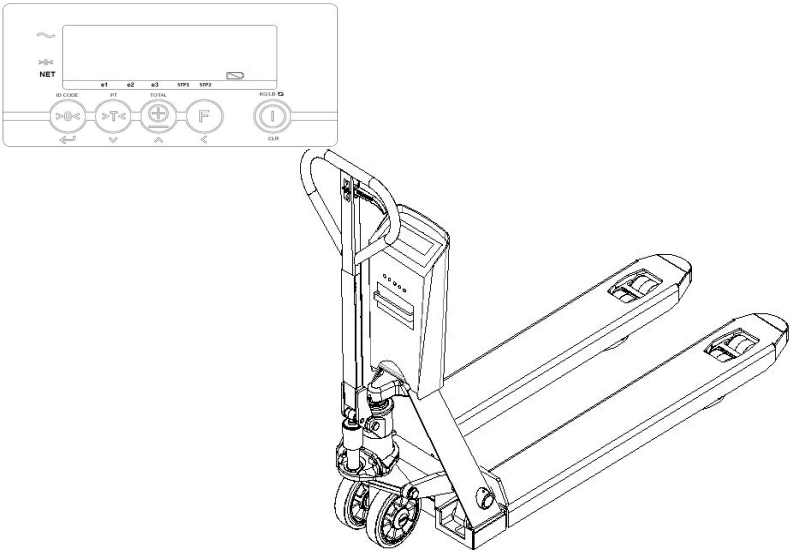
SERVICE MANUAL
RAVAS 320



Rev. 20250114

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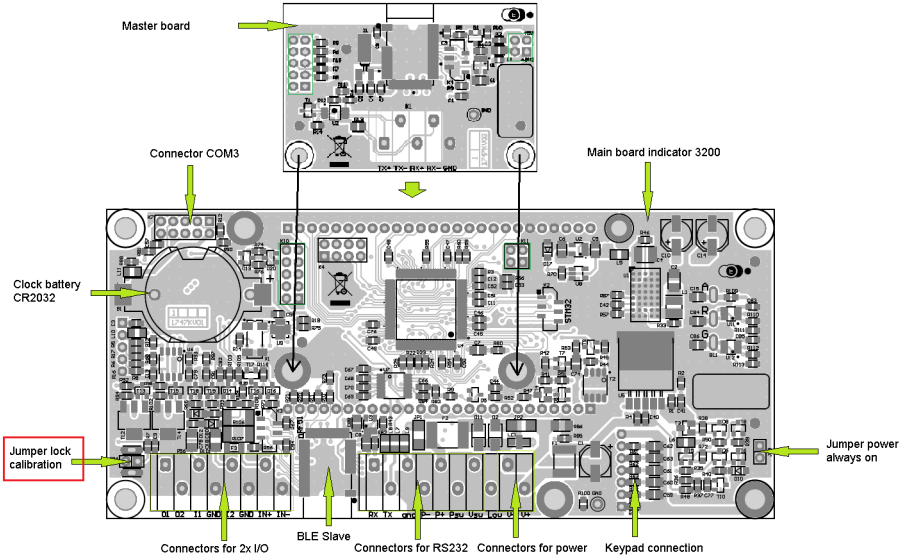
Warning:

Only trained and authorized personnel are allowed to calibrate the scale.

Note:

Before starting the calibration procedure be sure the calibration locking jumper is removed (legal for trade units).



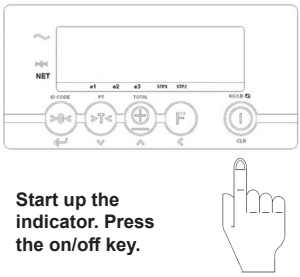
After the calibration procedure, place the jumper for calibration lock. On a legal for trade unit, seal with wire and lead or a plastic stamp.

We would like to inform you about the fact that this RAVAS product is 100% recyclable on the basis that the parts are processed and disposed off in the right manner.
More information can be found on our website: www.ravas.com

1. Calibration

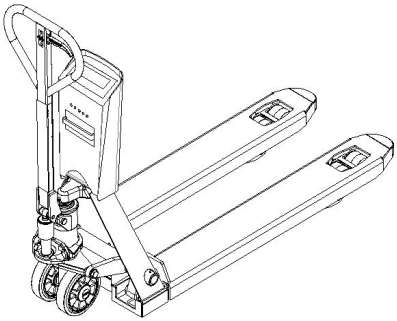
1.1 Zero calibration

1



Start up the indicator. Press the on/off key.

2



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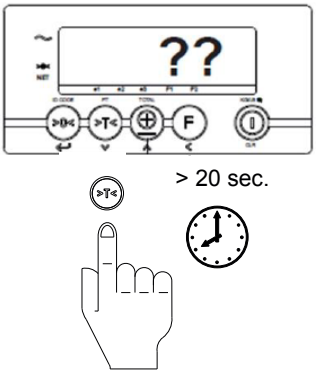

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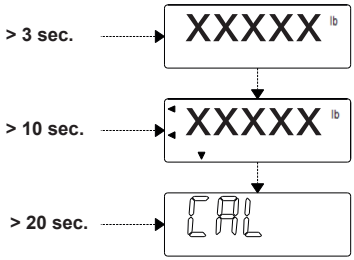

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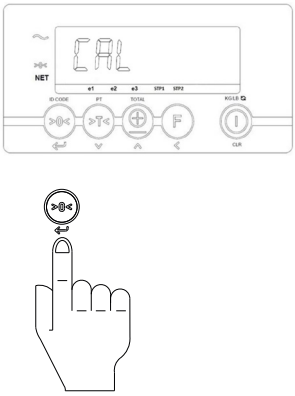

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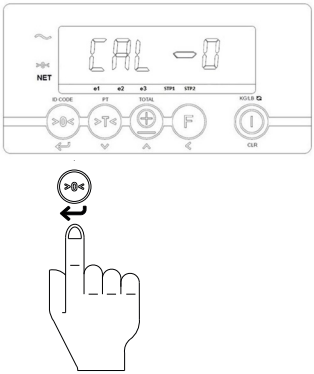
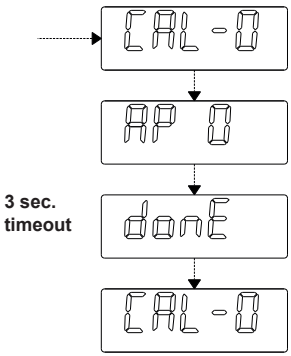
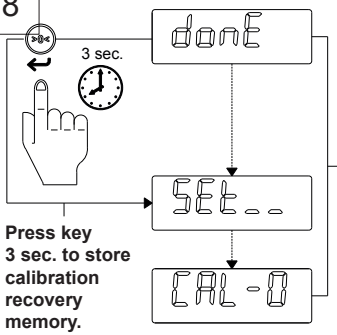


7



3 sec. timeout

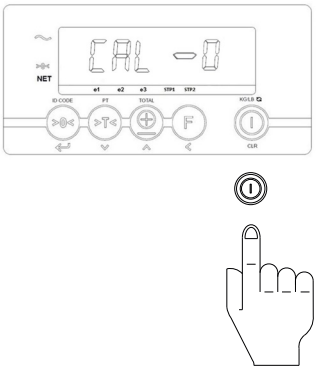
8



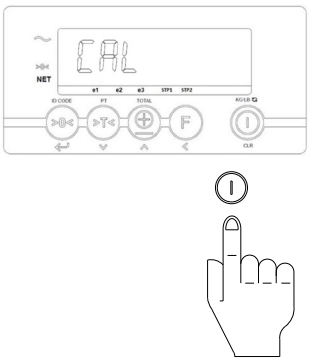
3 sec. timeout and the display will show CAL-0.

Press key 3 sec. to store calibration recovery memory.

