



Sigma² software history

SIGMA ²		MK2 v1	MK2 v2	MK2 v3	#
Bootloader		1.02	2.00	2.00	
Sigma control box	10001601 (v1) - 10001801 (v2,v3)	1.02	2.48	2.48	1
Welding program	Sigma Standard 10645421			421 D1	2
Welding program	Sigma Standard Plus 10645422 (Available in special download only)			422 D1	2
Welding program	Sigma Special 10645423 (Available in special download only)			423 E0	2
Power source	DSPC 10001701 (v1) - 10001702 (v2) - 10001703 (v3)	4.03	5.06	8.21	3
Mig Manager	Not included on SD card			2.00	4
Robot interface analog	10020104 (not included on SD card)			1.06	5
RoboFeeder	10020111 (v1) - 10020115 (v2,v3)	1.01	2.15	2.15	6-7
IWF	10020118 Software history			1.02	9

MK2 v3	Wire feed #1 10001801 PCB 71613474-78	DSPC #3 10001703 PCB 71613585
08-08-2018	2.48 (B48) <ul style="list-style-type: none"> Encoders are blocked during welding. 	8.21 (E21) <ul style="list-style-type: none"> No change
18-05-2018	2.47 (B47) <ul style="list-style-type: none"> MIG Manager is no longer able to switch sequence when doing fast triggering on torch switch 	8.21 (E21) <ul style="list-style-type: none"> When setting up for 2 Sequences, welding performance during slope-down was not good.
14-12-2017	2.46 (B46) <ul style="list-style-type: none"> No change. 	8.20 (E20) <ul style="list-style-type: none"> Problem in P112 solved. Better welding performance when changing the set-current in DC E11-23 will no longer appear when welding wire is stuck to the work piece and trigger signal is activated from Robot at the same time.
05-07-2017	2.46 (B46) <ul style="list-style-type: none"> E11-44 errors will not occur. Encoder up/down adjustment is more stable. 	8.19 (E19) <ul style="list-style-type: none"> No change.
21-12-2016	2.45 (B45) <ul style="list-style-type: none"> Production test protocol implemented. 	8.19 (E19) <ul style="list-style-type: none"> Problem with arc out and blow holes are solved.
06-10-2016	2.44 (B44) <ul style="list-style-type: none"> IWF can now be triggered when connected to Sigma Compact. 	8.18 (E18) <ul style="list-style-type: none"> No change.
18-07-2016	2.43 (B43)	8.18 (E18)

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	<ul style="list-style-type: none"> Implementation of new CAN protocol for production test use only. 	<ul style="list-style-type: none"> No change.
06-06-2016	2.41 (B41) <ul style="list-style-type: none"> Support for watch dog circuit is implemented. 	8.18 (E18) <ul style="list-style-type: none"> No change.
30-05-2016	2.40 (B40) <ul style="list-style-type: none"> No change 	8.18 (E18) <ul style="list-style-type: none"> Software support for watchdog circuit on DSPC PCB 71613585 version F and forward.
14-04-2016	2.40 (B40) <ul style="list-style-type: none"> No change 	8.15 (E15) <ul style="list-style-type: none"> Galaxy could in some rare cases give only wire and gas. No voltage right after power up. The bug is removed.
30-03-2016	2.40 (B40) <ul style="list-style-type: none"> Stable gas flow at all IGC settings. 	8.14 (E14) <ul style="list-style-type: none"> No change
23-02-2016	2.39 (B39) <ul style="list-style-type: none"> No change 	8.14 (E14) <ul style="list-style-type: none"> RCI² could give incorrect analog and bus output on current and voltage, when not welding. This could disturb some robot controllers. Program P003 has got improvements on welding start.
08-12-2015	2.39 (B39) <ul style="list-style-type: none"> Supports Lexar HC/SD cards. Error code E11-44 is show if DSPC communication can not be established during power up. Previously error E02-04 was shown in this situation. E02-04 is used if communication fails under normal operation. 	8.13 (E13) <ul style="list-style-type: none"> No change.
26-10-2015	2.38 (B38) <ul style="list-style-type: none"> Changes in lock level 2 making the voltage locking at the correct voltage, even when you have adjusted TRIM voltage first. Bug fixing for IWF to eliminate E-07-35, E-07-37 and E-07-38 errors. It is no longer possible to activate torch control when MigManager is connected via IWF. 	8.13 (E13) <ul style="list-style-type: none"> No change.

