



PRN/06.04.09

History for Flex 4000 software

Find the most recent version software downloads on the service site <http://service.migatronik.dk>

Version code on those program cards (Smartcard) that can be used on the current software version is shown in the three right columns. The highest figure in each column also states the latest Smartcard version.

| Version no. | Following improvements have been implemented in the current version | Standard Smartcard 12645001 – 2 | MIG solder Smartcard 12645003 – 4 | Aluminium Smartcard 12645005 – 6 |
|----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|-----------------------------------------|----------------------------------------|
| 1,400 Impl. 28.03.03 | <p>Modifications which are independent of Smartcard</p> <ul style="list-style-type: none"> • Wire speed and welding voltage are shown if pushbutton V is held for more than 2 seconds. Now the synergic programs can be set. • After having switched from torch control to internal control, the right turn button did not function until the button for secondary parameters was pushed. • If there was motor error and the inching button was activated, the wire feed speed would rise to maximum. This has been changed so the wire does not rung when the inching button is activated at the same time as the occurrence of motor error. • Software has been prepared for ROBOT interface • Software has been prepared for DOBBELT MWF. • The machine can now be set by means of wire feed speed and absolute voltage in synergic MIG. • Hotstart in 4-stroke has been removed as this was an inexpedient function. • The fans stop if the temperature in the powermodule is below 30 degrees Celsius. • Smartcard can no longer be locked with code 0 "nil", as this was inexpedient. • The wire ran quickly forward at welding start even though soft-start had been chosen. • In manual MIG the actual welding voltage is the same as the set welding voltage with 1-volt precision because "stiff welding voltage characteristics" has been implemented. • Sequence 0 (nil) is no longer part of the "sequence process". Now the first sequence is 1. | 0-1-2-3-4-5-6-7-8-9-10 | 0-1 | 0-1-2 |

History for Flex 4000 software

| Version no. | Following improvements have been implemented in the current version | Standard Smartcard 12645001 – 2 | MIG solder Smartcard 12645003 – 4 | Aluminium Smartcard 12645005 – 6 |
|----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|-----------------------------------------|----------------------------------------|
| | <ul style="list-style-type: none"> The highest sequence selected is also the value shown in the display. If, for example, 4 are chosen as highest sequence, the course is 1, 2, 3, and 4. On previous software versions it would have been 0,1,2,3. <p>Modifications which also require Smartcard no. 9</p> <ul style="list-style-type: none"> Brief arc extinctions could occur during welding. Burn-back could vary considerably during pulse welding. The actual welding voltage now agrees with the set welding voltage on all welding programs except AISi. Many errors could occur during the welding process because some incidental parameters had been rearranged in the programming process. <p>Modifications which require latest Smartcard (See right column on page 2)</p> <ul style="list-style-type: none"> All programs have been corrected so arc extinctions are avoided, also AISi. Flux cored wire programs are optimised. | | | |
| 2,000 Impl. 12.06.03 | <p>Modifications which are independent of Smartcard</p> <ul style="list-style-type: none"> The starting characteristics are improved on AISi and AIMg programs. Problems regarding diverse starts or the arc burning in the contact tip have now been solved. This applies to all welding programs. Trim voltage could be adjusted between + and –5V, this has now been increased to + and – 9.9V. Reaction time for the torch key has been made faster. Consequently, shorter stitches and faster re-ignition of the arc is obtained. The Quattro function will always start in sequence 1 and not like previously where it started in the same frequency as was used for welding prior to that. It is now possible to switch between "pulse" and "not pulse" in sequence as well as Quattro. Current and voltage display after welding has ended (press key V) has been changed so it shows the mean value of welding for | 0-1-2-3-4-5-6-7-8-9-10- 11 | 0-1 | 0-1-2 |