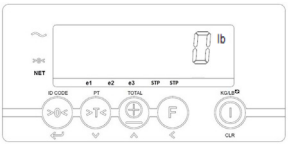
9



10



11

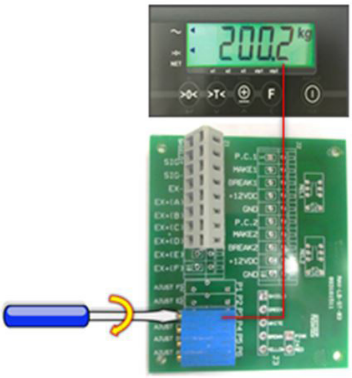


12

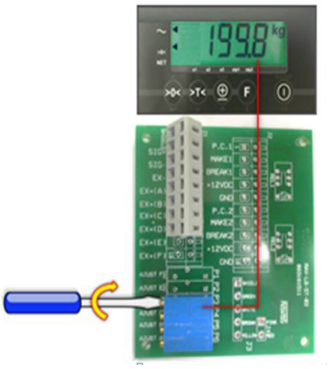
1.2 What if the corners do not indicate the same

If the corners do not indicate the same, you need to adjust the potentiometers on the adjustmentboard!

Note: The corners must show the same value. This value does not have to be identical to the weight lifted!



Potentiometer clockwise:
Value increases.



Potentiometer counterclockwise:
Value decreases.

Note:

* For each potentiometer a correction can be made for a maximum of 10 Ω (Ohm).

* RAVAS uses both 350 Ω load cells as well as 1000 Ω load cells.

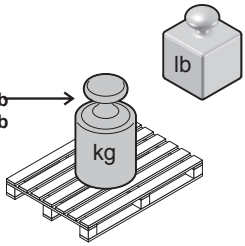
* Important: Always perform a new zero calibration after you made adjustments to the corners!

1.3 Weight calibration - standard routine

1

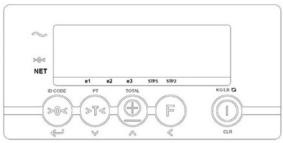
EXAMPLE:

M1 = 500 kg / 1000 lb
M2 = 1500 kg / 3000 lb
M3 = 2000 kg / 5000 lb



M = total calibration weight loaded onto RAVAS 320 incl. pallet if used).

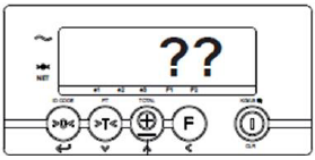
2



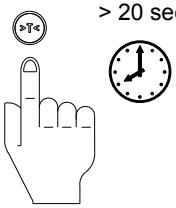
Check if the calibration jumper is installed on the board of the indicator.

If the indicator is off, start up the indicator. Press the on/off key. Else continue with 3.

3



> 20 sec.



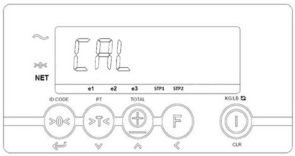
4

> 3 sec. ⋯⋯▸ XXXXX lb

> 10 sec. ⋯⋯▸ XXXXX lb

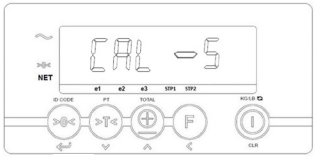
> 20 sec. ⋯⋯▸ CAL

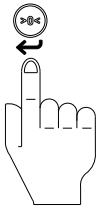
5



1 sec. - - - - - - - ▸

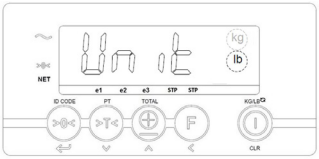
6

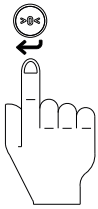




1 sec. - - - - - - - ▸

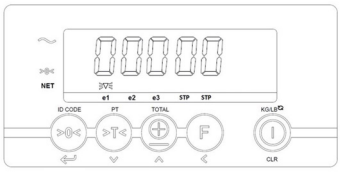
7

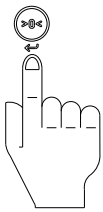




NOTE: Set P01 to kg or lb. See chapter 2 for parameter settings.

8





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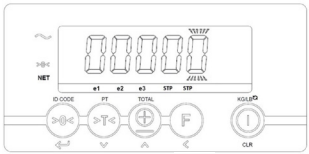
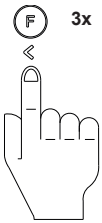
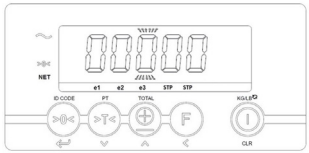


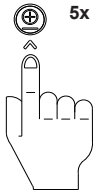
Change digit if needed !



3x

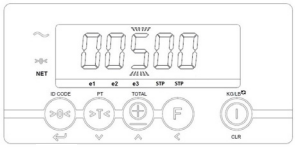
10





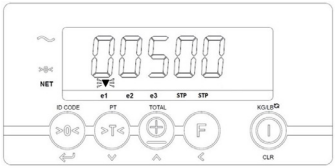
5x

11



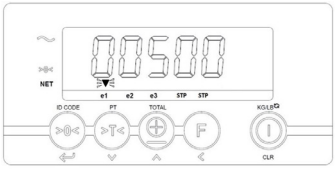
1x

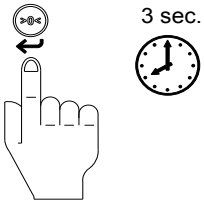
12



13

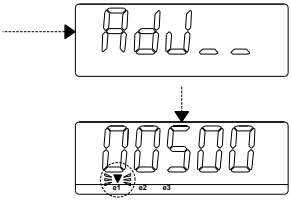
14



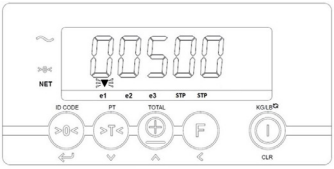


3 sec.

15



16



1x

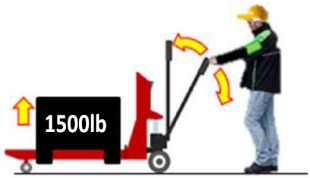
Move the pointer to e2.

17

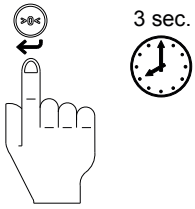
Change the value if needed, by pressing the >0< key shortly.

(see also steps 9 - 12)

18



19



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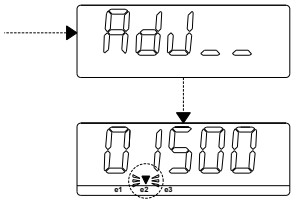
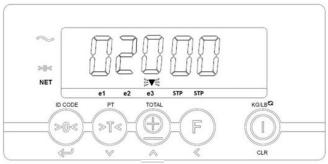
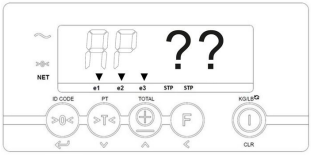


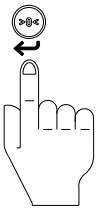
Move the pointer to e3, repeat steps 17-20.

21

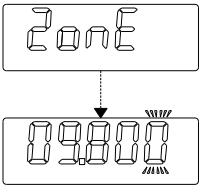


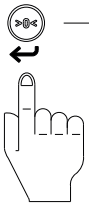
22





23

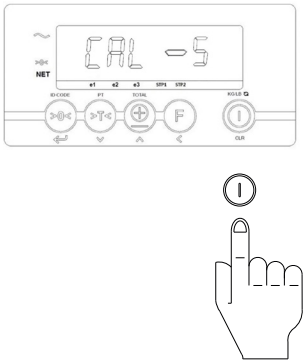




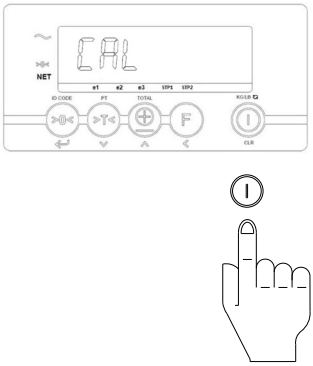
Change gravitation value if needed (enter the g-value of the current location).

Or confirm with enter.