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12-08-2015	2.37 (B37) <ul style="list-style-type: none"> In lock level 2 it is possible to set maximum allowed adjustment window with function F72 (0 - 25%). Default value is 0%. 	8.13 (E13) <ul style="list-style-type: none"> No change.
15-06-2015	2.36 (B36) <ul style="list-style-type: none"> The MigManager in the IWF is activated automatically, and it is possible to choose other torches (dialog, sequence torch, etc.) 	8.13 (E13) <ul style="list-style-type: none"> No change.
12-06-2015	2.35 (B35) <ul style="list-style-type: none"> No change 	8.13 (E13) <ul style="list-style-type: none"> Bad IAC ignition in version 8.12 is solved.
1-6-2015	2.35 (B35) <ul style="list-style-type: none"> Cable compensation is implemented and is activated with secondary parameter F52. Water cooling is activated automatically after software update. E-11-299 error is removed. Support for IWF intermediary station is implemented. 	8.12 (E12) <ul style="list-style-type: none"> Program P118 (Ø 1.2 mm Fe SG2 ER70S6 ArCO2 92/8) is OK again in pulse mode. Program P113 (Ø 1.2 mm Fe SG2 ER70S6 ArCO2 82/18) has got improved start to avoid "explosions".
6-5-2015	2.34 (B34) <ul style="list-style-type: none"> No change 	8.11 (E11) <ul style="list-style-type: none"> Fan control in version 8.10 was not correct. Fan runs now after welding has stopped.
24-4-2015	2.34 (B34) <ul style="list-style-type: none"> Current and voltage setting will no longer be affected by electrically noise induced in to the encoder circuit. 	8.10 (E10) <ul style="list-style-type: none"> E-11-24 error seen on version 8.07 and 8.09 is solved.
19-3-2015	2.33 (B33) <ul style="list-style-type: none"> No change. 	8.09 (E9) <ul style="list-style-type: none"> On robots and automats you could see very bad ignition "pig tails". Specially when stick-out is very short.
19-2-2015	2.33 (B33) <ul style="list-style-type: none"> New function F71 is implemented, used for setting of voltage range which can be adjusted when LOCK level 2 is active. 	8.08 (E8) <ul style="list-style-type: none"> No changes.

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26-1-2015	2.32 (B32) <ul style="list-style-type: none"> No change. 	8.08 (E8) <ul style="list-style-type: none"> Machines with version 8.07 could not be calibrated, the problem is solved.
16-1-2015	2.32 (B32) <ul style="list-style-type: none"> No change. 	8.07 (E7) <ul style="list-style-type: none"> Improved arc start in MIG. Spatter or "long arc" in arc start is removed.
13-11-2014	2.32 (B32) <ul style="list-style-type: none"> New "black" locking SD cards can now be used without the control box starting blinking. Gas calibration is no longer sensitive to when regulations are done on the torch potmeter or current setting changes coming from robot interface. 	8.06 (E6) <ul style="list-style-type: none"> No change.
29-10-2014	2.31 (B31) <ul style="list-style-type: none"> Version 2.30 did not contain the modifications made in version 2.29. It does now. 	8.06 (E6) <ul style="list-style-type: none"> No change.
28-10-2014	2.30 (B30) <ul style="list-style-type: none"> IGC calibration function is added. Push and hold buttons, gas test and 2/4 stroke, at the same time for 4 seconds, to open the calibration menu. 	8.06 (E6) <ul style="list-style-type: none"> No change.
	2.29 (B29) <ul style="list-style-type: none"> Version B28 did not work when used together with DSPC software 10001702 (5.xx) 	8.06 (E6) <ul style="list-style-type: none"> Water cooler state is distributed to Robot interface. Init of states in IAC is improved - (removes some strange behaviour in start performance) Touch sensing functionality improved.
11-09-2014	2.28 (B28) <ul style="list-style-type: none"> When pulse and quadro is selected and then when tack welding is selected right after, now quatro LED is turning off. This is ok. But, when you turn off tack welding again, now the quatro LED stays off and the machine is welding without quatro pulse. This is solved now. Gas pre-flow is working again. 	8.05 (E5) <ul style="list-style-type: none"> No change

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29-04-2014	2.26 (B26) <ul style="list-style-type: none"> No change. 	8.05 (E5) <ul style="list-style-type: none"> Software update via SD card is more robust now.
01-04-2014	2.26 (B26) <ul style="list-style-type: none"> No change. 	8.04 (E4) <ul style="list-style-type: none"> Added support for RCI2, this includes touch sensing, wire stick sensing and fast filtering of measurements for seam tracking.
10-12-2013	2.26 (B26) <ul style="list-style-type: none"> No change. 	8.03 (E3) <ul style="list-style-type: none"> Heat input is calculated correct now. Support for big capacitor battery, when supplied from soft mains supplies and autotransformers.
13-09-2013	2.26 (B26) <ul style="list-style-type: none"> No change. 	8.01 (E1) <ul style="list-style-type: none"> Pulse welding and manual welding was not 100% ok on version 8.0.
09-09-2013	2.26 (B26) <ul style="list-style-type: none"> Support for DSCP version 8.0. This version MUST run together with DSPC software 8.0, otherwise error E 11-38 is shown. 	8.00 (D0) <ul style="list-style-type: none"> Support for new control box. Added possibility for activating touch sensing.
25-04-2013	2.25 (B25) <ul style="list-style-type: none"> When enabling Quatro right after welding without Quatro on a high current setting, then Quatro function did not work. 	7.03.1 (D3) <ul style="list-style-type: none"> No change.
05-03-2013	2.24 (B24) <ul style="list-style-type: none"> It is possible to change these functions from the front panel, pulse, tack and duopulse when a robot interface is connected, until the same function has been activated from the robot interface. When changes have been made from the interface, changes are no longer possible from the control box. 	7.03.1 (D3) <ul style="list-style-type: none"> No change.
01-03-2013	2.23 (B23) <ul style="list-style-type: none"> Memory space for welding programs are increased from 150 to 200 programs. 	7.03.1 (D3) <ul style="list-style-type: none"> Problemes with start and stability of welding arc, in the upper range of the current scale, is solved. All pulse programmes are improved.

