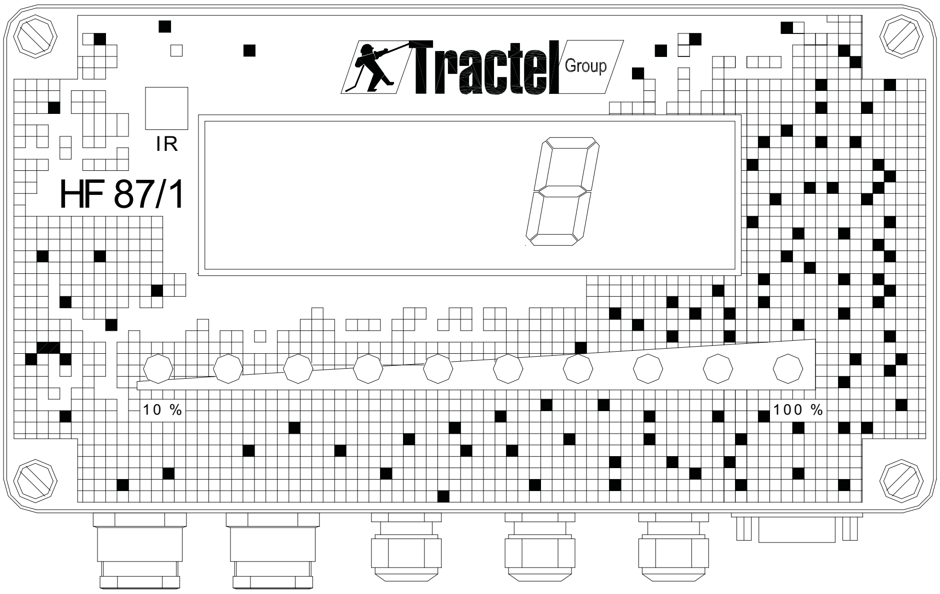
Scoreboard displays
HF 87



Operating and

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Equipment in accordance with CE directives

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GENERAL WARNING

1- Reading and fully understanding the technical data sheets relating to this equipment is essential for the best use of this high technological material that you have received. All the technical data sheets are available on request.

2- Before installing and operating Dynasafe® equipment it is essential for the safe and correct operation of the material that this manual be read and fully understood and that all the instructions be followed. This manual should be made available to every operator. Extra copies of this manual will be supplied on request.

3- The installation and operation of Dynasafe® equipment should only be carried out in accordance with the appropriate health and safety at work regulations.

4- Never apply to the Dynasafe® a load or an effort in excess of the working load limit, and never use it for an operation for which it is not intended.

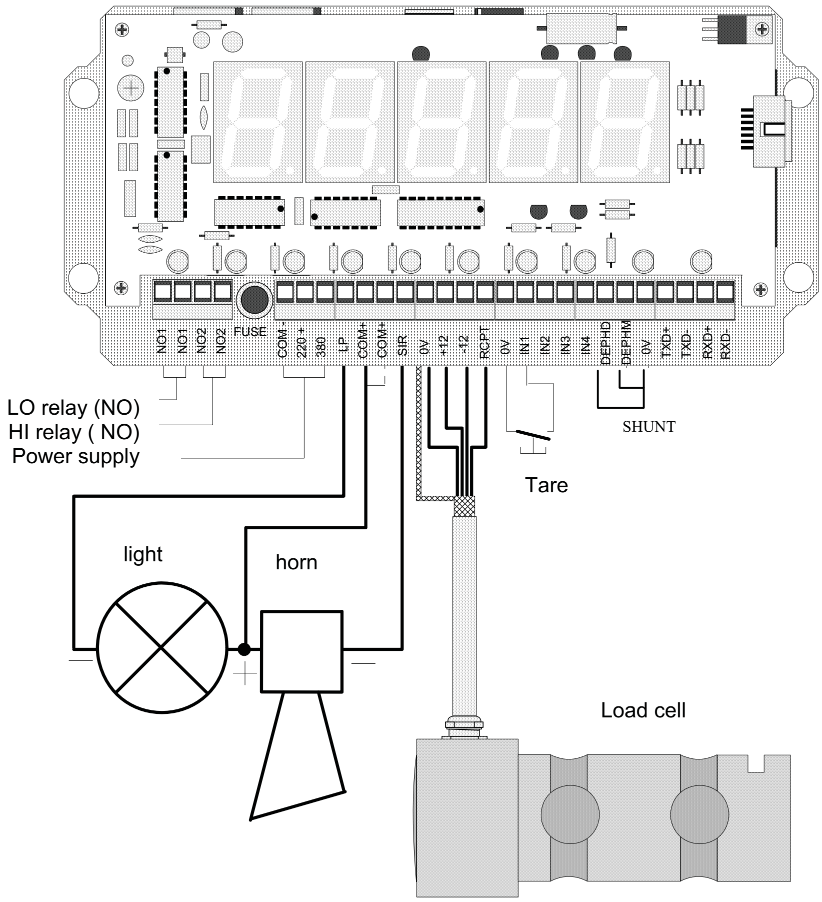
5- TRACTEL SAS declines any responsibility for the consequences of dismantling or altering the machine by any unauthorised person.

6- Dynasafe® equipment must not be used in explosive atmospheres.

7- Dynasafe® equipment must only be used in a system designed for lifting people after ensuring that the appropriate operating coefficients have be used in accordance with the current regulations.

8- Prior to the use of Dynasafe® equipment with complementary equipment relaying the signals to an operating system, the user or installer of this system should carry out a specific risk analysis of the operating functions. The appropriate measures should be taken to obviate the risks identified.

CONNECTION OF SCOREBOARD DISPLAY HF/87



NO 1 : S-LO intermediary trip point (NO 5 Amp)
NO 2 : S-HI safety trip point (NO 5 Amp)
COM : common
220 : 220 Vca power supply
380 : 380 Vca power supply

LP : flashing light (negative)
COM + : Common alarm (positive)
COM - : Common alarm (positive)
SIR : alarm (negative)

0 V : sensor
+ 12 : sensor
+ 12 : sensor
RCPT : sensor

0 V : common for tare and memories
IN 1 : tare
IN 2 : set memory
IN 3 : display memory
IN 4 : reset memory to zero

Options

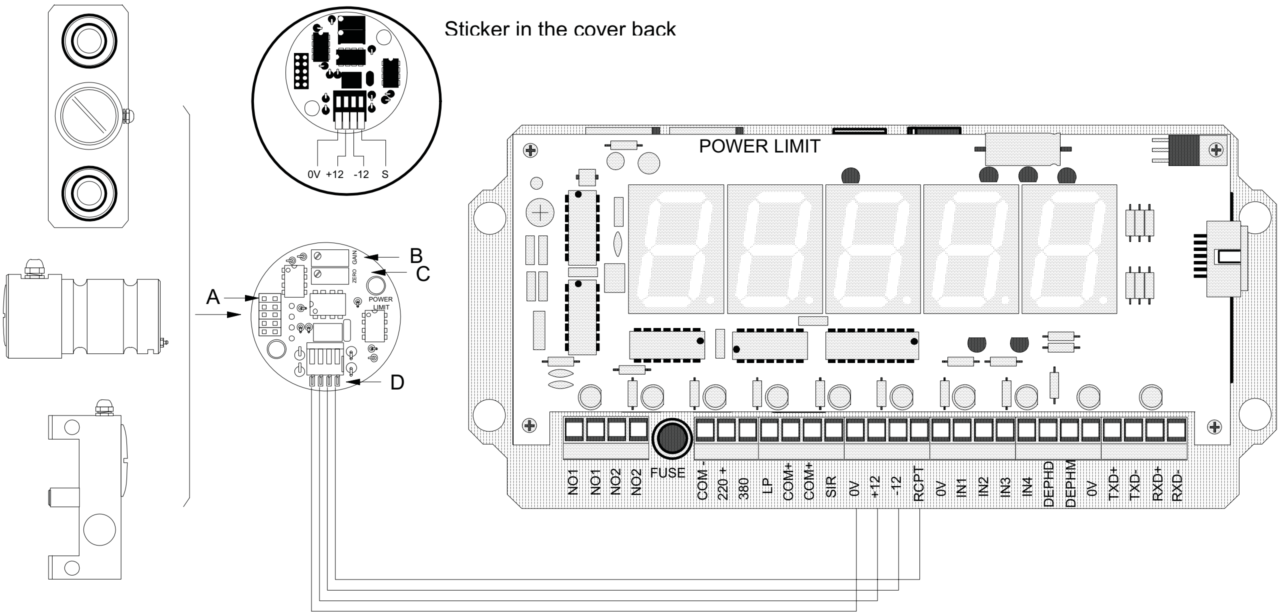
DEPHD : down*
DEPHM : up*
0 V : common for direction of operation*

TXD + : data transfer +
TXD - : data transfer -
RXD + : receive data +
RXD - : receive data -

Options

*Inputs used for advanced functions " Save Working Period" calculation.