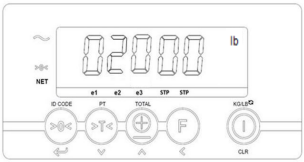
24


CAL -5
NET
e1 e2 e3 STP1 STP2
ID CODE PT TOTAL KG/LB
F
CLR

25


CAL
NET
e1 e2 e3 STP1 STP2
ID CODE PT TOTAL KG/LB
F
CLR

26


02000
lb
NET
e1 e2 e3 STP STP
ID CODE PT TOTAL KG/LB
F
CLR

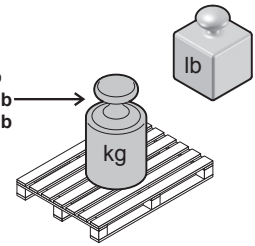
1.4 Weight calibration - legal for trade routine - UP

For legal for trade RAVAS 320 the calibration procedure is divided into a span calibration for adding weights and a span calibration for removing weights to control the hysteresis.

1 **Weight calibration – adding weights**

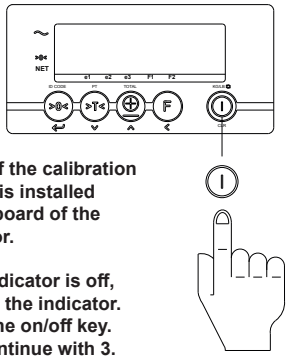
EXAMPLE:

M1 = 500 kg / 1000 lb
M2 = 1500 kg / 3000 lb
M3 = 2000 kg / 5000 lb



M = total calibration weight loaded onto RAVAS 320 (incl. pallet if used).

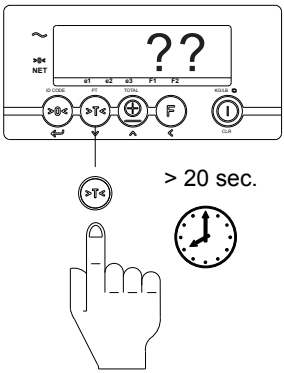
2



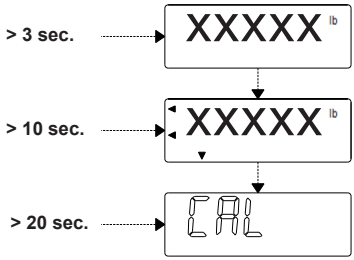
Check if the calibration jumper is installed on the board of the indicator.

If the indicator is off, start up the indicator. Press the on/off key. Else continue with 3.

3



4



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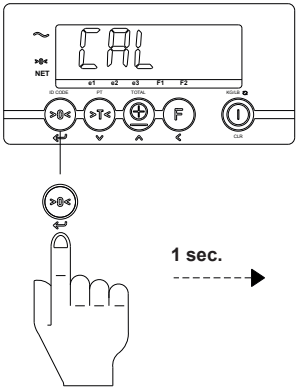

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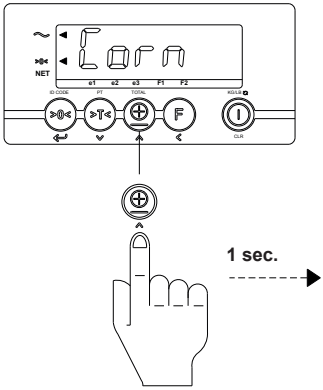

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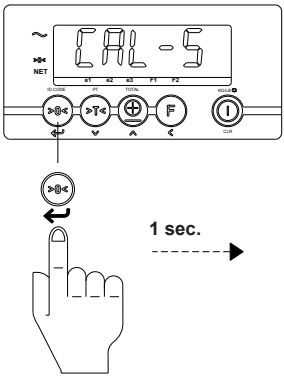

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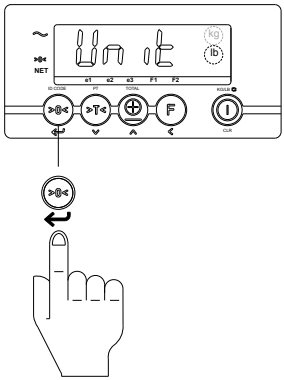
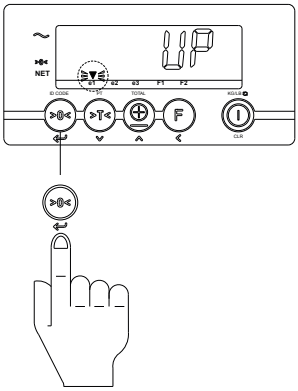
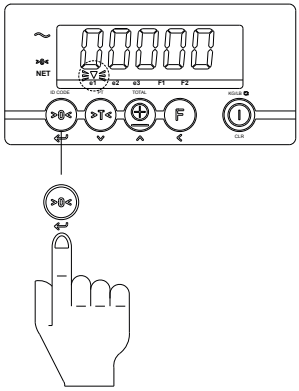


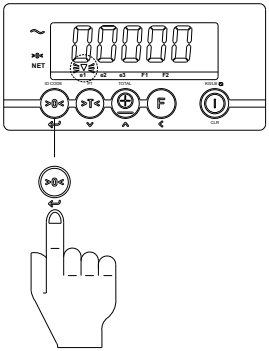
9

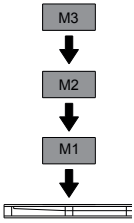


10



11 ---▶ 9 **1.3 Weight calibration - standard routine**





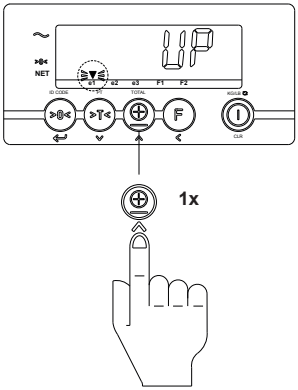
Procedure [UP]

1.5 Weight calibration - legal for trade routine – DOWN

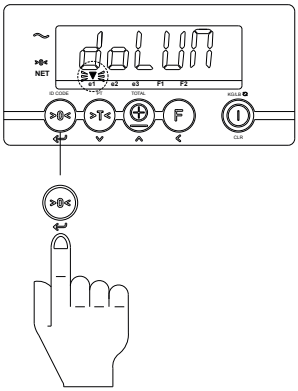
Weight calibration – removing weights

After the calibration UP procedure the display will show [UP], follow next steps for the [DOWN] calibration.

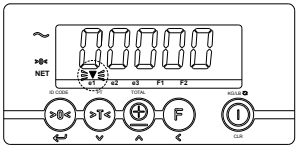
1



2

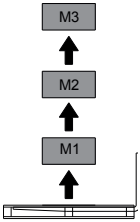


3



Perform the same calibration procedure in reversed order.

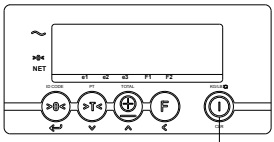
4



Procedure [DOWN]

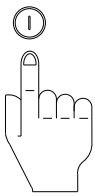
1.6 Angle calibration

1

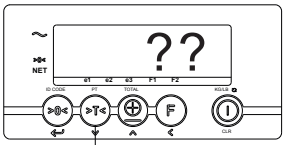


Check if the calibration jumper is installed on the board of the indicator.

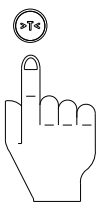
If the indicator is off, start up the indicator. Press the on/off key. Else continue with 3.



2



> 20 sec.



