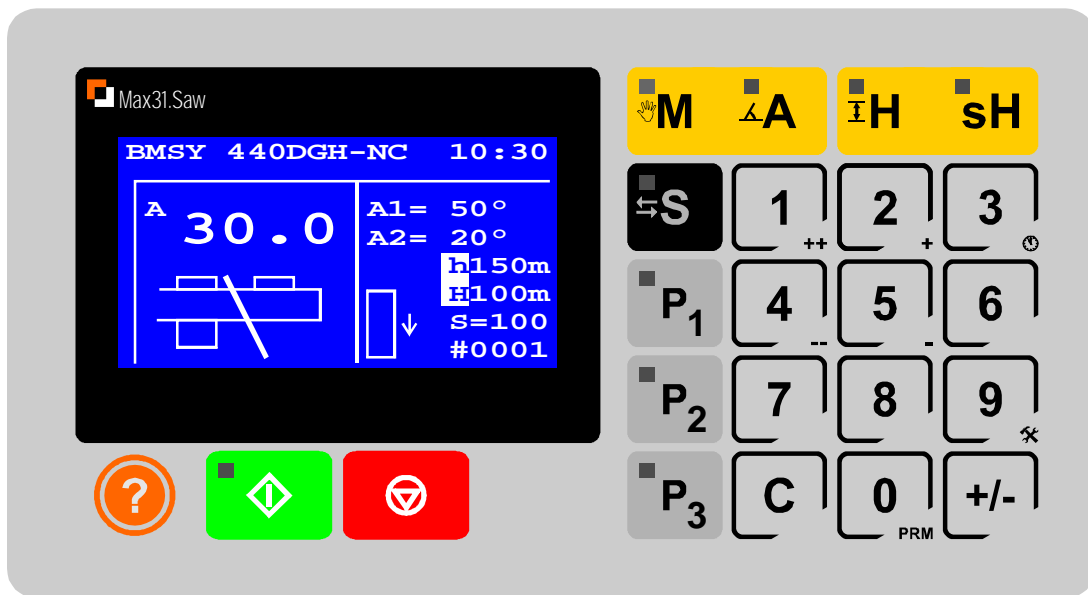


Max31.Saw

Full Automatic Saw Controller

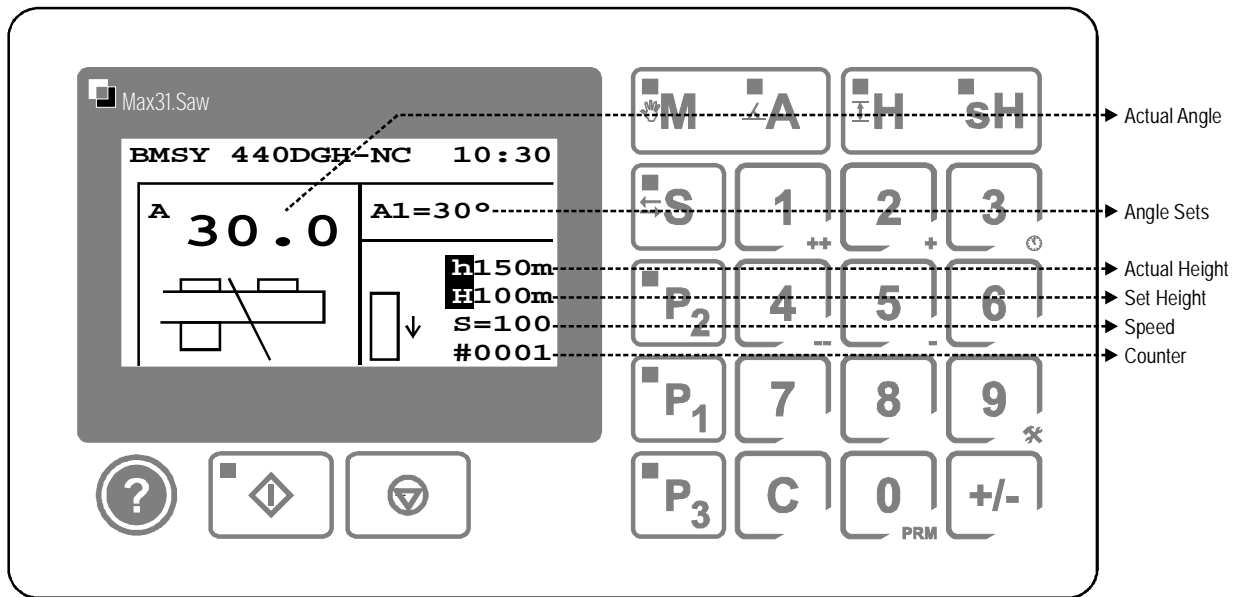


Operating Manual

(MAX31SawV10UMR1EN.CDR - 0916 rev 1.0)