CONNECTION OF THE ELECTRONIC LOAD CELL



A- Diagnostic plug
B- Gain (span) pot.
C- Zero pot.
D- Terminal

A- Diagnostic socket	D- Connection terminals
B- Gain potentiometer	E- Scoreboard display terminals
C- Zero potentiometer	F- Label

POWER SUPPLY CONNECTION

When the load cell and the scoreboard display have been fitted and wired correctly, switch on the power supply.

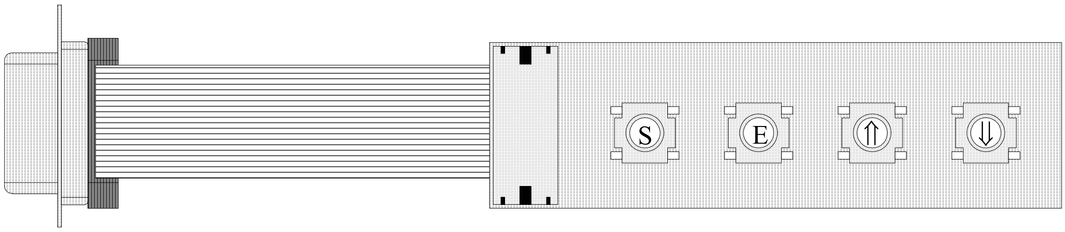
Once the power supply is switched on, the scoreboard displays the model reference (e.g.HF 87/1) for 2 seconds, during which time the alarms are triggered and the safety relays reversed.

Then, it displays a value in weight units. This value will only be correct after the system has been calibrated). (See page 14)

Carry the test function out.

TEST FUNCTIONS

- The scoreboard display is supplied within 4 touch programming keyboard.



- Connect the keyboard to the RS 232 socket on the display.

This keyboard allows the following tests to be carried out :

- **Display the signal from the load cell**

Press the button ⇓ to view the frequency signal from the load cell at that moment. Press the button again to return the display of the load in kg. By default, the display returns to normal after 4 minutes.

- **Overload simulation**

Press the button ⇑ and hold it depressed, to simulate the overload condition. The two relays are reversed and the alarms triggered.

- **Display the parameters held in memory**

Press the buttons ⇑ and ⇓ simultaneously. The scoreboard display will display the messages in sequence :

	Display	Comments
1	***tESt***	Title of sequence
2	***88880***	Test of all digits
3	***N°***	Identification number of …
4	***0***	N° … of the lifting device
5	***S –LO***	Intermediate trip point
6	***3000***	Value of this trip point in Kg (e.g.)
7	***S –HI***	Safety trip point
8	***10000***	value of this trip point in Kg (e.g.)
9	***End***	End of sequence

- **Display of the version of the software**

Press the button E to display the version of software. (e.g. 3.11)

- **Display the serial number**

Press the buttons E and ⇑ simultaneously to display the serial number (e.g. 662)

CALIBRATION OF DISPLAY HF 87/1/. AND 87/2/.

SET-UP N° 4

(see synoptic page 13)

Display installation main steps :

1. Load cell installation and wiring.
2. Display installation and wiring.
3. Display calibration.
4. Safety trip points adjustment.

Definitions of the different calibration parameters :

nUL	Set the Zero point of the measurement scale
SCAL	Define the frequency ratio between zero point (***nUL***) and nominal load value (***CALI***). Starting value: 7.000 Hz
CALI	Define the nominal crane capacity e.g. : 20000 Lbs. Crane. Sheaved 4/1 ***CALI*** = 20000
StEP	Define the incremental steps of the display.
POId	Calibration value regarding to a well-known load
SPEd2	Define the dynamic damper value
DBt	Double tare, return to the initial zero or the preceding zero

Complementary Advanced functions : high accuracy calibration

(Available from 4.2 software version only)

LIN	Linearity Optimisation
SET.L	Set-up for Linearity Optimisation

Essential conditions :

- The load cell and display should be correctly mounted and wired.
- The hook of the lifting system should be free of any load.

Equipment required :

- A well-known load close to the maximum capacity of the lifting system. (Our example 9.975 Kg).

CALIBRATION STEPS

Procedure to access to the calibration menus

	DISPLAY	ACTION	COMMENT.
1	425		Display before calibration Hook with no load
2	425	S E (5 sec)	Press buttons S & E simultaneously for 5 seconds to access the menu of calibration.
3	CODE	*(auto)* (Automatic display)	Access code
4	4567	⇧ ⇩	Press buttons arrows UP & Down to enter code 4567
5	4567	E	Confirm the code by pressing E
6	SEt.4	*(auto)*	Set-up N° 4.

BASIC CALIBRATION MENU

7	nUL	*(auto)*	Parameter to set the zero point. (E.g. 750 Hz = 0 Lbs.)
8	nUL	E	Press E
9	425	*(auto)*	The display doesn't indicate any incorrect value.
10	425	E	Press E a second time to confirm the zero value.
11	nUL		The setting of the zero point is completed. Press E again and the display will now show 0. Return the display to the nuL by pressing E again.
12	nUL	⇧	Press the UP arrows to pass the next stage.

13	SCAL	*(auto)*	Define the difference in signal between the zero point and the working load limit (CALI) Starting value : 7000 Hz (Will be automatically adjusted during the calibration process.)
14	SCAL	E	Press E to view this parameter .
15	7000	⇧ ⇩	Use the arrows to correct the value to 7000 (Hz) If necessary.
16	SCAL	E	Press E to confirm.
17	SCAL	⇧	Press the UP arrows to pass the next stage.

18	***CALI***	*(auto)*	Defines the working load limit of the lifting system. E.g. 20000 Lbs. Crane capacity. Sheaved 4/1: Cali = 20000
19	***CALI***	E	Press E to view this parameter .
20	***20000***	⇧ ⇩	Use the arrows to correct the value to 20000
21	***20000***	E	Press E to confirm.
22	***CALI***	⇧	Press the UP arrows to pass the next stage.

23	***StEP***	*(auto)*	Defines the incremental step of the display
24	***StEP***	E	Press E to view this parameter .
25	***25***	⇧ ⇩	Use the arrows to correct the value witch should be set as the function of the accuracy required.
26	***25***	E	Press E to confirm.
27	***StEP***	⇧	Press the UP arrows to pass the next stage.

28	***POId***	*(auto)*	Calibrate the measurement scale compared to a well-known load
29	***POId***	E	Press E to view this parameter .
30	***0***	*(auto)*	The display show the value of the load currently suspended
31	***18725***		**Lift an accurately known load** which should represent at least 80% to 90% of the capacity of the lifting system, the display indicates any incorrect value.
32	***18725***	E	Press E to correct this value
33	***19975***	⇧ ⇩	Use the arrows to correct the value in unit of measurement corresponding to the load actually lifted. Our example : 19975 Lbs.
34	***19975***	E	Press E to confirm.
35	***POId***	S	Press S to return to the beginning of the sequence.
36	***19975***	S	Press S a second time to return to the normal display of the load. Calibration is completed. Note : it is advised to repeat the calibration procedure 2 or 3 times during the first months of service in order to correct any movement as a result of the "bending-in" of the equipment.

(The next functions are not available on display manufactured before 01/01/98)

37	***Sped 2***	*(auto)*	Defines the dynamic damper value
38	***Sped 2***	E	Press E to view this parameter .
39	***5***	⇧ ⇩	Use the arrows to correct the value witch should be set as the function of the display stability required. (From 1 to 10)
40	***5***	E	Press E to confirm.
41	***Sped 2***	⇧	Press the UP arrows to pass the next stage.

42	***DBT***	*(auto)*	DBT= YES When you press TARE, the display alternatively shows 0 or the value of the actual suspended load. DBT= NO Any time you press TARE, display will show 0.
43	***DBT***	E	Press E to view this parameter .
44	***Yes*** or ***No***	⇧ ⇩	Use the arrows to select the required value. Default value is YES.
45	***No***	E	Press E to confirm.
46	***DBT***	⇧	Press “S” twice

The calibration has been successfully achieved.

REMARK : This calibration is recommended for weight estimation applications.

Basic calibration set the "zero point" corresponding to no load and a "maximum point" corresponding to the well-known load.