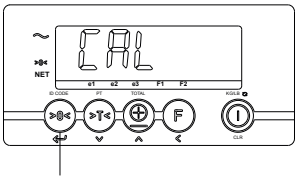
3

> 3 sec. ····▸ XXXXX lb

> 10 sec. ····▸ XXXXX lb

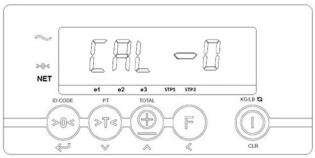
> 20 sec. ····▸ CAL

4



1 sec. ----------▸

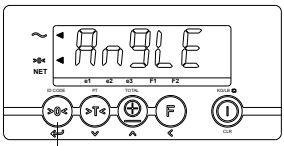
5



2x

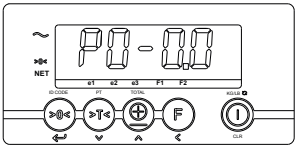
1 sec. ----------▸

6

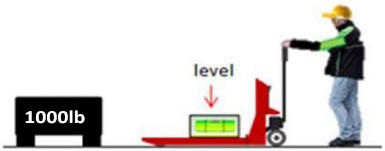


1 sec. ----------▸

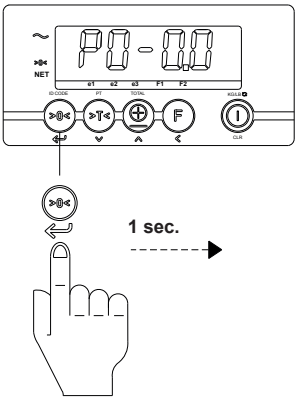
7


NET
e1 e2 e3 F1 F2
F

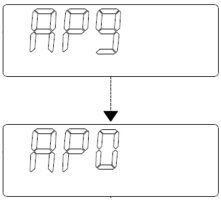
8


level
1000lb

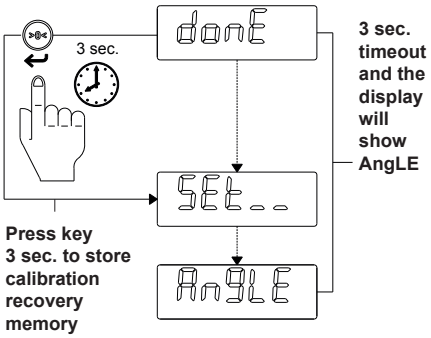
9


NET
e1 e2 e3 F1 F2
F
1 sec.

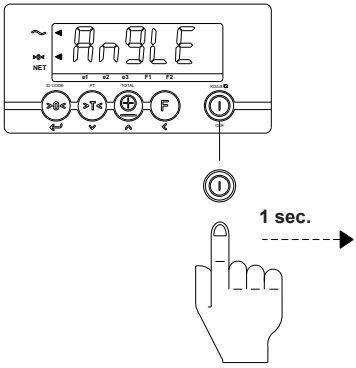
10



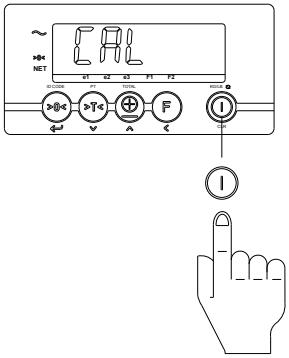
11


3 sec.
donE
SEt_ _
AnGLE
3 sec. timeout and the display will show AngLE
Press key 3 sec. to store calibration recovery memory

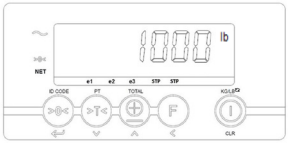
12


NET
e1 e2 e3 F1 F2
F
1 sec.

13


CAL
NET
e1 e2 e3 P1 P2
ID CODE PT TOTAL KG/LB
F

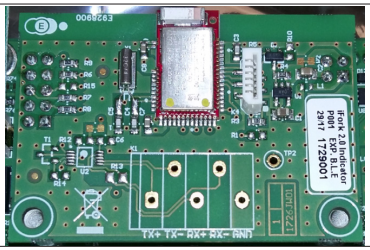
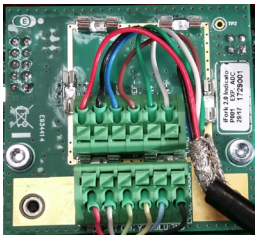
14


1000 lb
NET
e1 e2 e3 STP STP
ID CODE PT TOTAL KG/LB
F
CLR

2. Parameter settings

Note: Indicator 320 is used for wired and wireless systems. For a wired system parameter 96 should be set to 2. For a wireless system, parameter 96 should be set to 1. If Parameter 96 is set incorrectly this could lead to malfunctioning of the system.

For wireless systems the proper hardware module should be installed.

	
wireless module	1AD wired module

Enter the parameter menu:
- Switch on the indicator and HOLD the ON/OFF key for at least 30 seconds.
- After 30 seconds the indicator automatically shows: P_ _ 00.

P90 default:
If a P90 default is required please note the proper procedure for this;
- Set P01 to correct start-up units
- Set P13 to correct mode
- Make sure P96 is set to 1 for iFork application
- Perform the P90 default.

The default settings of all parameters (except P01/P13/P96) will be set accordingly. In theory there are 8 possible default setting lists possible depending on the settings of P01/P13/P96.
NOTE: to change a legal for trade OIML to legal for trade NTEP and then do a P90 default, you need to set P13 to [no] first in order to be able to change P01.

Service Call [SCALL]:
If the calibration or a parameter of a legal for trade unit has been changed more than 99 times, the indicator will block and the display will mention [SCALL]. The indicator needs to be reset by a RAVAS representative. The reset procedure is as follows;
- With [SCALL] in the display, press the on/off key for 8 seconds
  - The display will show [PASS]
- Press the Enter key
  - The display will show [00000] with the most right digit blinking
- Enter the pass code [20399]
  - The display will shortly mention [CF_01] and [CA_01] and then return to the parameter mode
- Press the CE key twice to return to the weighing mode

2.1 Parameterlist for wired indicator 320 (indicator 320)

rev.20190701

Blocked parameters if jumper placed		Defaults standard		possible settings	Defaults approved	
Required settings for approved systems		wired			wired	
Parameter	function	EU	US		OIML	NTEP
1	Calibration and start-up units	1	2	1=kg;2=lb	1	2
2	smallest graduation	0.2	0.5	0,05;0.1;0.2;0.5;1;2;5;10;20;50	0.2	1
3	biggest graduation	1	2	0,05;0.1;0.2;0.5;1;2;5;10;20;50	1	1
4	number of divisions	1000	1000	0000 to 9999 divisions	1000	1000
5	capacity	2200	5000	0 to 99999	2200	3000
6	motion detection	2	2	off;0.5;1;2;4;8;16;32 devisions/second	0,5	0,5
7	filter size	3	3	0/1/2/3 (0 = light filtering, 1 = medium filtering, 2 = high filtering, 3 = advanced filtering)	3	3
8	zero track	0.5	0.5	off;0.25;0.5;1;3 devisions	0,25	0,25
9	zero range positive	10	10	0 to 100 % of span	2	2
10	zero range negative	10	10	0 to 100 % of span	2	2
11	display service mode	basic	basic	basic;count;res10	basic	basic
12	Power On Zero	no	no	no; Yes (=±10% van max. capaciteit)	no	no
13	Approved	none	none	none;ntep;oiml;ntepC	oiml	ntep
15	units switch active	no	yes	no;yes	no	yes
16	setpoint function	0	0	0 (not used), 1 (gross overload), 2 (net overload), 3 (fill manual tare), 4 (fill auto tare), 5 (gross overload not authorize to change gross setting), 6 (net overload not authorize to change net setting), 7 (gross overload delayed), 8 (net overload delayed), 9 (gross overload delay not authorize to change gross setting), 10 (net overload delay not authorize to change net setting), 11 (gross overload+errors), 12 (gross overload+err, no changes allowed), 13 (gross overload+err, delayed), 14 (gross overload+err, no changes allowed, delayed)	0	0

17	Data protocol BLE	0	0	0 (RAVAS ASCII protocol); 1 (RDC protocol noAck on print command); 2 (remote display); 3 (printer protocol); 6 (RDC protocol with ack/nack); 7 (mobile barcode printer); 8 (scanner serial prot.)	0	0
18	gravity value working area	9.812	9.797	9.750 - 9.850	9.812	9.797
19	date/time format	Euro	USA	EUro (dd/mm/yy);USA (mm/dd/yy)	Euro	USA
20	Baudrate rs232	9600	9600		9600	9600
21	Interface protocol rs232	8_n_1	8_n_1		8_n_1	8_n_1
23	Transmissions per second remote display	5	5	0-10	5	5
24	End character rs232	LF	LF	CR;LF;CR+LF	LF	LF
25	Data protocol rs232	3	3	0 (RAVAS ASCII protocol); 1 (RDC protocol noAck on print command); 2 (remote display); 3 (printer protocol with power control); 4 (printer protocol without power control); 6 (RDC protocol with ack/nack); 7 (mobile barcode printer); 8 (scanner serial prot.)	3	3
26	number of linefeeds rs232(only valid if P25 = 3 or 4)	4	4		4	4
27	Print twice	0	0	0 = print once; 1 = print twice	0	0
28	printout format	stand	stand	stand;total;conf	stand	stand
29	header lines added	0	0	0 - 3	0	0
30	baudrate com3 (option)	9600	9600	600;1200;2400;4800;9600;19200	9600	9600
31	databits com3 (option)	8_n_1	8_n_1	8_n_1;8_n_2;7_n_1;7_n_2;7_E_1;7_E_2;7_o_1;7_o_2	8_n_1	8_n_1
32	end character com3 (option)	cr	cr	cr;lf;crlf	cr	cr
35	protocol com3 (option)	0	0	0 (RAVAS ASCII protocol); 1 (RDC protocol noAck on print command); 2 (remote display); 4 (printer protocol); 6 (RDC protocol with ack/nack); 7 (mobile barcode printer); 8 (scanner serial prot.)	0	0
36	number of linefeeds com3 (option) (only valid if P25 = 3 or 4)	4	4	0 to 9	4	4
40	level switch	no	no	no;CS FA;CS rA;CS LS;G-SrA;G-SlS	CS LS	CS LS
41	delay time ls	1	1	0 to 9 seconds	1	1