History for Flex 4000 software

| Version no. | Following improvements have been implemented in the current version | Standard Smartcard 12645001 – 2 | MIG solder Smartcard 12645003 – 4 | Aluminium Smartcard 12645005 – 6 |
|----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|-----------------------------------------|----------------------------------------|
| | <p>the last 10 seconds. This alteration is particularly evident in Quattro where it only showed the mean current of the last sequence.</p> <ul style="list-style-type: none"> The cooling module will continue running for 5 mins after welding has ended – as supposed to 2 mins. Spot time in sequence has become more consequent. Torch control has been blocked when material thickness is shown in the display. The phenomenon of the wire speed jerking when triggering into the air has been removed. <p>Modifications which require latest Smartcard (see right column on page 3)</p> <ul style="list-style-type: none"> The current values for material dimensions have been corrected in some programs so there is generally 5-15% more energy provided than before. CrNi has been improved in pulse welding whereby the arc has become more stable. | | | |
| 2,100 Impl. 26.09.03 | <p>Modifications which are independent of Smartcard</p> <ul style="list-style-type: none"> Arc adjust has been added. With this function the “peak current” can be changed +/- 50 ampere, which will make the arc more “soft” or “hard”. The user can adjust this function by depressing the button <i>gasflow-material thickness</i>, until the arcadjust lamp is alight. Turn the right potmeter knob to do the adjustments. <p>Modifications which require latest Smartcard</p> <ul style="list-style-type: none"> <i>Hotstart Volt Trim</i> has been added. This is a function that is locked and can not be changed by the user. | 0-1-2-3-4-5-6-7-8-9-10-11-12 | 0-1-2 | 0-1-2-4 |
| 2,200 Impl. 08.10.03 | <p>Software 2.100 did not work as intended to. This is modified in version 2.200</p> | 0-1-2-3-4-5-6-7-8-9-10-11-12 | 0-1-2 | 0-1-2-4 |
| Impl. | Modifications which require latest Smartcard 12645001-2 | 13 | | |

History for Flex 4000 software

| Version no. | Following improvements have been implemented in the current version | Standard Smartcard 12645001 – 2 | MIG solder Smartcard 12645003 – 4 | Aluminium Smartcard 12645005 – 6 |
|------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|-----------------------------------------|----------------------------------------|
| 10.12.03 | <ul style="list-style-type: none"> Program P202 - CrNi316 1,0mm can now weld with a lower minimum current in <i>non pulse mode</i>. | | | |
| Impl. 18.08.04 | <ul style="list-style-type: none"> Program for 0.8mm FE Co2 is added | 14 | | |
| Impl. 20.09.04 | <ul style="list-style-type: none"> Program for AlMg4.5 1.6mm is added | | | 5 |
| 2,300 Impl. 22.10.04 | <ul style="list-style-type: none"> MIG Manager can be used on both Flex 4000 and Flex 5000. Via MIG Manager it is possible to adjust welding current, volt trim and sequence. Stitch and pulse functions can be en- or disabled. When MIG Manager is connected the machine will automatically switch into "Internal control mode", and it is no longer possible to change to "Torch control", unless the machine is switched off first. Following fault is corrected. In MIG manual mode – 2 stroke and hotstart time = 0, the average current values were not shown. Now it is. After a cooling ERROR it is now necessary to switch off the machine to disable the ERROR message. | | | |
| 2,310 Impl. 10.11.2004 | <ul style="list-style-type: none"> Display software is changed to give a better read out. Via CAN-interface program number from 0 to "max. number of programs" can be chosen. The program number is equal to the number shown in the display | | | |
| Impl. 25.11.2004 | <ul style="list-style-type: none"> Improved ignition with program 0.8 Fe ArCO2 | 15 | | |

History for Flex 4000 software

| Version no. | Following improvements have been implemented in the current version | Standard Smartcard 12645001 – 2 | MIG solder Smartcard 12645003 – 4 | Aluminium Smartcard 12645005 – 6 |
|-------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|-----------------------------------------|----------------------------------------|
| Impl. 24.02.2005 | <ul style="list-style-type: none"> Improved welding performance with program AISi 1.2 Ar | 16 | | 6 |
| 2,320 Implement 05.04.2005 | <ul style="list-style-type: none"> Trigger function in 4 stroke is changed. When welding stops, the slope down period will continue, also if the trigger is activated again during slope down. If the trigger is held active after slope down period has finished, the crater fill function will continue until the trigger is released. If the trigger is released when slope down has finished, the burnback function will get active and the welding will stop. This function is valid in both manual and synergic MIG. Under voltage detection on the DC-LINK, measurement has been implemented, causing low mains voltage to indicate MAINS ERROR on the MWF panel. The over- and under voltage limits have been adjusted so the machine can detect if only one phase is missing, this results in MAINS ERROR indication when the arc is ignited. The problem with robot interface and advanced remote control is solved. | | | |
| 2,400 Impl. 12.10.2005 | <ul style="list-style-type: none"> Sequence data will change automatically when the machine is switched off and on. The sequence data will be copied into the sequence number in which the machine is switched off. Ex. Sequence #1 = 100A, #2 = 200A and #3 = 300A If the machine is switched off when in sequence #2, the data will look like this after switching on again. Sequence #1 = 100A, #2 = 100A and #3 = 300A The fault has been fixed in this software version. | | | |
| 2,410 Impl. 24.10.2005 | <ul style="list-style-type: none"> When sequence data is stored in version 2.400 the fault E01 could appear in the display. The fault has been fixed. The SET current, which is send via CAN bus is now limited by the synergy range. | | | |

