' '+"#sel"+<CR>+<LF>
RSSET	'M'+1+'5'+<CR>+<LF>	'M'+1+'5'+ ' '+"#sel"+<CR>+<LF>
CIRCLE	'N'+1+'6'+<CR>+<LF>	'N'+1+'6'+ ' '+"#num"+<CR>+<LF>
FBASE	'M'+1+'7'+<CR>+<LF>	'M'+1+'7'+ ' '+"#sel"+<CR>+<LF>
OBASE	'M'+1+'8'+<CR>+<LF>	'M'+1+'8'+ ' '+"#sel"+<CR>+<LF>
FNUL	'M'+1+'9'+<CR>+<LF>	'M'+1+'9'+ ' '+"#sel"+<CR>+<LF>

Notice 2: #num is a string of real numbers such as 1.23456 etc.

Notice 3: #sel is a string of integer numbers which correspond to the table bellow Tab. 2....Tab 10.

Tab. 2 #sel	BAUD
0	1200
1	2400
2	4800
3	9600
4	19200
5	39400

Tab. 3 #sel	ADDR
0	RS232
1	01
2	02
.. ..	
30	30
31	31

Tab. 4 #sel	ORDER
0	C.DDDDD
1	CC.DDDD
2	CCC.DDD
3	CCCC.DD
4	CCCCC.D
5	CCCCCC.

Tab. 5 #sel	FILTER
00	OFF
01	FIL 1
02	FIL 2
03	FIL 4
04	FIL 8
05	FIL 16
06	FIL 24
07	FIL 32
08	FIL 48
09	FIL 64
10	FIL 80
11	FIL 96
12	FIL112
13	FIL128

Tab. 6 #sel	selINF
00	QUAD C
01	UPDN C
02	ANGL C
03	QUADSP
04	UPDNSP
05	ANGLSP

Tab. 7 #sel	RSSET
00	PCSOFT
01	RS232

Tab. 8 #sel	FBASE
00	T .100
01	T .200
02	T .500
03	T 1.00
04	T 2.00
05	T 3.00
06	T 5.00
07	T 9.00

Tab. 9 #sel	OBASE
00	T .100
01	T .200
02	T .500
03	T 1.00
04	T 2.00
05	T 3.00
06	T 5.00
07	T 9.00

Tab. 10 #sel	FNNUL
00	OFF
01	NUL-LO
02	NUL-HI
03	SET-LO
04	SET-HI

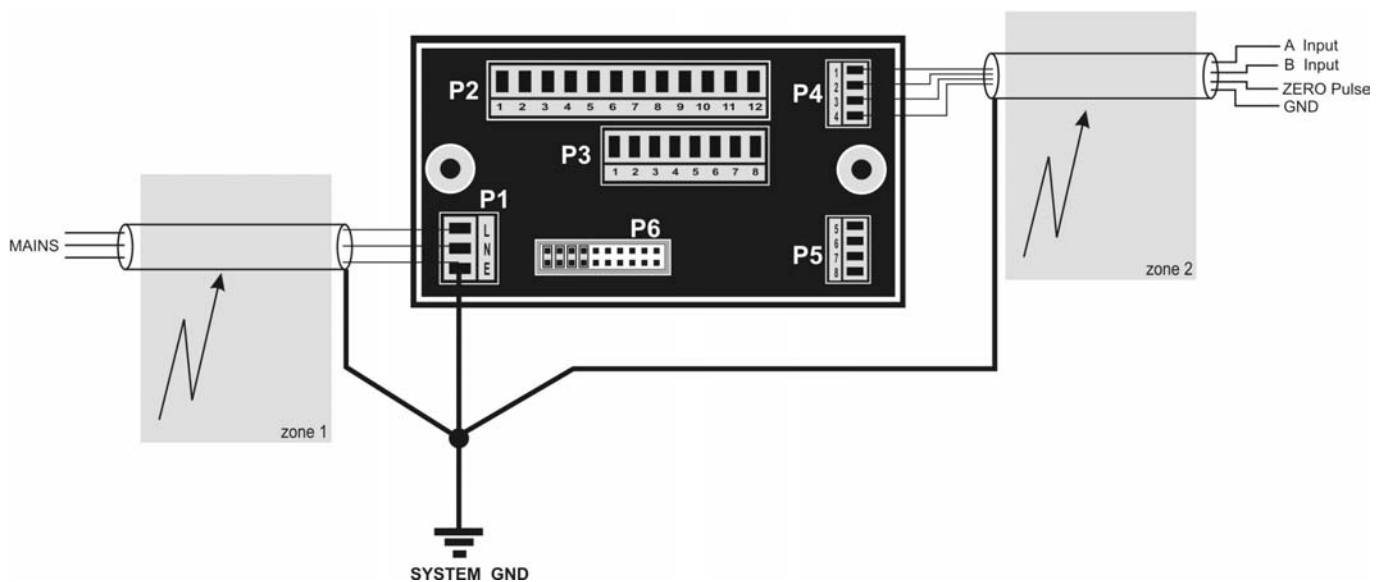
8 BURST TEST and RECOMMENDED CONNECTIONS

Tester: Burst-Surge Generator HILO, Model CE-Tester
Datum: 15. June 2000
E.U.T.: INF8-C, SN: 200606, Supply 230VA
Mode: Quadrature Counter

8.1 Test Conditions

IEC Norms: IEC 801-4
IEC 1000-4-4
EN 50052-1

8.2 Test Set - Up



8.3 Test Results

Zone 1:	2kV Burst	Display not disturbed
Zone 2:	2kV Burst	Display not disturbed

Technician: Oliver Matthews 15. June 2000