2-Axis Control (Encoder feedback), 2 speed positioning,
Manual ve Auto positioning, 3 quick program buttons,
Analog output (0-10V) for sawing speed,
LCD graphic display 128x64 dot, Help button, Service display,
Real time clock, User friendly, Removable memory module


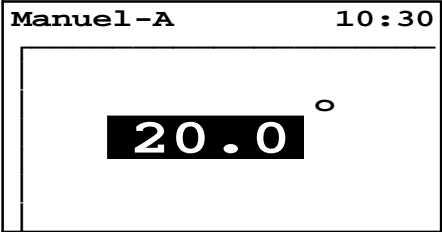





1.1 - FRONT VIEW




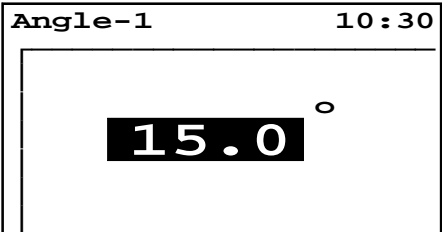


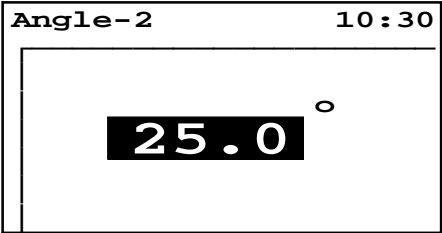


1.2 - KEYPAD

	START (Ok)		1 / SPEED +10 if main screen / ANGLE FAST FORWARD if manual mode	
	STOP (Cancel)		2 / SPEED +1 if main screen / ANGLE SLOW FORWARD if manual mode	
	MANUAL (Angle)		3	
	AUTO (Angle)		4 / SPEED -10 if main screen / ANGLE FAST BACKWARD if manual mode	
	HEIGHT (H)		5 / SPEED -1 if main screen / ANGLE SLOW BACKWARD if manual mode	
	HIGHT TEACH (H ! h)		6	
	1.PROGRAM (Angle, height, Speed)		7	
	2.PROGRAM		8	
	3.PROGRAM		9 / SERVICE	
	SAW SPEEDI (0-10V)		0 / PARAMETER	
	CLS / Counter Reset		+/- SIGN	

2.1 - MANUAL (ANGLE)


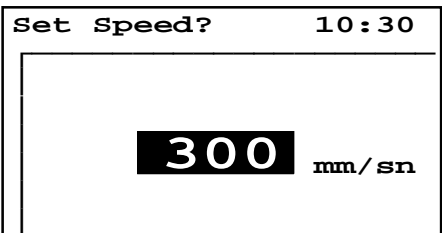


	Press M (when the display shows main screen)	
	Press ++ to move forward fast	
	Press + to move forward slow	
	Press -- to move backward fast	
	Press -- to move backward slow	
	Press STOP to exit	

2.2 - AUTO (ANGLE)





	Press A (when the display shows main screen)	
	Enter angle set value	
	Press again A if a second angle is required	
	Enter the second angle set value	
	Press START,	

Run output is activated but wait the Ready input (saw head raises to top position) When the saw angle positioned at wanted position the controller sets the outputs to move to the desired angle. As it reaches a distance from its destination equal to Pr.4, it will drop the high speed output and the drive will move with slow speed to the desired angle, when set angle is reached run outputs are deactivated.
 Note: Output (Zone) relay closes if angle pos is negative.

3 - SAW SPEED

	Press S (when the display shows main screen)	
	Enter the sawing speed set value	
	Press START (New set value is taken to 0-10V analog output.)	

or
at the Main screen

				Press 1/2/4/5 for quick speed change
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4.1 - SET HEAD HEIGHT



Press H (when the display shows main screen)



Enter the height set value

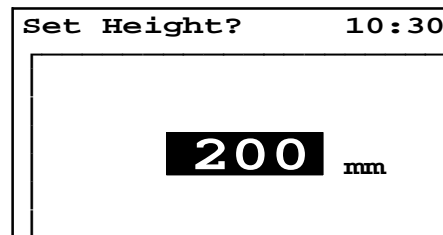


Press START

[Not.1] Output relay (H-LMT) contacts closes if the head position passes over this soft limit value

[Not.2] If the entered limit value is greater than the existing head pos.,

Output (H-OUT) relay contacts closes 1 sec. to bring the head to this new position.