Between those two points a « theoretical » straight line fixes the intermediary points, friction and mechanical efficiency may lead to some linearity faults.

When high accuracy is required, complete the basic set up with : high accuracy calibration SET L.

HIGH ACCURACY CALIBRATION : SET. L

In order to increase the accuracy of the installation it could be appropriated to optimise the linearity of the weighing system by forcing the display to show accurate pre-set points along the scale.
Several points (maximum 10) could be forced and thereby optimise the linearity.
Those points could be either uniformly spread from the "0" up to the maximum crane capacity or concentrated on a specific range of value, where the higher accuracy is required.
Pre-set points modify not only the points values but the accuracy correction polynomial as well.
Generally three intermediary points are enough to increase significantly the weighing performance.

WARNING : This part of the menu is only workable after having successfully achieved the SETUP 4 basic functions. From NUL (line 7) to POId (line 36).

Procedure :

- Go to Set up. 4 (step 47 LIN)
- Disable LIN parameter.

47	***LIN***	*(auto)*	Accuracy optimisation. In order to initiate this procedure you have to disable this function.
48	***LIN***	E	Press E to view this parameter .
49	***YES***	⇧ ⇩	Use the arrows to select NO. Default value is YES.
50	***NO***	E	Press E to confirm your choice.
51	***LIN***	⇧	Press the UP arrows to go the next stage.

- Proceed with SET.L

Previous conditions at SET.L :

- Set-Up N° 4 basic functions has been successfully achieved.
- Remember ! *LIN* must be disabled..

Equipment required :

- As many intermediate points load as required accurate preset points.

HIGH ACCURACY CALIBRATION : SET. L

At each forced point corresponds a well-known load, e.g. if you want to set 3 forced points, you will need 3 well-known loads identified as P1 (point 1) for the first load, P2 (point 2) for the second load and so on…

- Lift load P1 and note the value showed on the display e.g. 1355 (The displayed value will probably NOT match perfectly the actual value of this load e.g. 1390).
- Lift load P2 and note the value showed on the display e.g. 4235. (Idem, e.g. 4210)
- Lift load P3 and note the value showed on the display e.g. 6410. (Idem, e.g. 6425)
  and so on…

- Then proceed (lines 52 to 66) as follows :

52	***SEt.L***	*(auto)*	Accuracy optimization
53	***SEt.L***	E	Press E to view this parameter .
54	***P1***	⇧ ⇩	Use the arrows to reach the point you want to set.
55	***P1***	E	Press E to confirm your choice.
56	***rEad***	E	Press E to view this parameter .
57	***1355***	⇧ ⇩	Use the arrows to enter the value you previously noted as P1.
58	***1355***	E	Press E to enter the value
59	***rEad***	⇧ ⇩	Press either UP or DOWN arrows to go the next step.
60	***rEEL***	E	Press E to view this parameter .
61	***1390***	⇧ ⇩	Use the arrows to enter the actual value of P1. e.g 1390
62	***1390***	E	Press E to enter the value.
63	***1390***	S	Press S to go back to rEEL symbol.
64	***REEL***	S	Press S to go back to ***P 1*** symbol.
65	***P1***	⇧ ⇩	Use the arrows to go to next point.
66	***P2***		Repeat the process from line 55 to 65 for each different points.

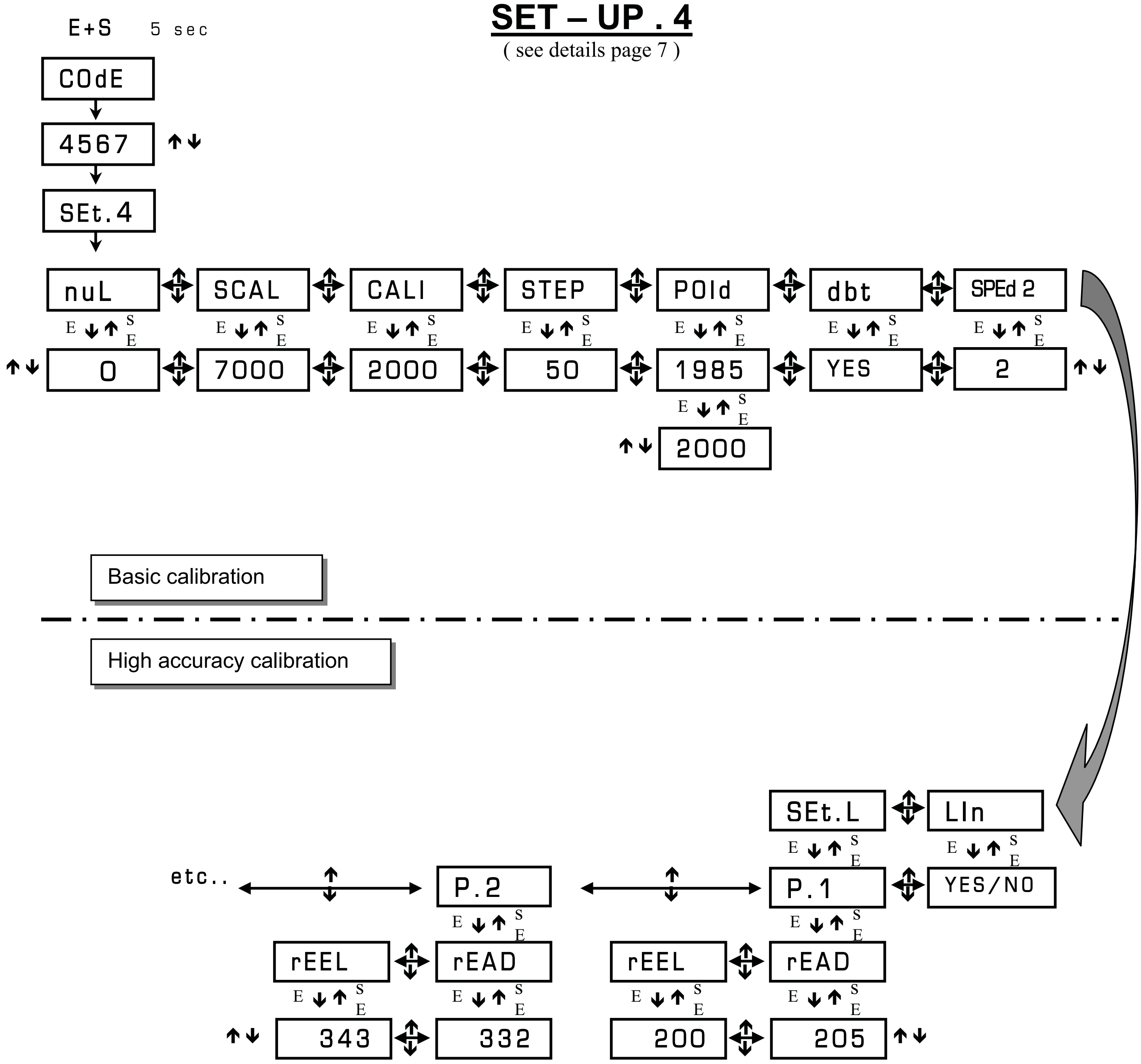
Reactivate ***LIN*** parameter (lines 47 to 51) and quid Set-Up N°4 by pressing “S” twice.

Congratulation, High accuracy Set-Up N° 4 has been successfully achieved.