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21-02-2013	2.22 (B22) <ul style="list-style-type: none"> Error E-11-103 will no longer appear during machine startup when sequence torch was enabled. 	7.02.1 (D2) <ul style="list-style-type: none"> No change.
13-02-2013	2.21 (B21) <ul style="list-style-type: none"> Better and more accurate regulation on IGC system. 	7.02.1 (D2) <ul style="list-style-type: none"> No change.
01-11-2012	2.19.1 (B19) <ul style="list-style-type: none"> No change. 	7.02.1 (D2) <ul style="list-style-type: none"> The connection between the DSPC and current sensor is now Nu er der kontrol på om der er forbindelse til strømsensoren. Hvis der ikke er forbindelse meldes fejl E-11-20. Dårlig forbindelse til strømsensor kunne tidligere fejlagtigt give fejl E-11-39.
08-08-2012	2.19.1 (B19) <ul style="list-style-type: none"> The water pump will run for 5 seconds when the machine is switched on and also when selecting a welding program. This will eliminate the "H2O" error when using long air filled water hoses. 	7.01.1 (D1) <ul style="list-style-type: none"> No change.
06-07-2012	2.18.1 (B18) <ul style="list-style-type: none"> No change. 	7.01.1 (D1) <ul style="list-style-type: none"> In MMA the user did not get 500A if 500A is the reference - previously it only gave 499A due to imprecise calculations. In general the MMA algorithm gave one ampere less than the reference - now it gives the correct value. If no PLD is attached on startup the DSP software gives an error (E11-43)
30-05-2012	2.18.1 (B18) <ul style="list-style-type: none"> No change. 	7.00.1 (D0) <ul style="list-style-type: none"> Improved welding performance when using PULS and IAC programs. More stable arc in IAC programs and slightly higher pulse frequency in some pulse programs.
24-04-2012	2.18.1 (B18) <ul style="list-style-type: none"> No change. 	6.28.1 (C8) <ul style="list-style-type: none"> In manual MIG programs P002 and P003 the arc can give a howl sound during arc striking.

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18-04-2012	2.18.1 (B18) <ul style="list-style-type: none"> No change. 	6.27.1 (C7) <ul style="list-style-type: none"> E-05-03 does not show anymore when the welding voltage has been adjusted lower than 14V.
28-03-2012	2.18.1 (B18) <ul style="list-style-type: none"> No change. 	6.26.1 (C6) <ul style="list-style-type: none"> E-05-03 does not show anymore when the welding voltage has been adjusted to a high value. Galaxy program P186 Ø 1.0 mm Fe SG2 ER70S6 IAC has now reduces spatter.
16-02-2012	2.18.1 (B18) <ul style="list-style-type: none"> No change. 	6.25.1 (C5) <ul style="list-style-type: none"> The IAC programs are not welding as good as they are supposed to in version 6.24. Earlier versions than 6.24 are ok.
27-01-2012	2.18.1 (B18) <ul style="list-style-type: none"> No change. 	6.24.1 (C4) <ul style="list-style-type: none"> Problem with E-26-00 in Program MMA-P001 and Arc Gauging 004 is solved. Support for statistics software module is implemented for useage in the future.
02-12-2011	2.18.1 (B18) <ul style="list-style-type: none"> The water pump could stop when changing from one robo-feeder to another. This fails has been rectified so the pump now runs continuously even when changing from one feeder to another. 	6.22.1 (C2) <ul style="list-style-type: none"> No change.
24-11-2011	2.17.1 (B17) <ul style="list-style-type: none"> New lock level 2 has been implemented. 	6.22.1 (C2) <ul style="list-style-type: none"> No change.
15-11-2011	2.16.1 (B16) <ul style="list-style-type: none"> No change. 	6.22.1 (C2) <ul style="list-style-type: none"> Error E-02-04 could come exactly 16 seconds after the machine is switched on, this occur on 1 of 1000 machines only. The bug is fixed.
24-10-2011	2.16.1 (B16) <ul style="list-style-type: none"> The display readout will change back to the set values as soon as the torch potmeter is 	6.21.1 (C1) <ul style="list-style-type: none"> No change.