History for Flex 4000 software

| Version no. | Following improvements have been implemented in the current version | Standard Smartcard 12645001 – 2 | MIG solder Smartcard 12645003 – 4 | Aluminium Smartcard 12645005 – 6 |
|-------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|-----------------------------------------|----------------------------------------|
| 2,420 Impl. 31.10.2005 | <ul style="list-style-type: none"> The machine will now detects fault when light cable 6 and 7 are disconnected during machine start up sequence. The over voltage limit has been increased. A watchdog on the CAN based robot interface has been implemented. | | | |
| 2,430 Impl. 15.11.2005 | <ul style="list-style-type: none"> The machine could copy the slope down value from tag settings into the normal settings, when the tag function was disabled. | | | |
| 2,440 Impl. 22.12.2005 | <ul style="list-style-type: none"> Error E15 could be seen when the mains voltage were too high or too "soft". The current regulator has been changed so higher stability is obtained when the mains voltage varies. This will limit the amount of E15 faults. | | | |
| 2,450 Impl. 10.02.2006 | <ul style="list-style-type: none"> When changing the display readout between current/voltageTRIM and wire speed/voltage, can now be done by pressing "VOLT" button only. Previously the display readout changed also when activation sequence-change, view of "camel-parameters", secondary parameters, amount of sequences and changing between PULS and DC which often were undesired by the end users. The measurement method for welding voltage and current is changed so now the measurement data is useful for MigaMonitor data recording. | | | |
| SmartCard Impl. 24.03.2006 | <ul style="list-style-type: none"> Welding programs Fe 0.8mm ArCo2 and Fe 1.0mm ArCo2 have better ignition performance. | 20 | | |
| 2,470 Impl. 22.8.2006 | <ul style="list-style-type: none"> When MigManager was fitted, the machine would only start when program card was placed in the machine. This error has now been corrected. | | | |
| 2,470 Impl. 23.08.2006 | <ul style="list-style-type: none"> When MigManager was connected, the machine would not start up when the program card was placed in the machine at the same time. This fault has been solved. | | | |
| Smartcard Impl. | Text for welding program P113 and 118 were the same and caused some confusion. They have now been altered, making it possible | 21 | | |

History for Flex 4000 software

| Version no. | Following improvements have been implemented in the current version | Standard Smartcard 12645001 – 2 | MIG solder Smartcard 12645003 – 4 | Aluminium Smartcard 12645005 – 6 |
|-----------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|-----------------------------------------|----------------------------------------|
| 24.1.2007 | to see the difference. P113 "Fe ø1,2 ArCO ² (82/18) +" P118 "Fe ø1,2 ArCO ² (82/18) SP" | | | |
| 2.490 Impl. 2.2.2007 | Error E-15 and Mains Error E-11 have been removed so they no longer occur unintentional. | | | |
| Smartcard Impl. 7.3.2008 | There could be a small divergence between displayed current and welding current on processes P403 and P423. The displayed current now corresponds with the actual welding current. | 23 | | |
| 2.500 Impl. 9.5.2008 | Voltage on the wire could occur when welding was not taking place. This is corrected, so there is never voltage on the wire in standby mode. | | | |
| 2.510 Impl. 2.4.2009 | Voltage on the wire could still occur when welding was not taking place. This is corrected, so there is never voltage on the wire in standby mode. | | | |

Compatibility

Old Smartcards can be used in the new FLEX 4000 software versions. However, modifications depending on Smartcards cannot be seen. New Smartcards CANNOT be used in old FLEX 4000 software. For instance, Smartcard no. 8 will not function in a Flex 4000 with software version 3.80, when welding process 1.0 FE SG3 is selected. All other welding processes will function