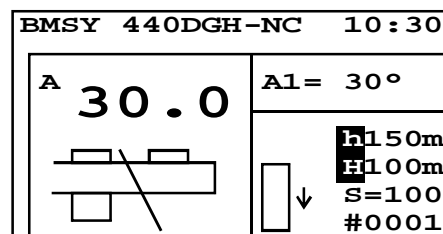


4.2 - SAW HEAD POSITION TEACH



Press sH (when the display shows main screen)

The existing height of the saw head is taught to the controller and shown on the display.

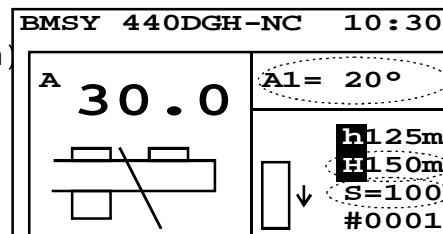


5.1 - PROGRAM SELECT (3 programs)



Press P₁ (or P₂ or P₃) (when the display shows main screen)

The recalled programs contains the stored set values for angle, height and sawing speed.



5.2 - PROGRAM TEACH



(3sn.)

Press P₁ (or P₂ or P₃) for 3 sec. (when the display shows main screen)
(till its led is off)



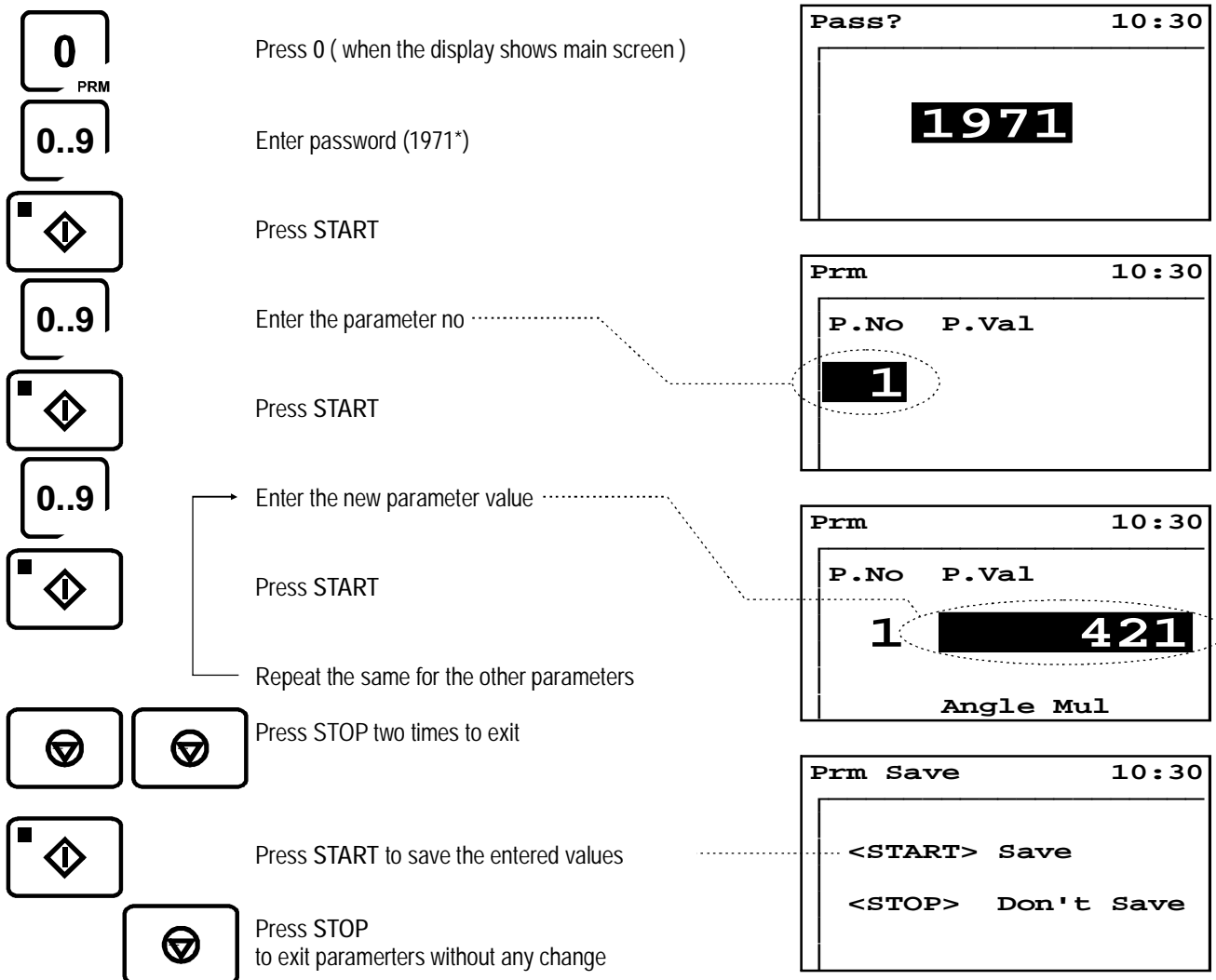
(3sn.)