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	<p>turned.</p> <ul style="list-style-type: none"> Sequence setting has been changed, see the newest users manual. 	
29-08-2011	<p>2.15.1 (B15)</p> <ul style="list-style-type: none"> When loading software via SD card the error E-21-00 could come. The software is modified so it has better memory control now. 	<p>6.21.1 (C1)</p> <ul style="list-style-type: none"> No change.
31-05-2011	<p>2.14.1 (B14)</p> <ul style="list-style-type: none"> The maximum current could be set to a higher value than the synergic program allowed. This is a fault that is seen in software version 2.12 and 2.13 only. 	<p>6.21.1 (C1)</p> <ul style="list-style-type: none"> No change.
30-05-2011	<p>2.13.1 (B13)</p> <ul style="list-style-type: none"> The software now supports the new bootloader version 2,02. When the control box has the new bootloader it can read the high capacity SD HC and SD XC card. Control boxes produced after 1/6 2011 contains the new bootloader 2.02 and therefore they can read the highcapacity cards. Older control boxes can not read high capacity SD cards even when software version 2.13 is installed. 	<p>6.21.1 (C1)</p> <ul style="list-style-type: none"> No change.
17-05-2011	<p>2.12.1 (B12)</p> <ul style="list-style-type: none"> No change. 	<p>6.21.1 (C1)</p> <ul style="list-style-type: none"> Software is trimmed due to the new service test menu in Galaxy.
11-05-2011	<p>2.12.1 (B12)</p> <ul style="list-style-type: none"> No change. 	<p>6.20.1 (C0)</p> <ul style="list-style-type: none"> The DSPC PCB is now prepared for usage with the service functions in Galaxy.
15-04-2011	<p>2.12.1 (B12)</p> <ul style="list-style-type: none"> Robotinterface. When the sequence- and program choice inputs are left unused (passive), it is possible to change sequence and program settings on Sigma MK2 front panel. When Sigma MK2 is displaying the welding program number, and you at the same time change the program number from the 	<p>6.18.1 (B8)</p> <ul style="list-style-type: none"> No change.

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	<p>robotinterface, the new program number is now displayed.</p> <ul style="list-style-type: none"> • Maximum current incl. hotstart, can not exceed the power source maximum current level. • It was possible to change sequence in MMA mode when not welding by pressing the MIG torch trigger. This possibility has been removed. 	
29-03-2011	<p>2.11.1 (B11)</p> <ul style="list-style-type: none"> • Error E-16-01 could come during long time continuously welding with Dou Plus. 	<p>6.18.1 (B8)</p> <ul style="list-style-type: none"> • Spatter in the IAC programs P185 and P186 are reduced.
10-03-2011	<p>2.10.1 (B10)</p> <ul style="list-style-type: none"> • When error E-16-xx is appearing, then the wire feed motor and welding current will stop at the same time. • Previously the welding continued when this error came. 	<p>6.17.1 (B7)</p> <ul style="list-style-type: none"> • E-11-24 is reduced even more. • When welding with more than 200A the arc could become instable. This problem is solved now.
18-02-2011	<p>2.09.1 (B9)</p> <ul style="list-style-type: none"> • No change. 	<p>6.15.1 (B5)</p> <ul style="list-style-type: none"> • Error E11-24 will not come during the start of welding. • The software is prepared for touch sensing in combination with future changes to the robot interface.
18-01-2011	<p>2.09.1 (B9)</p> <ul style="list-style-type: none"> • No change. 	<p>6.14.1 (B4)</p> <ul style="list-style-type: none"> • After welding with a non IAC program and the changing to a IAC program, the welder will again weld with the correct welding voltage. • The regulation procedure in the software will now control the short circuit frequency correct.
21-12-2010	<p>2.09.1 (B9)</p> <ul style="list-style-type: none"> • No change. 	<p>6.13.1 (B3)</p> <ul style="list-style-type: none"> • The Galaxy control panel could freeze and lock with error code E11-41 if the control panel set to an IAC program and then moved to a machine without IAC. • The inverter module will stop and not give voltage and current, if the control box has