42	P42=correction +X → tip of the forks tilted backwards	1.0	1.0	0.1 to 10.0	1.0	1.0
43	P43=correction –X → tip of the forks tilted forwards	1.0	1.0	0.1 to 10.0	1.0	1.0
44	P44=correction +Y → forks tilted to the left	1.0	1.0	0.1 to 10.0	1.0	1.0
45	P45=correction –Y → forks tilted to the right	1.0	1.0	0.1 to 10.0	1.0	1.0
46	level filter	3	3	0/1/2/3 (0 = light filtering, 1 = medium filtering, 2 = high filtering, 3 = advanced filtering)	3	3
47	switch-off angle X-axis (driving direction)	5.0	5.0	0.0°-9.9°	2.6	2.6
48	switch-off angle Y-axis (transverse direction)	5.0	5.0	0.0°-9.9°	2.6	2.6
49	underload % of FS	10	10	2	2	2
59	measuring frequency (not used for iForks)	80	80	10-80Hz	80	80
60	battery used indicator	12	12	4,8V; 6V; 7,4: 12V;14,8: FL; Cust	12	12
61	low bat switch off time indicator (only 320-BLE)	-	-	off;1 to 99 minutes	-	-
62	battery used iForks (only 320-BLE)	-	-	3.7V; 4.8V; 6V; Cust.	-	-
63	auto shut-off time BLT forks (only 320-BLE)	-	-	0 (never off); 30 minutes; 60 minutes; 120 minutes	-	-
64	low bat switch off time BLT forks (only 320-BLE)	-	-	off;1 to 99 uren	-	-
68	buzzer output function active (gross overload)	0	0	0 = No; 1-99999 = Yes (gross overload)	no	no
70	tare clear	no	no	no : tare reamains in memory after new weight has been picked yes : tare is cleared after new weight is picked (default if P13 = OIML)	yes	yes
71	TIP load threshold (only 320-BLE)	-	-	0 = off 1-999% of scales capacity	-	-
72	SIDE Load threshhold (only 320-BLE)	-	-	0 = off 1-999% of scales capacity	-	-

80	enable/disable digital corner calibration (only 320-BLE)	-	-	0 (enabled); 1 (disabled)	-	-
81	compensation factor digital corner A (only 320-BLE)	-	-		-	-
82	compensation factor digital corner B (only 320-BLE)	-	-		-	-
83	compensation factor digital corner C (only 320-BLE)	-	-		-	-
84	compensation factor digital corner D (only 320-BLE)	-	-		-	-
85	change BLT Adress F1-F2 (for service only) (only 320-BLE)	-	-		-	-
86	Performance setting iForks (for service only) (only 320-BLE)	-	-	0 = default (for forkmodule firmware <V1,01), 1 = error hysteresis and F1_F2 displayed, 2 = only error hysteresis, 3 = as 1 but ignoring defragmented messages, 4 = error hysteresis and F1-F2, 6 = ingoring defragmented messages + error hysteresis + F1-F2.	0	0
87	Reset audit trail no. (for factory only)					
88	Application version					
90	recover factory default parameter settings only, based on actual P01/P13/ P96 setting					
91	recover initial parameter settings + calibration from backup (P94)					
92	recover last (re-)calibration only.					
93	read out last 50 error messages (with timestamp)	00-00	00-00		00-00	00-00
94	backup initial prmtr. settings + calibration	00000	00000		00000	00000
96	set Application	2	2	1 = BLE Master; 2 = 1AD; 3 = RS485 (future)	2	2
97	key test function (buzzer and nr)					
98	scale id number	1	1	0 to 999	1	1
99	metreological version (shown at start-up)	1.01	1.01		1.01	1.01

Leave the parameter menu and store all entries by pressing 2 times shortly on the CLR key.

2.2 Parameterlist for wireless indicator 320 (indicator 320-BLE)

rev.20190701

Blocked parameters if jumper placed		Defaults standard		possible settings	Defaults approved	
Required settings for approved systems		320-BLE (wireless)			320-BLE (wireless)	
Parameter	function	EU	US		OIML	NTEP
1	Calibration and start-up units	1	2	1=kg;2=lb	1	2
2	smallest graduation	1	2	0,05;0.1;0.2;0.5;1;2;5;10;20;50	1	2
3	biggest graduation	2	5	0,05;0.1;0.2;0.5;1;2;5;10;20;50	2	5
4	number of divisions	1000	1000	0000 to 9999 divisions	1000	1000
5	capacity	2500	5000	0 to 99999	2500	5000
6	motion detection	2	2	off;0.5;1;2;4;8;16;32 devisions/second	0,5	0,5
7	filter size	3	3	0/1/2/3 (0 = light filtering, 1 = medium filtering, 2 = high filtering, 3 = advanced filtering)	3	3
8	zero track	0.5	0.5	off;0.25;0.5;1;3 devisions	0,25	0,25
9	zero range positive	10	10	0 to 100 % of span	2	2
10	zero range negative	10	10	0 to 100 % of span	2	2
11	display service mode	basic	basic	basic;count;res10	basic	basic
12	Power On Zero	no	no	no; Yes (=±10% van max. capaciteit)	no	no
13	Approved	none	none	none;ntep;oiml;ntepC	oiml	ntep
15	units switch active	yes	yes	no;yes	no	yes
16	setpoint function	0	0	0 (not used), 1 (gross overload), 2 (net overload), 3 (fill manual tare), 4 (fill auto tare), 5 (gross overload not authorize to change gross setting), 6 (net overload not authorize to change net setting), 7 (gross overload delayed), 8 (net overload delayed), 9 (gross overload delay not authorize to change gross setting), 10 (net overload delay not authorize to change net setting), 11 (gross overload+errors), 12 (gross overload+err, no changes allowed), 13 (gross overload+err, delayed), 14 (gross overload+err, no changes allowed, delayed)	0	0

17	Data protocol BLE	0	0	0 (RAVAS ASCII protocol); 1 (RDC protocol noAck on print command); 2 (remote display); 3 (printer protocol); 6 (RDC protocol with ack/nack); 7 (mobile barcode printer); 8 (scanner serial prot.)	0	0
18	gravity value working area	9.812	9.797	9.750 - 9.850	9.812	9.797
19	date/time format	Euro	USA	EUro (dd/mm/yy);USA (mm/dd/yy)	Euro	USA
20	Baudrate rs232	9600	9600		9600	9600
21	Interface protocol rs232	8_n_1	8_n_1		8_n_1	8_n_1
23	Transmissions per second remote display	5	5	0-10	5	5
24	End character rs232	LF	LF	CR;LF;CR+LF	LF	LF
25	Data protocol rs232	3	3	0 (RAVAS ASCII protocol); 1 (RDC protocol noAck on print command); 2 (remote display); 3 (printer protocol with power control); 4 (printer protocol without power control); 6 (RDC protocol with ack/nack); 7 (mobile barcode printer); 8 (scanner serial prot.)	3	3
26	number of linefeeds rs232(only valid if P25 = 3 or 4)	4	4		4	4
27	Print twice	0	0	0 = print once; 1 = print twice	0	0
28	printout format	stand	stand	stand;total;conf	stand	stand
29	header lines added	0	0	0 - 3	0	0
30	baudrate com3 (option)	9600	9600	600;1200;2400;4800;9600;19200	9600	9600
31	databits com3 (option)	8_n_1	8_n_1	8_n_1;8_n_2;7_n_1;7_n_2;7_E_1;7_E_2;7_o_1;7_o_2	8_n_1	8_n_1
32	end character com3 (option)	cr	cr	cr;lf;crlf	cr	cr
35	protocol com3 (option)	0	0	0 (RAVAS ASCII protocol); 1 (RDC protocol noAck on print command); 2 (remote display); 4 (printer protocol); 6 (RDC protocol with ack/nack); 7 (mobile barcode printer); 8 (scanner serial prot.)	0	0
36	number of linefeeds com3 (option) (only valid if P25 = 3 or 4)	4	4	0 to 9	4	4
40	level switch	G-SrA	G-SrA	no;CS FA;CS rA;CS LS;G-SrA;G-SlS	G-SrA	G-SrA
41	delay time ls	1	1	0 to 9 seconds	1	1