Angle, Height and speed writes to memory



(3sn.)

6 - PARAMETERS



No	Parameter		Range	Factory	User
1	Angle Mul	Angle encoder multiplier	1-9999	541	
2	Angle Div	Angle encoder divider	1-9999	6396	
3	Angle Tol	Angle tolerance	0.1-9.9	0.1	
4	Angle Slow	Angle Slow distance	0.1-99.9	4.0	
5	Angle Min	Angle Min. Set value	-60.0-60.0	-60.0	
6	Angle Max	Angle Max. Set value	-60.0-60.0	60.0	
7	Angle Rst	Angle Reset value	-60.0-60.0	-60.0	
8	Angle Zero*	Clamp pos. at the zero angle	0-1	0	
9	H-Set Min	Head pos. min. limit	0-999	10	
10	H-Set Max	Head pos. max. limit	0-999	450	
11	H-Reset	Head height Reset value	0-999	450	
12	Speed Min	Saw speed min. set	0-999	20	
13	Speed Max	Saw speed max. set	0-999	120	
14	Speed Out Max	Saw speed (mm/min) for 10V out	0-999	120	
15	Pass	Password	0-9999	1971	

(*) NOTE : Clamp pos. at zero angle 0: at the right 1: at the left
If this parameter is changed, manual or auto positioning is needed.

EX-FACT



Switch off the supply, press 1 and keep pressing 1 and switch on the supply keep pressing till the display shows "factory loaded".

7.1 - ANGLE CALIBRATION (POSITION CORRECTION)

	Press A for 10 sec. (when the display shows main screen)	Pass? 10:30 <div style="text-align: center; border: 1px solid black; padding: 10px; width: 100px; margin: 0 auto;">1971</div>
	Enter the Password (1971*)	
	Press START	
	Enter the new angle value	Angle Cal 10:30 <div style="text-align: center; border: 1px solid black; padding: 10px; width: 100px; margin: 0 auto;">-45.0°</div>
	Press START	

7.2 - HEAD HEIGHT CALIBRATION

	Press H for 10 sec. (when the display shows main screen)	Pass? 10:30 <div style="text-align: center; border: 1px solid black; padding: 10px; width: 100px; margin: 0 auto;">1971</div>
	Enter the Password (1971*)	
	Press START	
	Enter the new head height value	Height Cal 10:30 <div style="text-align: center; border: 1px solid black; padding: 10px; width: 100px; margin: 0 auto;">200 mm</div>
	Press START	

7.3 - AUTO CALIBRATION

By switch-on, cal.mode is asked. For auto cal. mode, just press START to activate RUN output (contact close) signals PLC to rise the saw head to the top switch. Then saw head movement stops and PLC send READY signal (closes) to saw controller to start angle positioning toward A-RST switch. Angle positioning outputs continue to be active for 1 sec after A-RST switch is closed, then positioning stops, just at this moment calibration values (pr.8 and pr.11 respectively) are transferred as actual value and angle, height positions are displayed on the screen.