SYNOPTIC OF CALIBRATION MENU

SET – UP . 4

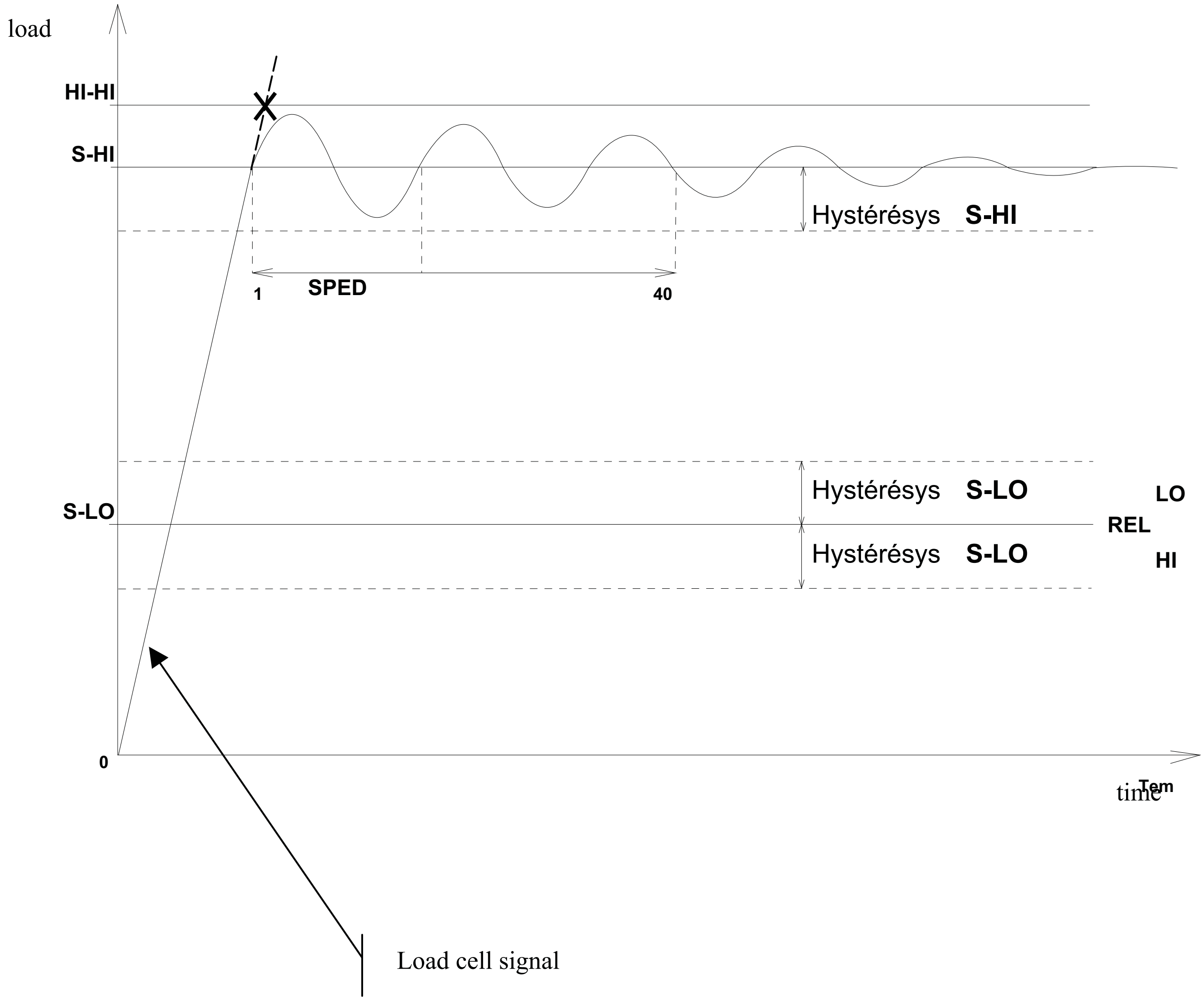
(see details page 7)



E	: Enter
S	: Exit
S/E	: E to enter, S to exit
⇕⇔	: Move horizontally with the arrows
↑↓	: Move vertically with the arrows
↑↓	: Select with the arrows.

TRIP POINTS ADJUSTMENT

Diagram :



Definitions :

S-HI : - Safety trip point.
- Its value is generally set at 110% of crane capacity.
- Adjustable to any point within the nominal capacity.
- Control the '**HI**'. Relay.
- Value in weigh unit.
- Takes account of the dynamic effect damper.

HIHI : - Final safety trip.
- Its value is generally set at 130% of crane capacity.
- Control the '**HI**'. Relay.
- Value in weigh unit.
- Default value 30 % higher than **S-HI**.
- Does not take account of the dynamic effect damper.

S-LO : - Intermediate trip point.
- Control the '**LO**'. Relay.
- Adjustable to any point within the nominal capacity but lower than S-HI.
- Could be configured (Set-up n°1 **REL**) to detect :
  - Intermediate trip point **REL- HI**
  - Slack wire rope detection **REL- LO**
- Takes account of the dynamic effect damper.

Hysteresis S-LO : Gap value between triggering and reset of the '**LO**' relay.
- e.g. **S-LO** 5000 Kg hysteresis **LO** 500 Kg

REL=HI : Triggering **LO** relay at 5000 Kg, reset at 4500 Kg.
REL=LO : Triggering **LO** relay at 5000 Kg, reset at 5500 Kg.

Hysteresis S-H I : Gap value between triggering and reset of the '**HI**' relay.
- e.g. **S-HI** 7000 Kg hysteresis **HI** 1000 Kg

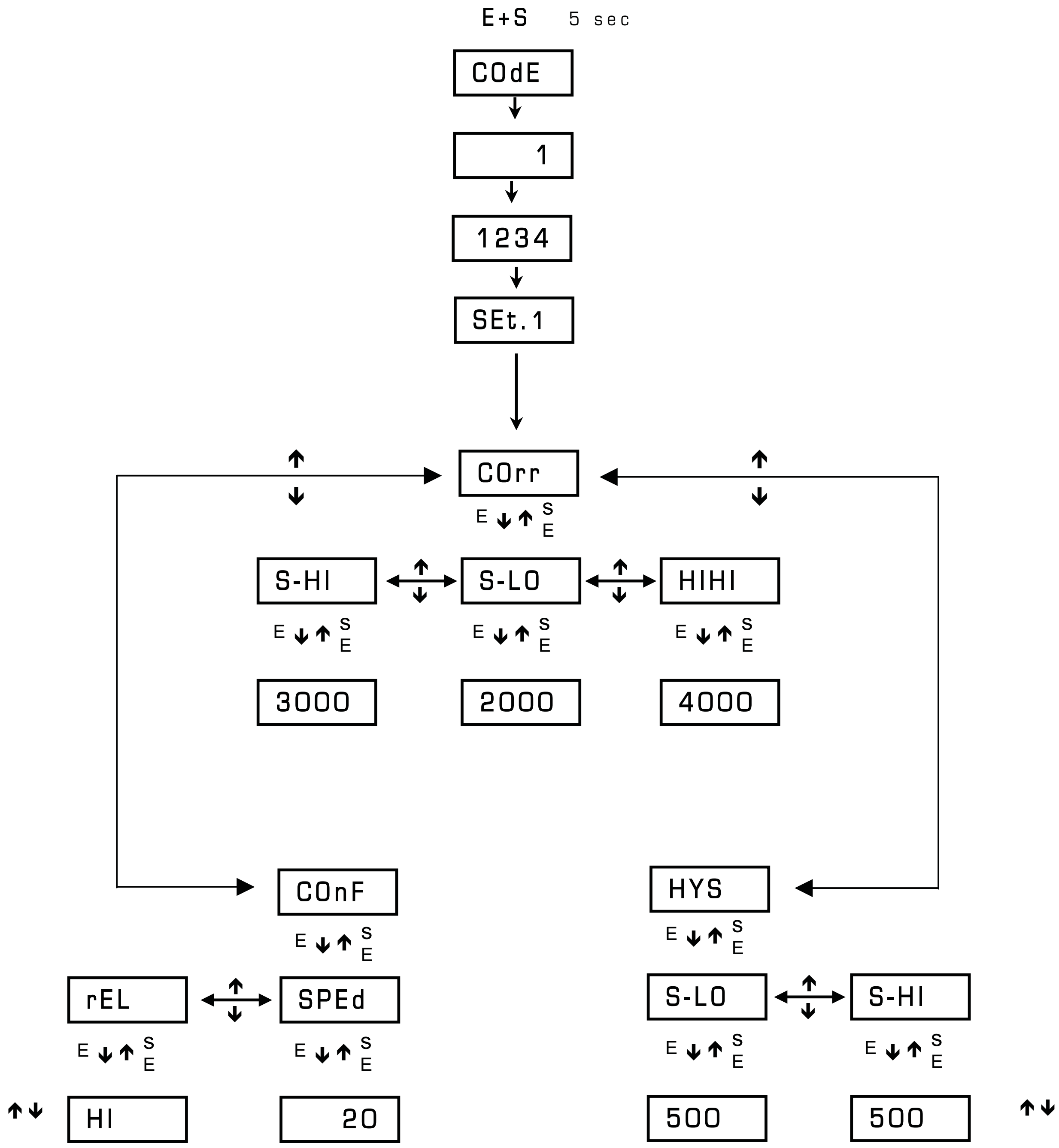
Triggering relay **HI** at 7000 Kg, reset at 6000 Kg.

REL : - Configuration of the **LO** relay.
- **LO** : triggering while signal is decreasing.
- **HI** : triggering while signal is growing.