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		stopped working
02-12-2010	2.09.1 (B9) <ul style="list-style-type: none"> No change. 	6.12.1 (B2) <ul style="list-style-type: none"> On IAC programs the stop current, in some cases, could be so strong that the arc burned up into the tip.
06-10-2010	2.09.1 (B9) <ul style="list-style-type: none"> The Problem where the machine forgets the sequence settings in MMA, when at the same time the sequence torch is chosen in MIG, has been solved. Error E02-01 does not show up when sequence torch are chosen and when at the same time the torch regulation is used. The external error input is now only detected when the MWF is active. The external error input is changed so now the error message disappears after 5 seconds but it will show up again when the torch trigger is activated when the fault is still there. Gas test and inching now works when there is an external error. DuoPlus is now activated again after the stitching function has been used. 	6.11.1 (B1) <ul style="list-style-type: none"> Implementation of support for new weld monitor system.
01-10-2010	2.08.1 (B8) <ul style="list-style-type: none"> No change. 	6.10.1 (B0) <ul style="list-style-type: none"> The problem with a bit of spatter during the first seconds of the weld, when welding with long intermediary and IAC programs, is solved.
16-06-2010	2.08.1 (B8) <ul style="list-style-type: none"> No change. 	6.09.1 (A9) <ul style="list-style-type: none"> IAC control has been improved. The problem with a bit of welding spatter during the first seconds of the welding with IAC and long intermediary cables, is solved.
12-06-2010	2.08.1 (B8) <ul style="list-style-type: none"> No change. 	6.08.1 (A8) <ul style="list-style-type: none"> First release for field test.

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MK2 v2	10001801 PCB 71613474-78	10001702 PCB 71613470
21-10-2010	2.09.1 (B9) <ul style="list-style-type: none"> • No changes. 	5.06.1 (E6) <ul style="list-style-type: none"> • The inverter module will stop and not give voltage and current, if the control box has stoped working.
06-10-2010	2.09.1 (B9) <ul style="list-style-type: none"> • The Problem where the machine forgets the sequence settings in MMA, when at the same time the sequence torch is chossen in MIG, has been solved. • Error E02-01 does not show up when sequence torch are choosen and when at the same time the torch regulation is used. • The external error input is now only detected when the MWF is active. • The external error input is changed so now the error message disapears after 5 seconds but it will show up again when the torch trigger is activated when the fault is still there. Gas test and inching now works when there is an external error. • DuoPlus is now activated again after the stitching function has been used. 	5.05.1 (E5) <ul style="list-style-type: none"> • Implementation of support for new weld monitor system.
22-09-201	2.08.1 (B8) <ul style="list-style-type: none"> • No changes. 	5.04.1 (E4) <ul style="list-style-type: none"> • The voltage measurement is more accurate in the welding start.
11-06-2010	2.08.1 (B8) <ul style="list-style-type: none"> • The Stopcurrent function is introduced (F40). • It is now possible to weld when the secondary parameteres are open. • Works on the following program packages, and forward. Standard package 10645421-A5 Plus package 10645422-A5 Special package 10645423-A9. Special IAC package 10645424-A2 	5.03.1 (E3) No changes.

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6-05-2010	2.07.1 (B7) <ul style="list-style-type: none"> No changes 	5.03.1 (E3) Error code E-11-24 could show up without reason in PULS mode.
19-04-2010	2.07.1 (B7) <ul style="list-style-type: none"> Update of FBI is now possible via SD card. FBI (Field Bus Interface) is a pure digital interface which communicates via CAN only. 	5.02.1 (E2) No changes.
26-01-2010	2.06.1 (B6) <ul style="list-style-type: none"> Update of the new DSPC with floating point processor is now possible. 	5.02.1 (E2) <ul style="list-style-type: none"> No changes.
02-11-2009	2.05.1 (B5) <ul style="list-style-type: none"> Loosing the welding program choise, when program is selected from the analog robot interface. 	5.02.1 (E2) <ul style="list-style-type: none"> No changes.
22-10-2009	2.04.1 (B4) <ul style="list-style-type: none"> When program no "zero" is selected from the analog robot interface, the program on the control box does not change to "zero=MMA". Changing between manual and synergic gas control does not work. 	5.02.1 (E2) <ul style="list-style-type: none"> No changes.
19-10-2009	2.03.1 (B3) <ul style="list-style-type: none"> Problems with set value of current/trim on the digital robot interface. 	5.02.1 (E2) <ul style="list-style-type: none"> No changes.
09-10-2009	2.02.1 (B2) <ul style="list-style-type: none"> Problems with the Arc out signal on the analog robot interface. 	5.02.1 (E2) <ul style="list-style-type: none"> Problems with Arc out signal on the analog robot interface.
30-09-2009	2.01.1 (B1) <ul style="list-style-type: none"> New software for Sigma MK2 v2. 	5.00.1 <ul style="list-style-type: none"> New software for Sigma MK2 v2.
MK2 v1	10001601 PCB 71613474-78	10001701 PCB 71613472
05-05-2011	1.02.1 (A2) <ul style="list-style-type: none"> Robofeeder MK2 version 2 can now be used 	4.03.1 (A3)