8 - SERVICE MENU

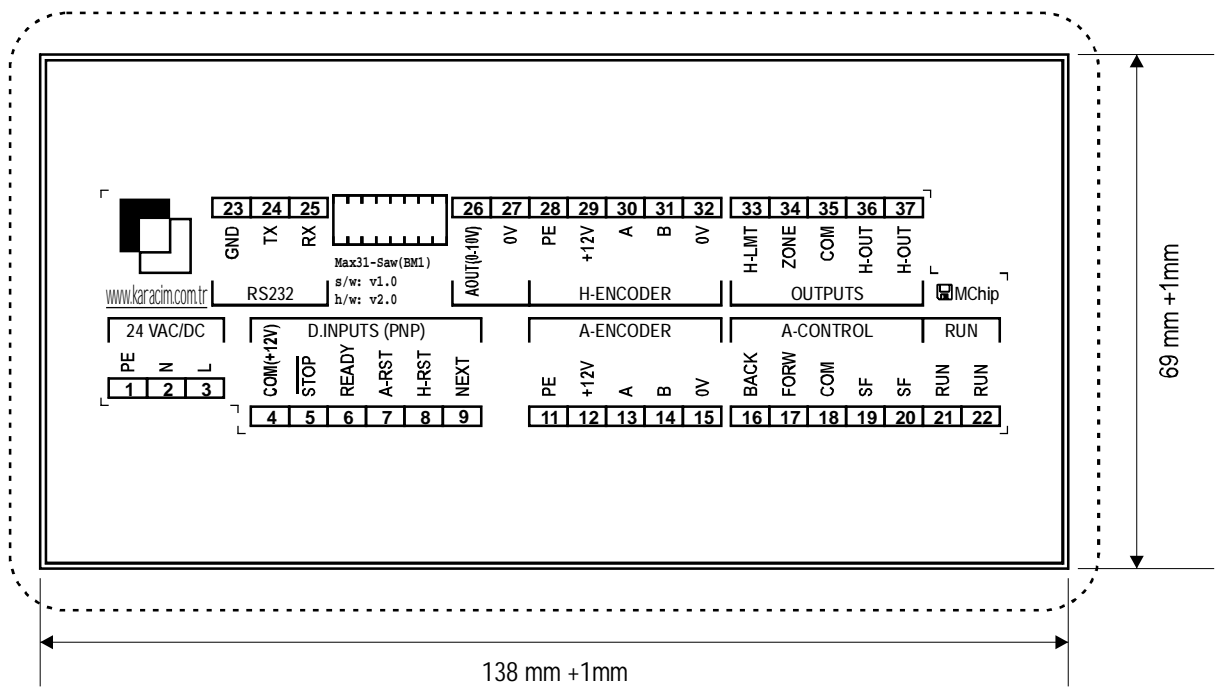
	Press 9 (when the display shows main screen) and keep pressing and switch on the supply	10:30 <div style="text-align: center; border: 1px solid black; padding: 10px; width: 100px; margin: 0 auto;"> I SRAH2 Encoder A = 724 Encoder H = 834 </div>
	Press 3 to enter the date and clock	

Digital inputs
(selected are activate)

S	[5]	STOP
R	[6]	READY
A	[7]	A-RST
H	[8]	H_RST
2	[9]	NEXT

Encoder real counter

CONNECTIONS and PANEL CUT-OUT DIMENSION



Supply		
1	PE	Protective Earth
2	N	24V AC/DC +/-%15 @50Hz
3	L	24V AC/DC +/-%15 @50Hz

Com Port		
23	GND	RS232 - 0V
24	RX	RS232 - Receive
25	TX	RS232 - Transmit

Digital Inputs		
4	+COM	+12V Common
5	STOP	Stop Input, NC, PNP
6	READY	Ready Input, NO, PNP
7	A-RST	Angle Reset Input, NO, PNP
8	H-RST	Height Reset Input, NO, PNP
9	NEXT	Next Angle / Count Input

Analog Output		
26	AOUT	0-10Vdc Analog Out (sawing speed)
27	0V	GND

A-Encoder (Angle)		
11	PE	Protective Earth
12	+12V	Encoder Supply +12VDC
13	A	Encoder A
14	B	Encoder B
15	0V	Encoder Supply 0V

H-Encoder (Head Height)		
11	PE	Protective Earth
12	+12V	Encoder Supply +12VDC
13	A	Encoder A
14	B	Encoder B
15	0V	Encoder Supply 0V

Angle Axis Outputs		
16	BACK	Angle Forward
17	FORW	Angle Backward
18	COM	Common
19	SF	Slow/Fast
20	SF	Slow/Fast
21	RUN	RUN out
22	RUN	RUN out

Other Outputs		
33	H-LMT	Height Limit (NO)
34	ZONE	Clamp Pos (Close=Negative)
35	COM	Common
36	H-OUT	Height change out (NO)
37	H-OUT	Height change out (NO)

NOTE : STOP input must be shorted to common if it is not used.