42	P42=correction +X → tip of the forks tilted backwards	1.0	1.0	0.1 to 10.0	1.0	1.0
43	P43=correction –X → tip of the forks tilted forwards	1.0	1.0	0.1 to 10.0	1.0	1.0
44	P44=correction +Y → forks tilted to the left	1.0	1.0	0.1 to 10.0	1.0	1.0
45	P45=correction –Y → forks tilted to the right	1.0	1.0	0.1 to 10.0	1.0	1.0
46	level filter	3	3	0/1/2/3 (0 = light filtering, 1 = medium filtering, 2 = high filtering, 3 = advanced filtering)	3	3
47	switch-off angle X-axis (driving direction)	5.0	5.0	0.0°-9.9°	2.8	2.8
48	switch-off angle Y-axis (transverse direction)	5.0	5.0	0.0°-9.9°	2.0	2.0
49	underload % of FS	10	10	2	2	2
59	measuring frequency (not used for iForks)	10	10	10-80Hz	10	10
60	battery used indicator	6	6	4,8V; 6V; 7,4: 12V;14,8: FL; Cust	6	6
61	low bat switch off time indicator (only 3200-BLE)	2	2	off;1 to 99 minutes	2	2
62	battery used iForks (only 3200-BLE)	3.7	3.7	3.7V; 4.8V; 6V; Cust.	3.7	3.7
63	auto shut-off time BLT forks (only 3200-BLE)	120	120	0 (never off); 30 minutes; 60 minutes; 120 minutes	120	120
64	low bat switch off time BLT forks (only 3200-BLE)	8	8	off;1 to 99 uren	8	8
68	buzzer output function active (gross overload)	0	0	0 = No; 1-99999 = Yes (gross overload)	no	no
70	tare clear	no	no	no : tare reamains in memory after new weight has been picked yes : tare is cleared after new weight is picked (default if P13 = OIML)	yes	yes
71	TIP load threshold (only 3200-BLE)	120	120	0 = off 1-999% of scales capacity	120	120
72	SIDE Load threshhold (only 3200-BLE)	30	30	0 = off 1-999% of scales capacity	30	30

80	enable/disable digital corner calibration (only 3200-BLE)	0	0	0 (enabled); 1 (disabled)	0	0
81	compensation factor digital corner A (only 3200-BLE)	1.000	1.000		1.000	1.000
82	compensation factor digital corner B (only 3200-BLE)	1.000	1.000		1.000	1.000
83	compensation factor digital corner C (only 3200-BLE)	1.000	1.000		1.000	1.000
84	compensation factor digital corner D (only 3200-BLE)	1.000	1.000		1.000	1.000
85	change BLT Adress F1-F2 (for service only) (only 3200-BLE)					
86	Performance setting iForks (for service only) (only 3200-BLE)	0	0	0 = default (for forkmodule firmware <V1,01), 1 = error hysteresis and F1_F2 displayed, 2 = only error hysteresis, 3 = as 1 but ignoring defragmented messages, 4 = error hysteresis and F1-F2, 6 = ingoring defragmented messages + error hysteresis + F1-F2.	0	0
87	Reset audit trail no. (for factory only)					
88	Application version					
90	recover factory default parameter settings only, based on actual P01/P13/ P96 setting					
91	recover initial parameter settings + calibration from backup (P94)					
92	recover last (re-)calibration only.					
93	read out last 50 error messages (with timestamp)	00-00	00-00		00-00	00-00
94	backup initial prmtr. settings + calibration	00000	00000		00000	00000
96	set Application	1	1	1 = BLE Master; 2 = 1AD; 3 = RS485 (future)	1	1
97	key test function (buzzer and nr)					
98	scale id number	1	1	0 to 999	1	1
99	metreological version (shown at start-up)	1.01	1.01		1.01	1.01

Leave the parameter menu and store all entries by pressing 2 times shortly on the CLR key.

2.3 To backup initial parameter settings + calibration

► Enter the parameter menu as described in chapter 2, parameter settings
► Check if all parameter settings are set according to customer requirements
Such as g-force for destination, data communication, printer and other peripherals
► Use the arrow keys up & down & shift to go to parameter setting 94
 The display shows 00000 the right digit flashes
► Key in the password “XXXXX” and push the Enter key to comfirm
 The display shows Set-- for 4 seconds
 The display shows P96
► Push the on/off key 2 times to leave the parameter setting menu

2.4 Check the (last) stored calibration memory

► Enter parameter menu as described in chapter 2, parameter settings
► Check if parameter settings 1 to 5 are correct according to the EU or US settings
(see your machine sticker)
► Use the arrow keys up & down & shift to go to parameter setting 92
 The display shows FC-bE
► Check the stored corner calibration by pushing the down key
 The display shows all 4 corner calibration values in sequence
► Check the stored zero calibration & weight calibration values by pushing the up key
 The displays shows the following values:
- UNIT = calibration unit in kg or lb
- Gravity = gravitation value entered in weight calibration
- ZERO = internal ADC value
- CAL E1-E3 = weight & internal ADC value will be showed 3 times
The final value showed is the number of valid calibration point

2.5 To change US setting into EU or EU settings into US; Recover calibration settings

► Enter parameter menu as described in chapter 2, parameter settings
► Check if parameter settings 1 to 5 are correct according to the EU or US settings
(see your machine sticker)
► Use the arrow keys up & down & shift to go to parameter setting 92
 The display shows FC-bE
► Press the enter key for 3 seconds
 The display shows DONE for 2 seconds
 The display shows P93
► Push the on/off key 2 times
The display shows SET

2.6 To recover initial parameter settings + calibration

► Enter the parameter menu as described in chapter 2, parameter settings
► Use the arrow keys up & down & shift to go to parameter setting 91
Press the enter key
 The display shows Set—for 10 seconds
 The display shows P92
► Push the on/off key 2 times to leave the parameter setting menu

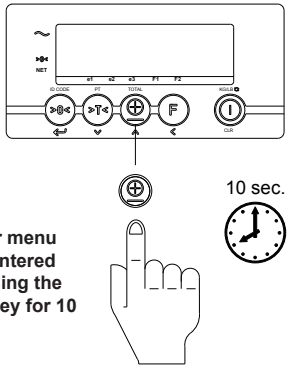
2.7 Relay function - optional

The 3200 indicator has the possibility to setup limit values for relay settings. The different options for relay settings are:

- overload on gross weight
- overload on net weight
- dosing / filling with manual tare & start
- dosing / filling with automatic tare & start

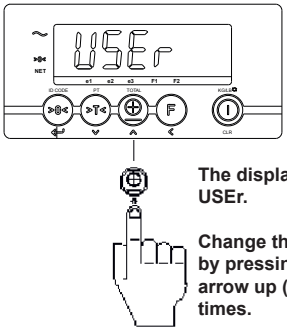
2.7.1 Activate relay function

1



The user menu can be entered by pressing the TOTAL key for 10 sec.

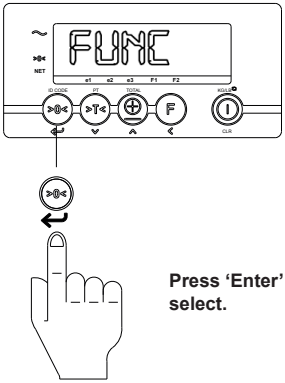
2



The display shows USEr.