SPED : - Configuration of the dynamic effect control.
- Value from 1 (fast) to 40 (slow).
- Default value is 20
- Calculation of the real value of the load compared to its undulatory value may be carried out from a greater or lesser figure. The greater the sampling the more complex and precise the calculation. On the other hand the reaction of the relays will be longer

SYNOPTIC OF MANUAL TRIP POINTS ADJUSTMENT

SET UP N°1



E	: Enter
S	: Exit
S/E	: E to enter, S to exit
↔↕	: Move horizontally with the arrows
↑↓	: Move vertically with the arrows
↑↓	: Select with the arrows.

AUTOMATIC SETTING OF SAFETY TRIP POINT

SET- UP N°2

Essential conditions :

- THE TEST OPERATION SHOULD HAVE BEEN SUCCESSFULLY CARRIED OUT (page 7)
- The relay (rEL) is set by default in « HI » (see page 16)

Equipment required :

- A load equivalent to 100 % if the working load limit of the lifting system. (E.g 20000 lbs).

	DISPLAY	ACTION	COMMENT
1	**0**	S E (5 sec)	Press simultaneously for 5 seconds S and E to access the menu of calibration.
2	**CODE**	*(auto)* *(automatic display)*	Access code
3	**2345**	⇧ ⇩	Press the buttons UP & DOWN to enter the code 2345. Confirm by pressing E.
4	**SEt.2**	*(auto)*	Set-up N° 2. Automatic setting of the trip points..
5	**N°..**	*(auto)*	N° of the lifting system.
6	**...6**	⇧ ⇩	Use the arrows to enter the n° of the lifting system. Confirm with E.
7	**S-LO**	*(auto)*	Intermediate trip point (See graph)
8	**S-LO**	S	Intermediate trip point will not be used on this system setting. Go to next step by pressing S. (As a result, the relays HI and LO will trip simultaneously)
9	**S-HI**	*(auto)*	Safety trip point S-HI.(see graph)
10	**S-HI**	*(auto)*	**Lift a load equivalent to the maximum capacity of the lifting system by about 10 cm (**or the maximum permitted load**)**
11	**S-HI**	E	When the lad is stable, confirm the trip point by pressing button E.
12	**- - - -**	*(auto)*	The microprocessor calculates the real value of the load.
13	**11000**	*(auto)*	Display in Kg of the upper trip point (S-HI). Our e.g 11 000kg. The microprocessor calculates this trip point to set it at 110 % of the lifted system. The final upper trip point is automatically calculated and set at 130 % over the safety trip point.
14	**End**	*(auto)*	End of automatic setting procedure.
15	**10000**	*(auto)*	The monitor returns to normal operation.

Warning : After an automatic setting via Set-up n°2, you can modify all the instructions and configurations by using Set-up n°1.(See synoptic page 16)

AUTOMATIC SETTING OF SAFETY TRIP POINT AND SLACK WIRE ROPE TRIP POINT

Essential conditions :

- THE TEST OPERATION SHOULD HAVE BEEN SUCCESSFULLY CARRIED OUT (Page 7)
- The relay (rEL) is set to « LO » through SET –UP N°1 (page 16)

Equipment required :

- A lifting accessory (Load n°1) is required for setting the slack wire rope trip point S-LO.
- A load (Load n° 2) which with the lifting accessory, is equivalent to 100 % of the working load limit of the system. (e.g 10 T).

	DISPLAY	ACTION	COMMENT.
1	0	S E	Press buttons S and E simultaneously for 5 seconds to access the menu for automatic setting of the trip points. (The hook should be free of any load).
2	CODE	*(auto)*	Access code.
3	2345	⇧ ⇩	Press the buttons UP & DOWN to enter the code 2345. Confirm by pressing E.
4	SEt.2	*(auto)*	Set-up N° 2. Automatic setting of the trip points..
5	N°..	*(auto)*	N° of the lifting system.
6	...6	⇧ ⇩	Use the arrows to enter the n° of the lifting system. Confirm with E.
7	S-LO	*(auto)*	Lift load N° 1 about 10 cm.
8	S-LO	E	When the load is stable, confirm the trip point by pressing button E.
9	- - - -	*(auto)*	The microprocessor calculates the real value of the load.
10	2750	*(auto)*	Display in Kg of the intermediate trip point S-LO. The example shows 2750 kg.
11	S-HI	*(auto)*	Using the lifting accessory which represents load N°1, lift load N° 2 about 10 cm. *Note: Up to 4 minutes is allowed to carry out this operation, after which time the monitor returns to normal operation and the set-up must restart at point 1..*
12	S-HI	E	When the load is stable, confirm the trip point by pressing button E.
13	- - - -	*(auto)*	The microprocessor calculates the real value of the load.
14	11000	*(auto)*	Display in Kg of the upper trip point (S-HI). Our e.g 11 000kg. The microprocessor calculates this trip point to set it at 110 % of the lifted system. The final upper trip point is automatically calculated and set at 130 % over the safety trip point.
15	End.	*(auto)*	End of automatic setting procedure.
16	10000	*(auto)*	The display returns to normal operation. It displays 10000 which is the current lifted load.
17	0	*(auto)*	The display will show 0 and switch the LO (stopping the lowering operation) as soon as the lifting accessory, on touching the ground, causes the signal from the load cell to fall below the S-LO trip point for slack wire rope. Adjustable hysteresis.

Warning : After an automatic setting via Set-up n°2, you can modify all the instructions and configurations by using Set-up n°1.(See synoptic page 16)

AUTOMATIC SETTING OF SAFETY TRIP POINT AND INTERMEDIATE TRIP POINT

Essential conditions :
- THE TEST OPERATION SHOULD HAVE BEEN SUCCESSFULLY CARRIED OUT (page 7)
- The relay (rEL) is set by default in « HI » (page 16)

Equipment required :
- A load (Load n°1) equivalent to the value of the intermediate trip point S-LO.
- A load (Load n° 2) equivalent to 100 % of the working load limit of the system. (e.g 10 T).

	DISPLAY	ACTION	COMMENT.
1	0	S E	Press buttons S and E simultaneously for 5 seconds to access the menu for automatic setting of the trip points. (The hook should be free of any load).
2	CODE	(auto)	Access code.
3	2345	⇧ ⇩	Press the buttons UP & DOWN to enter the code 2345. Confirm by pressing E.
4	SEt.2	(auto)	Set-up N° 2. Automatic setting of the trip points..
5	N°..	(auto)	N° of the lifting system.
6	...6	⇧ ⇩	Use the arrows to enter the n° of the lifting system. Confirm with E.
7	S-LO	(auto)	Lift load N° 1 about 10 cm.
8	S-LO	E	When the load is stable, confirm the trip point by pressing button E.
9	- - - -	(auto)	Microprocessor is calculating the actual value.
10	2750	(auto)	Display in Kg of the intermediate trip point S-LO. The example shows 2750 kg.
11	S-HI	(auto)	Using the lifting accessory which represents load N°1, lift load N° 2 about 10 cm. *Note: Up to 4 minutes is allowed to carry out this operation, after which time the monitor returns to normal operation and the set-up must restart at point 1..*
12	S-HI	E	When the load is stable, confirm the trip point by pressing button E.
13	- - - -	(auto)	The microprocessor calculates the real value of the load.
14	11000	(auto)	Display in Kg of the upper trip point (S-HI). Our e.g 11 000kg. The microprocessor calculates this trip point to set it at 110 % of the lifted system. The final upper trip point is automatically calculated and set at 130 % over the safety trip point.
15	End.	(auto)	The display returns to normal operation. It displays 10000 which is the current lifted load.
16	10000	(auto)	The display will show 0 and switch the LO (stopping the lowering operation) as soon as the lifting accessory, on touching the ground, causes the signal from the load cell to fall below the S-LO trip point for slack wire rope. Adjustable hysteresis.

Warning : After an automatic setting via Set-up n°2, you can modify all the instructions and configurations by using Set-up n°1.(See synoptic page 16)

ZERO AND GAIN ADJUSTMENT

General information :

- Load cell are adjusted from factory and put out a frequency signal of 7500 Hz at there nominal capacity and 500 Hz without any load. (the first 500 hertz indicates the well functioning of the system)

- Some load cell due to the sheaving mode are not stressed at there nominal capacity. e.g. 50%. In this case the frequency will only reach 3000 hz. This could reduce drastically the signal resolution.

- In order to reach the higher resolution as possible, for instance when load cell is used in weigh control application, It could be convenient to optimize the signal range.
  This will be carried out by "zero" and "gain" (span) potentiometers adjustment.