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	on power source with MK2 versoin 1 software.	<ul style="list-style-type: none"> No changes.
02-04-2009	1.01.1 (A1) <ul style="list-style-type: none"> No changes. 	4.03.1 (A3) <ul style="list-style-type: none"> Error code E 02-01 does not show any more when MMA mode is chosen.
27-03-2009	1.01.1 (A1) <ul style="list-style-type: none"> No changes. 	4.02.1 (A2) <ul style="list-style-type: none"> The display readout of current and voltage is now shown faster and with more stability. On systems with robot interface, the robot will now recieve a "zero" signal on the current and voltage feedback signals from the robot interface, when not welding. Previously the feedback signals stayed on the last measured values on the feedback.
22-01-2009	1.01.1 (A1) <ul style="list-style-type: none"> Locking function added. 	4.00.1 (A1) <ul style="list-style-type: none"> First version.
19-12-2008	1.00.1 (A0) <ul style="list-style-type: none"> First version. 	4.00.1 (A1) <ul style="list-style-type: none"> First version

Sigma² software history

Release date	Welding program#2 10645421 - STANDARD	10645422 - STANDARD PLUS	10645423 - SPECIAL
22-10-2018	421 D1 - P111 improved in DC welding 30A-100A. - P353 Improved in pulse welding, where the arc had some jumps. - P353 improved in lowest synergic point in pulse. - P113 +2.5V in DC at 202A. - P112 Changed wire speed in 220A-350A DC to get set current and mean welding current equal. - P115 Inserted stop pulse	422 D1 - P111 improved in DC welding 30A-100A. - P353 Improved in pulse welding, where the arc had some jumps. - P353 improved in lowest synergic point in pulse. - P113 +2.5V in DC at 202A. - P112 Changed wire speed in 220A-350A DC to get set current and mean welding current equal. - P115 Inserted stop pulse	423 E0 - P111 improved in DC welding 30A-100A. - P353 Improved in pulse welding, where the arc had some jumps. - P353 improved in lowest synergic point in pulse. - P113 +2.5V in DC at 202A. - P112 Changed wire speed in 220A-350A DC to get set current and mean welding current equal. - P115 Inserted stop pulse - P465 Warning is removed
21-12-2016	421 D0 - P111 corrected in DC in 40A-90A. - P112 improved in both DC and pulse. - P115 updated in 6-12m/min. - P312 improved performance in DC in 110A-270A. - P429 added volt trim through out the whole DC program. - Hotstart is working in all programs now.	422 D0 - P111 corrected in DC in 40A-90A. - P112 improved in both DC and pulse. - P115 updated in 6-12m/min. - P312 improved performance in DC in 110A-270A. - P429 added volt trim through out the whole DC program. - Hotstart is working in all programs now.	423 D9 - P111 corrected in DC in 40A-90A. - P112 improved in both DC and pulse. - P115 updated in 6-12m/min. - P312 improved performance in DC in 110A-270A. - P429 added volt trim through out the whole DC program. - Hotstart is working in all programs now.
30-03-2016	421 C9 <ul style="list-style-type: none"> No change. 	422 C9 <ul style="list-style-type: none"> No change. 	423 D8 <ul style="list-style-type: none"> P595 is only selectable as pulse program now.
28-10-2015	421 C9 <ul style="list-style-type: none"> P222 is increased from 218A to 310A. P114 has got higher gas flow. 	422 C9 <ul style="list-style-type: none"> P222 is increased from 218A to 310A. P114 has got higher gas flow. P321 updated in pulse/DC due to bad performance. P494 DC, voltage adjusted a little. 	423 D7 <ul style="list-style-type: none"> P222 is increased from 218A to 310A. P114 has got higher gas flow. P321 updated in pulse/DC due to bad performance. P494 DC, voltage adjusted a little.
10-07-2015	421 C8	422 C8	423 D6 <ul style="list-style-type: none"> Program P222 and P232 has

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	<ul style="list-style-type: none"> No change 	<ul style="list-style-type: none"> No change 	got increased current maximum. Changed from 235A to 380 A in DC.
25-06-2015	421 C8 <ul style="list-style-type: none"> Programs added P429 - Ø1.2 FCW FeM MX 100T, ArCO₂ 82/18 P451 - Ø1.2 FCW FeRutil DWA 55E, ArCo₂ 82/18 P452 - Ø1.2 FCW FeRutil Tubrod 15.14, ArCO₂ 82/18 	422 C8 <ul style="list-style-type: none"> Programs added P131 - Ø1.0 ER70S6 ArCO₂ P429 - Ø1.2 FCW FeM MX 100T, ArCO₂ 82/18 P451 - Ø1.2 FCW FeRutil DWA 55E, ArCo₂ 82/18 P452 - Ø1.2 FCW FeRutil Tubrod 15.14, ArCO₂ 82/18 	423 D5 <ul style="list-style-type: none"> Programs added P131 - Ø1.0 ER70S6 ArCO₂ 98/2 P220 - Ø1.0 ER308LSi, ArO₂ 98/2 P232 - Ø1.0 ER309LSi, ArO₂ 92/2 P273 - Ø1.2 CrNi Zecor, ArCO₂ 92/2 P429 - Ø1.2 FCW FeM MX 100T, ArCO₂ 82/18 P451 - Ø1.2 FCW FeRutil DWA 55E, ArCo₂ 82/18 P452 - Ø1.2 FCW FeRutil Tubrod 15.14, ArCO₂ 82/18 P595 - Ø1.2 UTP A 8051 Ti, ArCo₂ 98/2
16-01-2015	421 C7 <ul style="list-style-type: none"> P117 pulse is adjusted to fit 400A power module. P231 added. In all Stanless stell programs (P200 to P299) default value of hot start is changed from 25 % to 0 % and a stop puls is added, to give better start performance. 		
	421 C6 <ul style="list-style-type: none"> P116: Ø 0.6 mm, Fe SG2 ER70S6, ArCO₂, 82/18, DC/P is adjusted in DC under 50A, to give more accurate current readout. P313: Ø 1.2 mm, AlMg5 ER5356, Ar, 100, DC/P is expanded in pulse from 290A up to 370A. P444 new program for 1.6 mm FCW 215 FeRutil wire CO₂ gas is added. P445 new program for 1.6 mm FCW 115 FeMetal wire 		