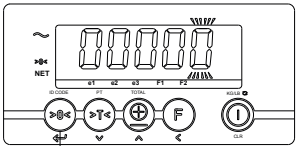
Change the menu by pressing the arrow up (^) key 2 times.

3



Press 'Enter' to select.

4



The display shows 00000 with the most right digit blinking.
The indicator asks for a password (5220).

Enter the password using the arrow left (<) key every time you want to shift one digit to the left.

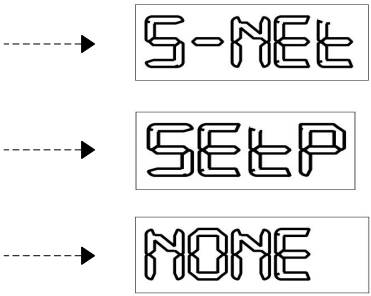
Use the arrow up (^) key to enter the number according to the given password.

Confirm with 'Enter'.

5

Within the 'FUNC(tion)' menu you can choose from three functions: S-NEt, SEtP or NONE.

You can switch to another function by pressing the arrow up (^) or arrow down (ˇ) key, then confirm with 'Enter'.



Function	Note	Settings	3200-BLE	3200 wired
None: Setting the fuctionality of the function key [F-key] to none.	Function key is not active		NonE	NonE
SEtP: Setting the fuctionality of the function key [F-key] to setpoint activation.	For sub functions see next paragraph.	FILL/Oload	FILL	FILL
S-Net: Setting the fuctionality of the function key [F-key] to send net weight.	The net value will be send after pressing the F-key. No units will be mentioned.	The port of communication needs to be set to [Scan] in order for [S-Net] to work.		

6

Once you have entered one of the subfunctions, you can scroll through these menus again by using the arrow up (^) or down arrow (ˇ) key,

When you reach the preferred setting, confirm with 'Enter'.

Sub function	Note	Settings	3200-BLE	3200 wired
FILL: Selecting the filling/dosing functionality	AUtO.t: scale is automatically tared out after activating the setpoint(s)	AUtO.t/PuSHb	AUtO.t	AUtO.t
	PuSHb: scale needs to be tared out manually by pressing the tare-key			
OLOAd: selecting the overload functionality	NEt: overload is set on the net weight	NEt/grOSS	Net|Aut-Y| dELAY-0	Net|Aut-Y| dELAY-0
	grOSS: overload is set on gross weight			
	AUt-N: Authaurization required, overload value can only be changed by supervisor	AUt-Y/Aut-N		
	Aut-Y: Authaurization not required, overload value may be changed by operator	AUt-Y/Aut-N		
	dELAY: delay time for the overload to be activated	0-9 seconden		

3. Indicator startup routine

Sequence in the display, when powering ON the iForks indicator:

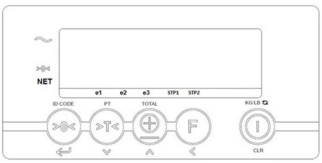
► Full display “88888”, green backlight
► Software version number: x.xx, red backlight
► CF number (only shown if OIML or NTEP), green backlight
► CA number (only shown if OIML or NTEP), green backlight
► Gravitation value of calibration area (only shown if OIML or NTEP), green backlight
► Actual weight, green backlight

- CF number = parameter audit trail number
  -> counter +1 every time an essential (weighing) parameter is changed
- CA number = calibration audit trail number
  -> counter +1 every time a new calibration is done

Note:
- For legal-for-trade scales: the indicator shows both the new CF and CA number during start-up

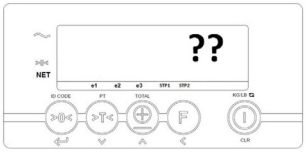
4. Debug mode

1



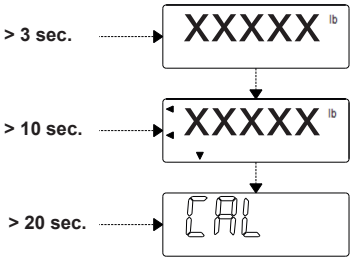
Start up the indicator. Press the on/off key.

2

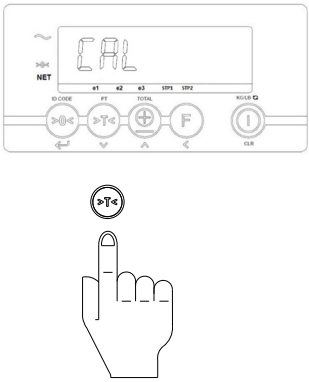


> 20 sec.

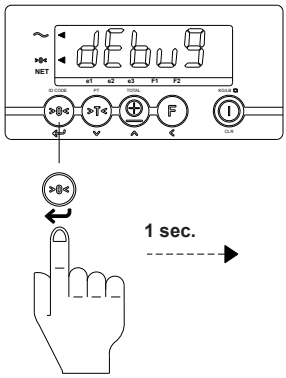
3


> 3 sec.
XXXXX lb
> 10 sec.
XXXXX lb
> 20 sec.
CAL

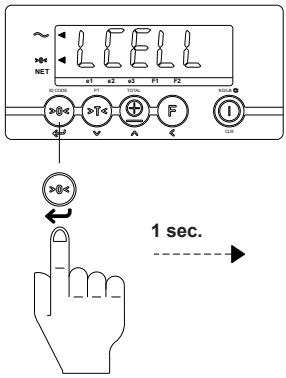
4


CAL
NET

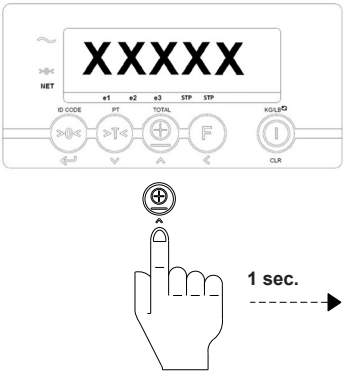
5


dEbu9
NET
1 sec.

6

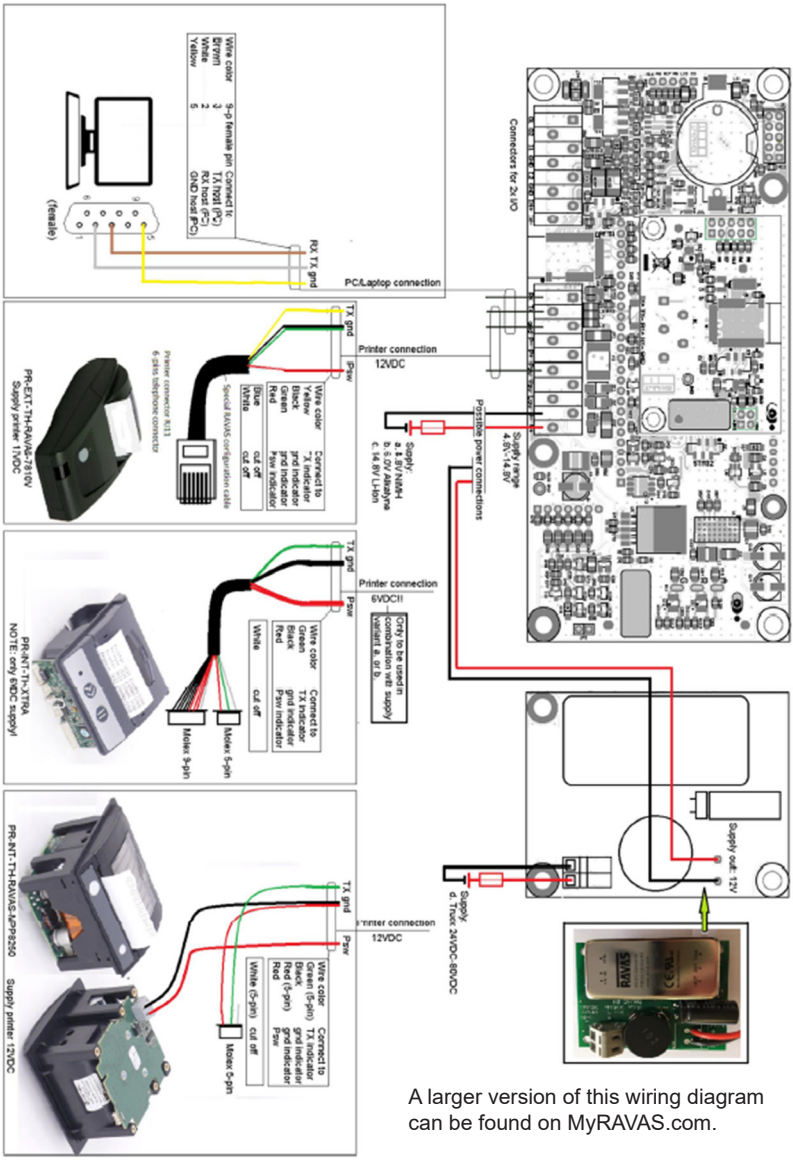

LCELL
NET
1 sec.