Essential conditions :

- THE TEST OPERATION SHOULD HAVE BEEN SUCCESSFULLY CARRIED OUT.
- No load on the cell.
- Display in frequency mode (press ⇩)

Equipment required :

- A load equivalent to 100 % if the working load limit of the lifting system.

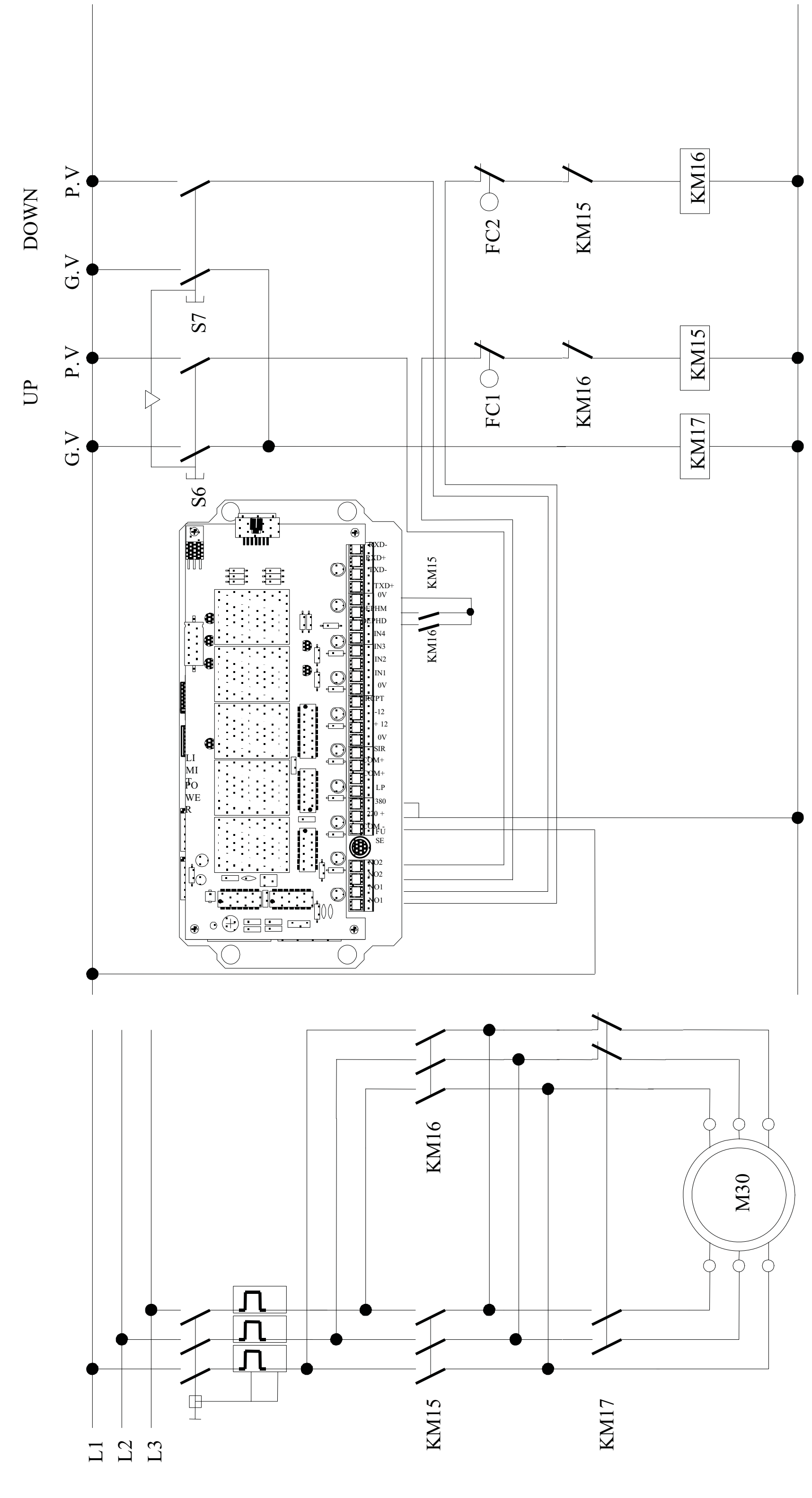
Procedure :

	DISPLAY	ACTIONS	COMMENT.
1	**. 650**		Load cell out put signal in frequency (e.g.)
2	**. 650**	**Set the zero**	With the "ZERO" potentiometer , reduce the signal to 0 hz (+2- 0)
3	**. . . 1**		
4		**Lift the load**	
5	**3500**		Frequency out put signal before dajustment. e.g.
6	**7000**	**"GAIN" adjustment**	With the "GAIN" potentiometer , increase the signal to 7000 Hertz. *When 7000 hz are not reachable adjust as higher as possible.*
7		**Put load down**	
8	**. . 27**		Load cell out put signal in frequency (e.g.)
9	**. 500**	**"ZERO" adjustment**	With the "ZERO" potentiometer , increase the signal to 500 Hertz.. If necessary repeat the process till get 500 hz with no load and about 7500 hz (or the reachable maximum) with the nominal load.

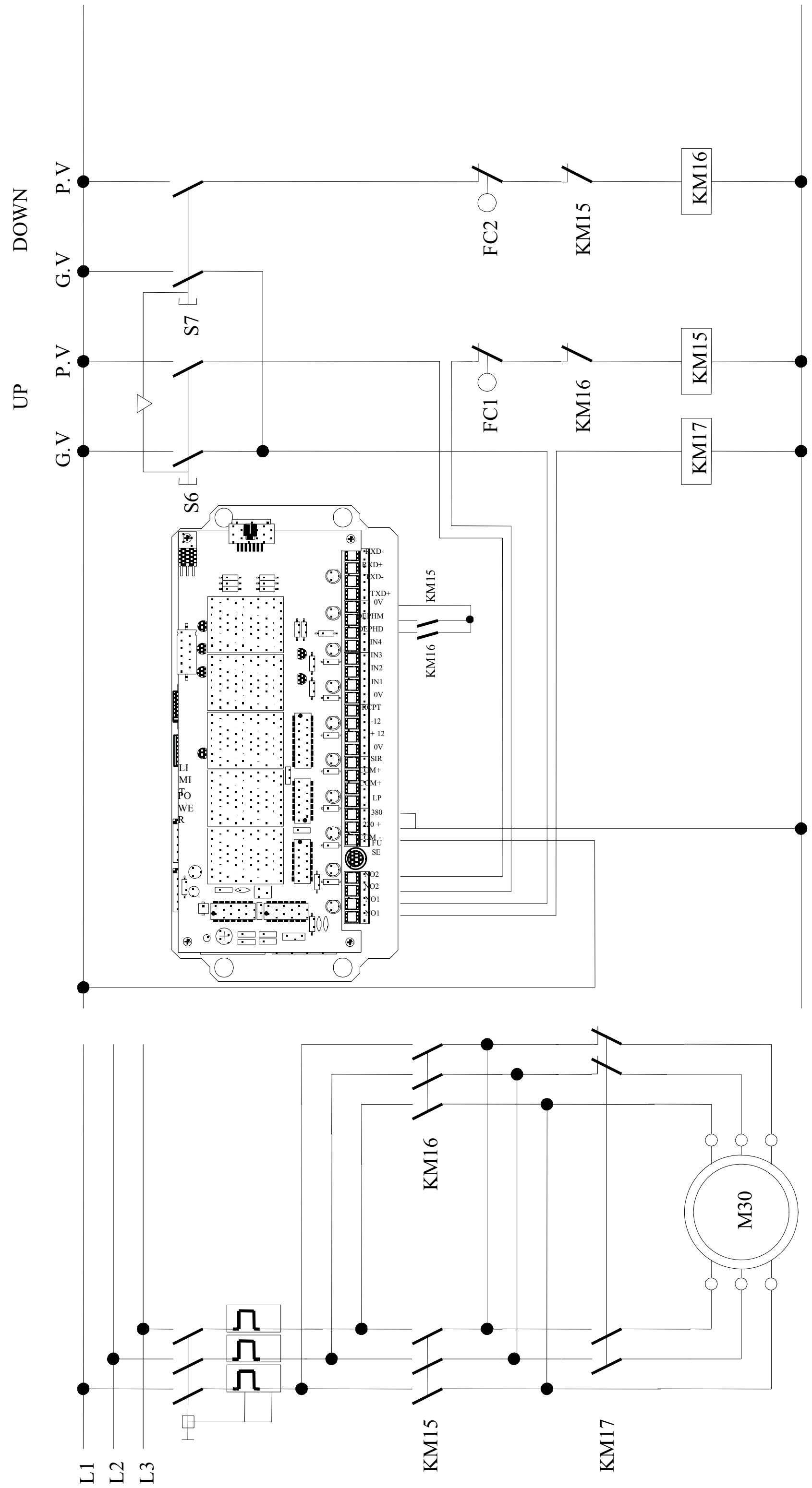
End of the process.