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	CO2 gas is added.		
02-06-2014	421 C5 <ul style="list-style-type: none"> • P130: Ø 0.8 mm, Fe SG2 ER70S6, ArCO2, 92/8, DC/P • P402: Ø 1.0 mm, FCW FeRutil 215, ArCO2, 82/18, DC+ 		
11-02-2014	421 C4 <ul style="list-style-type: none"> • P202 updated in DC • P652 updated in pulse 		
30-10-2013	421 C3 <ul style="list-style-type: none"> • P112 has better performance above 200A now and maximim current is increased to 440A (30m/minute) 		
12-08-2013	421 C2 <ul style="list-style-type: none"> • P221 is added for ER308LSI-0.8mm • P222 is added for ER308LSI-1.0mm • P223 is added for ER308LSI-1.2mm • P224 is added for ER309LSI-0.8mm • P225 is added for ER309LSI-1.0mm • P319 is added for AlMg5 0.9mm • P509 is added for CuAl8 0.9mm 		
01-03-2013	421 C1 <ul style="list-style-type: none"> • P115 is in the package. P119 has pulse welding P113 improved start performance in pulse at large currents P101, P102, P106, P112, P116 - Easier to keep arc alive in lowest synergic points 		

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06-11-2012	421 C0 <ul style="list-style-type: none"> P562 can pulse weld again. 		
01-11-2012	421 b9 <ul style="list-style-type: none"> P114 (1.4mm FE - 82/18) is added. P129 (1.4mm FE - 92/8) is added. P204 can pulse weld now. P312 is adjusted in material dimensions. P353 is adjusted in the area below 30A to avoid loss of arc. 		
15-06-2012	421 b8 <ul style="list-style-type: none"> P112 is able to pulse weld correctly at highest synergy point. P114 is able to pulse weld. P134, P135, P136, P137, P138, P139 (DC/P) Programs for Ferromax gases added. P202 corected to ensure stability. 		
15-05-2012	421 b7 <ul style="list-style-type: none"> P415, P417, P426, P427, P428 and P454 are created 1.6mm programs can run on 300A machines P561 and P562 is updated to ensure a steady welding arc even at low current settings 		
16-03-2012	421 b6 <ul style="list-style-type: none"> Improved welding performance in the following programs. P561 and P562 below 60 Amp. P313 has now shorter arc length 		
27-01-2011	421 b5 <ul style="list-style-type: none"> P423 - Changed start parameters. P383 - Gas name changed. P561 - Can 		

Sigma² software history

	<p>now be used on 300A machine. P111, P121, P125, P413, P501, P571 - Static P34 changed. P113 - Changed in pulse and dc per request from Germany. P202 - Minor chages in pulse.</p>		
23-05-2011	<p>421 b3</p> <ul style="list-style-type: none"> • P112 (FE SG2 1.0mm) has be trimmet so that the set current and the real welding current are equal. 		
15-04-2011	<p>421 b2</p> <ul style="list-style-type: none"> • Puls function is added in program 423 (FCW 115 Fe Metal). Base current in program 353 AISi5 ER4043 is increased in order to improve the welding result. 		
10-03-2011	<p>421 b1</p> <ul style="list-style-type: none"> • When welding with more than 200A the arc could become instable. This problem is solved. 		
25-10-2010	<p>421 b0</p> <ul style="list-style-type: none"> • Program 483 can go down to 80A as minimum in stead of 102A, and it has got the same welding performance as P493 and therefore it welds more stable. Program 493 can go down to 80A and the voltage has been adjusted. 		
24-09-2010	<p>421 A9</p> <ul style="list-style-type: none"> • Program 112 is improved. It has better performance when welding "overhead". The arc seems a little more hard now. Program 423 has better start, without the current increasing. 		