7


XXXXX
NET
1 sec.

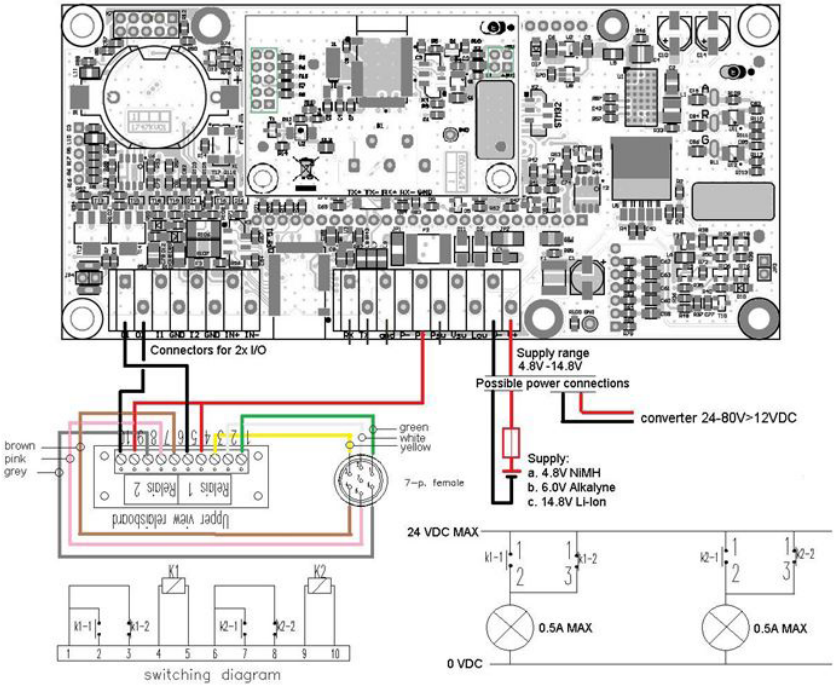
5. Indicator wiring

5.1 Indicator wiring RS232 port and supply



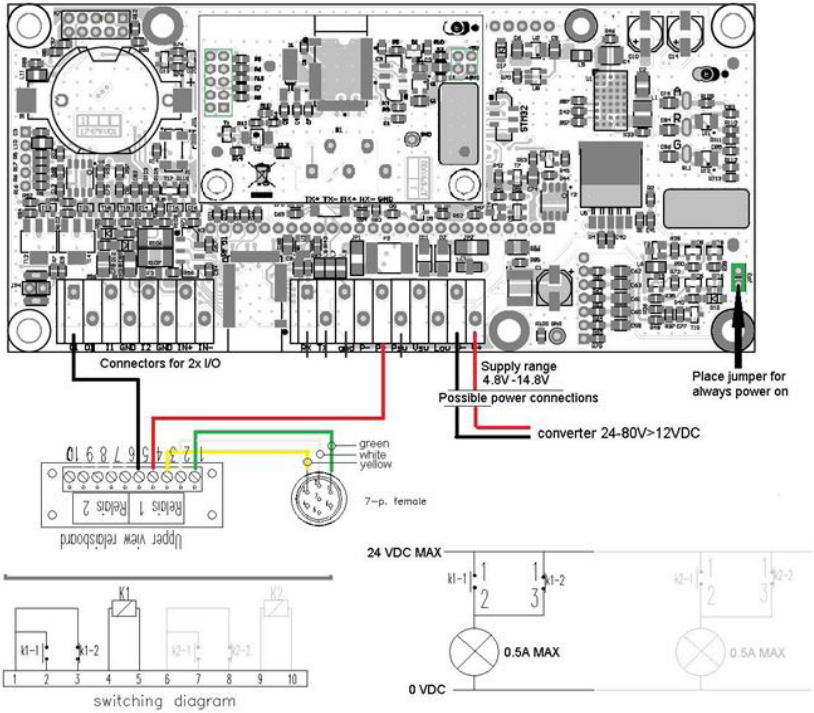
A larger version of this wiring diagram can be found on MyRAVAS.com.

5.2 Relais wiring for dosing and filling



Description	Connector relays board	Wire color	7-pins female connector
Potential contact relay 1	Pin no. 1	Green	Pin no. 1
Make contact relay 1	Pin no. 2	White	Pin no.2
Break contact relay 1	Pin no. 3	Yellow	Pin no. 3
Potential contact relay 2	Pin no. 6	Brown	Pin no. 4
Make contact relay 2	Pin no. 7	Pink	Pin no. 5
Break contact relay 2	Pin no. 8	Grey	Pin no. 6

5.3 Relais wiring for overload



Description	Connector relays board	Wire color	7-pins female connector
Potential contact relay 1	Pin no. 1	Green	Pin no. 1
Make contact relay 1	Pin no. 2	White	Pin no.2
Break contact relay 1	Pin no. 3	Yellow	Pin no. 3

6. Power consumption @12VDC

mode Indicator	320 Indicator	320 + Wifi	Fork module (@3.7VDC)
On	30 mA	80 mA	25 mA
Sleep	20 mA	70 mA	2 mA
Deep sleep	-	-	0.01 mA
Off	0 mA	0 mA	0 mA
Backlight off	-2 mA	-2 mA	-
Backlight res	+6 mA	+6 mA	-

7. Overview power save settings (auto shut-off)

Overview of Auto shut-off and Sleep settings. The settings mentioned below are the standard settings and advised by RAVAS for optimal use. These settings can be changed in the user menu, as described above.

Auto Shut-off & Sleep Settings

		RPW-EL 320 6v	RPW-EL 320 truck supply	RPW-EL 320 auto on
Options -> WiFi / RS / Bluetooth	SLEEP	not possible	0	0
	A_OFF	not possible	0	0
	P60	6	FLT	FLT
No options / Printer 6v	SLEEP	2	30	0
	A_OFF	5	0	0
	P60	6	FLT	FLT

		RAVAS 320	RAVAS 320 Li
Options -> WiFi / RS / Bluetooth	SLEEP	0	0
	A_OFF	30	30
	P60	12	14.8
No options	SLEEP	20	20
	A_OFF	30	30
	P60	12	14.8

		iForks 6v	iForks truck supply	iForks auto on
Options -> WiFi / RS / Bluetooth	SLEEP	not possible	0	0
	A_OFF	not possible	0	0
	P60	6	FLT	FLT
No options / Printer 6v	SLEEP	2	30	0
	A_OFF	5	0	0
	P60	6	FLT	FLT

		RWV-C truck supply	RWV-C auto on
Options -> WiFi / RS / Bluetooth	SLEEP	0	0
	A_OFF	0	0
	P60	FLT	FLT
No options	SLEEP	0	0
	A_OFF	0	0
	P60	FLT	FLT

		RPW-ST 320 6v	RPW-ST 320 truck supply	RPW-ST 320 auto on	RPW-ST-BLE 320 6v (no printer)	RPW-ST-BLE 320 truck supply	RPW-ST-BLE 320 auto on
Options -> WiFi / RS / Bluetooth	SLEEP	not possible	0	0	not possible	0	0
	A_OFF	not possible	0	0	not possible	0	0
	P60	6	FLT	FLT	6	FLT	FLT
No options / Printer 6v	SLEEP	2	30	0	2	30	0
	A_OFF	5	0	0	5	0	0
	P60	6	FLT	FLT	6	FLT	FLT