Proceed with SET – UP N° 4, N°1 or N°2

CONNECTION LAYOUT
1 SAFETY TRIP POINT + 1 SLACK WIRE ROPE POINT



CONNECTION LAYOUT
1 SAFETY TRIP POINT + 1 INTERMEDIATE TRIP POINT

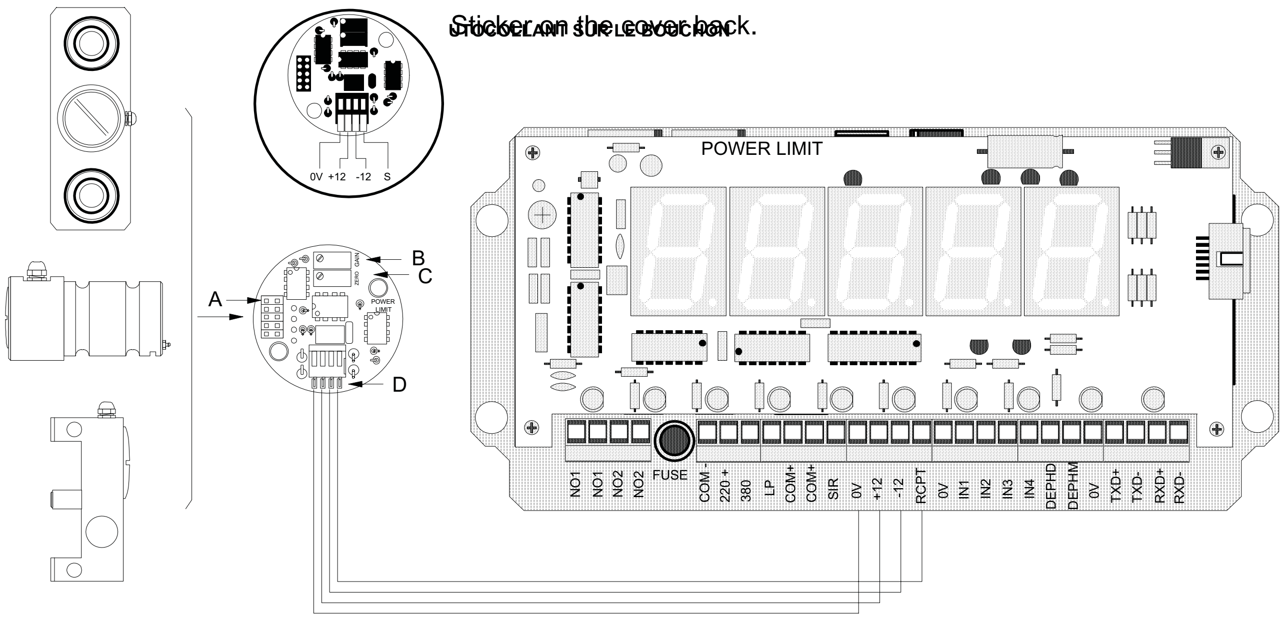


WIRING DIAGRAMS

Remarks :

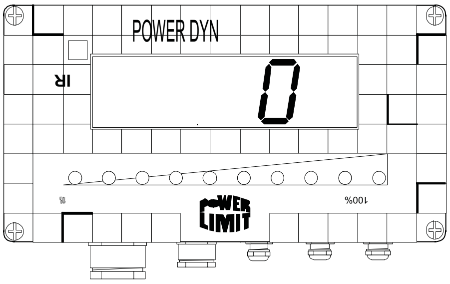
- Use shielded 4 x 0.34 mm² wires to connect the load cell.
- Shield must be connected only on the display side.

Load cell with build in converter

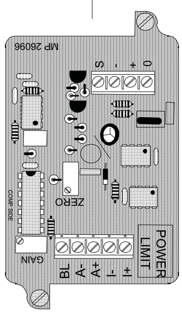


A : Diagnostic plug
B : Gain (Span) potentiometer
C : Zero potentiometer
D : Terminal

Load cell with remote converter

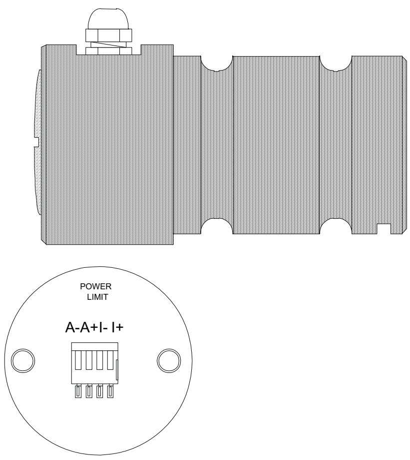


HF87	HF84/1
0V	0
+12	+
-12	-
RCPT	S



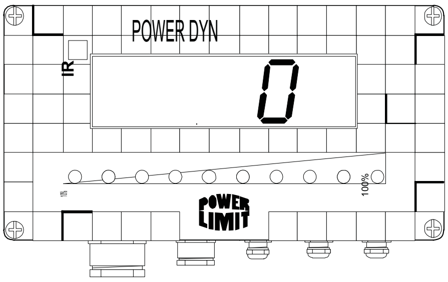
Converter · HF84/1

Capteur Load cell	HF84/1
A-	A-
A+	A+
I-	I-
I+	I+
Tresse Shield	BL

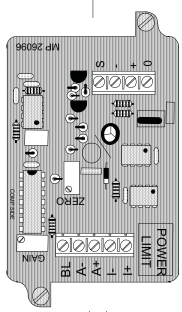


Shield must be connected to the HF 84 / 1 side on the BL terminal.

Several load cells with sum function in millivolts.