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13-09-2010	421 A8 <ul style="list-style-type: none"> Program 413 (FCW Fe Basic 515) has been adjusted so minimum now is 80 ampere instead of 96 ampere as previously. 		
13-07-2010	421 A7 <ul style="list-style-type: none"> Program 423 (FCW Fe Metal 115) are modified. Current surges during start of welding has been removed. 		
01-07-2010	421 A6 <ul style="list-style-type: none"> Program 403 (FCW FeFutil 215) and program 413 (FCW FeRutil 515) are modified. Current surges during start of welding has been removed. 		
29-06-2010	421 A5 <ul style="list-style-type: none"> Stop current function is now implemented in all welding programs. 		
15-05-2009	421 A4 <ul style="list-style-type: none"> P111 The indicator for mixed transfer is now indicating at the right area of the setting. 		
27-02-2009	421 A3 <ul style="list-style-type: none"> P102 did not have synergy gascontrol; this has been implemented. P201 was missing and has now been re-introduced. 		
06-02-2009	421 A2 <ul style="list-style-type: none"> P117 Fe Ø1,6 ArCO₂(92/8) has been added and P118 Fe Ø1,2 ArCO₂(92/8) altered. 		

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27-01-2009	421 A1 <ul style="list-style-type: none">Improved ignition characteristics in P202 and P203. Speed pulse removed in P113 on Sigma 500.		
05-01-2009	421 A0 <ul style="list-style-type: none">First version		

Sigma² software history

Release date	Robot Interface MK1 and MK2 #5 10020104 the software is loaded onto all versions of the PCB 71613491 via the flash tool MFT1
Implemented 10-11-2009	1.06 <ul style="list-style-type: none"> Better support for robot interface on Sigma MK2. This version is a must when using Sigma MK2 version 2. The Interface input number 1 has to be connected now. Or else error E-07-01 will come.
Implemented 05-03-2009	1.05 <ul style="list-style-type: none"> The Robot interface is now active everytime the system is powered on.
Implemented 26-02-2008	1.04 <ul style="list-style-type: none"> Trigger signal now "over rules" gas and inches signals.
Implemented 11-01-2008	1.03 <ul style="list-style-type: none"> Error code E-07-02 and E-02-04 no longer appears unintentionally. Sequence change function works as intended.
Implemented 12-12-2007	1.02 <ul style="list-style-type: none"> Inaccuracies on analogue inlets have been removed. The feeder in the compact machine is now activated with binary code 0 or 3. When the robot reports error and thereby activates MACHINE STATUS = ON, the machine cannot be triggered via the interface.

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MK2 v2	Robo Feeder MK2 #6 / #7 10020115 (Software is loaded from SD card via the control box)
26-09-2014	2.14 <ul style="list-style-type: none"> Support for IGC calibration is added.
29-04-2014	2.14 <ul style="list-style-type: none"> SW-update is more robust.
01-04-2014	2.13 <ul style="list-style-type: none"> SW-update is faster.
09-09-2013	2.12 <ul style="list-style-type: none"> Measured gas flow and wire speed are now send to the control box log file, instead of set values. Reversing is possible when inching.
Implemented 12-02-2013	2.11 <ul style="list-style-type: none"> Better and more accurate regulation on IGC system.
Implemented 31-10-2012	2.10 <ul style="list-style-type: none"> When 2 RoboFeeders are connected to one power source the errors E-07-04 and E-22-12 might come. This problem is solved.
Implemented 24-05-2012	2.09 <ul style="list-style-type: none"> Functionality added for measuring the used gas and wire consumption. Active only in Sigma Galaxy.
Implemented 27-12-2011	2.08 <ul style="list-style-type: none"> Error E-07-02 can come when Galaxy, with control panel 76113597, is software updated at the same time as the machine is connected to 2 robo feeders.
Implemented 31-03-2011	2.07 <ul style="list-style-type: none"> Error E-26-00 could come on Sigma Galaxy. The problem is solved.
Implemented 20-12-2010	2.06 <ul style="list-style-type: none"> The wire could continue to run when the RWF lost connection to the power source.
Implemented	2.05

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07-10-2010	<ul style="list-style-type: none"> The external error input is changed so now the error message disappears after 5 seconds but it will show up again when the torch trigger is activated when the fault is still there. Gas test and inching now works when there is an external error.
Implemented 08-09-2010	2.04 <ul style="list-style-type: none"> The Arc detector output and External Error input are both active now on the RoboFeeder (RWF) and there functions are like on MWF 41.
Implemented 16-10-2009	2.03 <ul style="list-style-type: none"> Various bug fixes.
Implemented 12-10-2009	2.02 <ul style="list-style-type: none"> Support for the new COOPTIM wire feeder is implemented.
Implemented 28-09-2009	2.01 <ul style="list-style-type: none"> New software which is loaded via the control box bootloader.
MK2 v1	10020111 (Software is loaded from SD card reader directly on the PCB 71613578)
Implemented 19-3-2009	1.01 <ul style="list-style-type: none"> The torch control stays active even after the trigger wires have been disconnected shortly. Like after a bad connection in the ZA connector