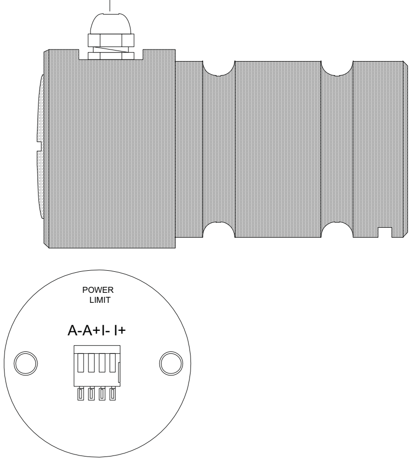
HF87	HF84/2
0V	0
+12	+
-12	-
RCPT	S

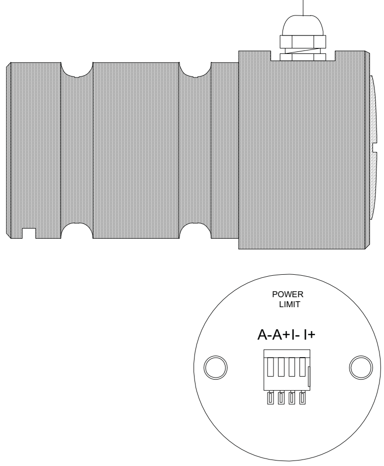


Conditioner & sum unit
Conditionneur Sommateur
HF84/2
HF 84/2

Load cell 1 Capteur 1	HF84/2
A-	A-
A+	A+
I-	I-
I+	I+
Shield Tresse	BL

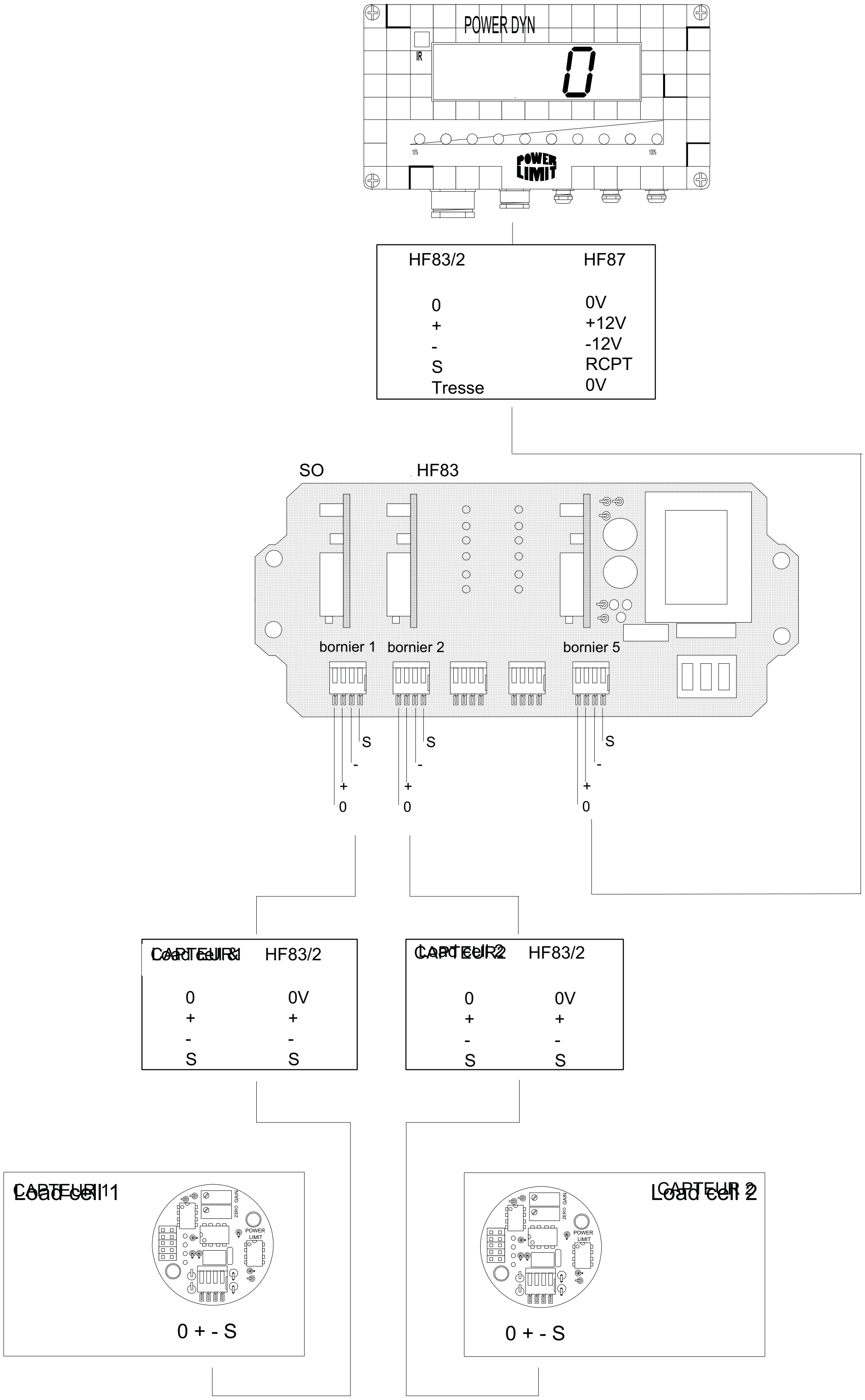
Load cell 2 Capteur 2	HF84/2
A-	A-
A+	A+
I-	I-
I+	I+
Shield Tresse	BL



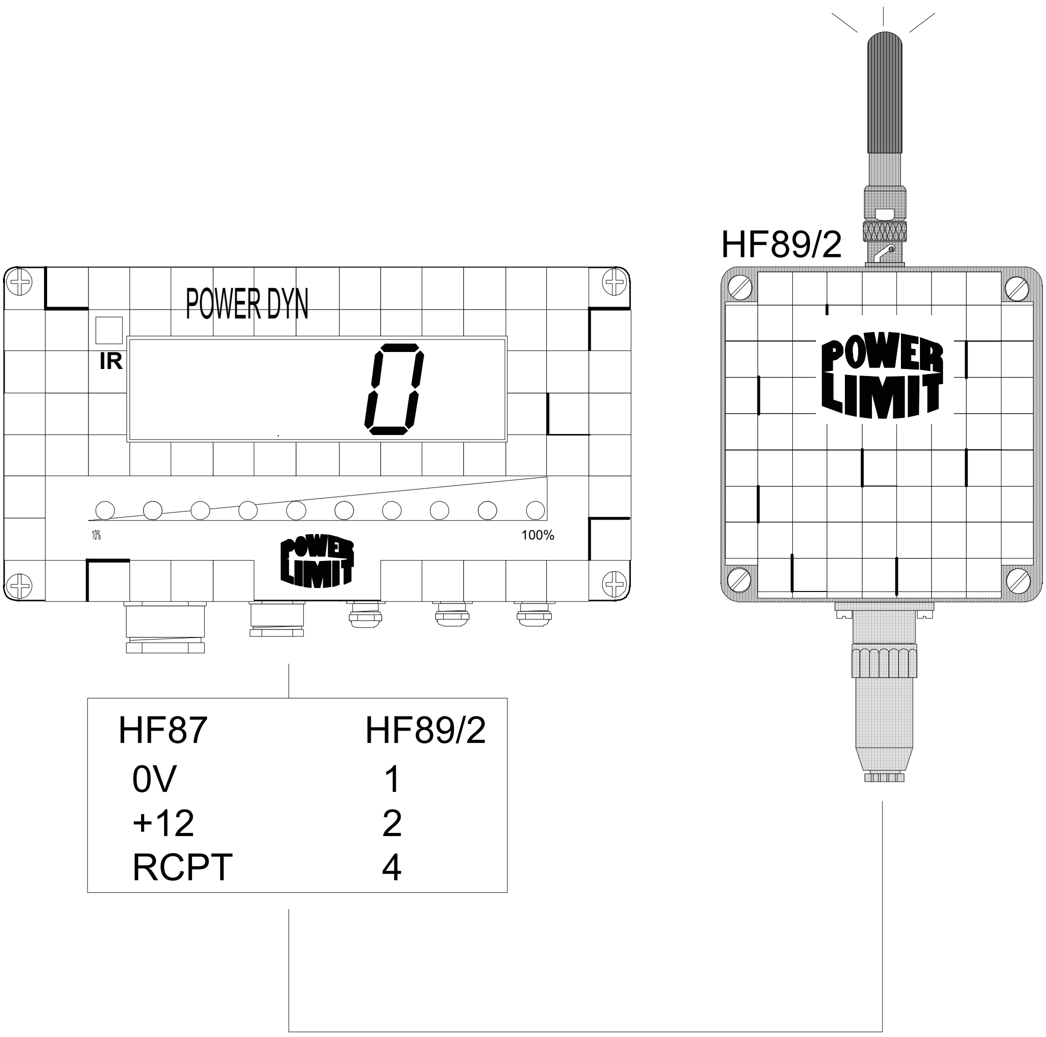


Shield must be connected to the HF 84 / 1 side on the BL terminal.

Several load cells with sum function in frequency.



Radio receiver Wiring.



HF87	HF89/2
0V	1
+12	2
RCPT	4

TROUBLE - SHOOTING

DISPLAY	CAUSE	SOLUTION
Er.1	Scoreboard could not display the actual value. e.g. : - *1000* or *110000*	Make a tare Check parameters of Set Up 4
Er.20	Load cell out signal is lower than 400 Hz 1) Value between 1 and 399 Hz 2) Signal = 0 Hz - Wrong wiring. - Power supply fault. - Display fault - Load cell fault **NOTE : Wrong polarity wiring may cause destruction of some electronic components.**	To check frequency signal press ⇩ 1) Increase the frequency up to 500 hz with the "zero" potentiometer. (page 20) 2) - Double check wiring. - Double check power supply. - Contact Tractel ASS - Contact Tractel ASS
Er.21	Frequency out put signal could not be read by the display. - Signal greater than 9999 Hz - Load cell is over stressed - Display fault - Load cell fault **NOTE : Wrong polarity wiring may cause destruction of some electronic components.**	 - adjust "GAIN" potentiometer - compare stress and capacity - Contact Tractel ASS - Contact Tractel ASS

INFORMATION MESSAGES

DISPLAY	COMMENT
t E S t	Auto test when turn ON
SEt 1	Set-up N° 1 Parameters adjustment menu
SEt 2	Set-up N° 2 Trip points adjustment menu
SEt 3	Set-up N° 3 Display zeroing. Code 3456 Only to reset the "zero" point
SEt 4	Set-up N° 4 Display calibration menu
COdE	Access Code
COrr	Correction.
COnF	Configuration.
HYS	Hysteresis.
rEL	Relay
SPEd	Calculation of the dynamic effect
N°	Crane identification n°
3.10	Program version
End	End of procedure.
nUL	To fix the zero point.
SCAL	Frequency range between Zero (NUL) and nominal capacity (CALI)
CALI	Nominal capacity
StEP	Increment
POId	Well known load
87 - 1	Display type
ErOr	Wrong code

NOTES :