Quality Control

Instructions for KINGSTAR and WINTIG MIG generators

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Document review

Rev.	Date	Drafted by	Description
1	26/05/2020	Tech. Dept.	First draft

QC General Activation

NOTE: It is recommended to update the generator to the latest available software release.

The *Quality Control* function is enabled through the unlocking of the software option art. 273

In order to use it, it is necessary to set the item *MENU → Accessories → Quality Control* to **ON**

and then the item *MENU → Accessories → Signalling* must be configured to decide if and how the generator should signal the operator when a control threshold is exceeded.

OFF	Exceeding the thresholds never interrupts the welding process and is only displayed in the weld log.
Immediate	Welding is stopped as soon as a threshold is exceeded.
End of bead	When a threshold is exceeded, welding is not interrupted, but a signal appears on the panel only when the arc is turned off. Subsequent START commands are inhibited until the operator *resets* the alarm.
End of piece	When a threshold is exceeded, welding is not interrupted, but a signal appears on the panel only when the operator uses the end-of-piece command (*Production Mode* software option art. 817 is required)

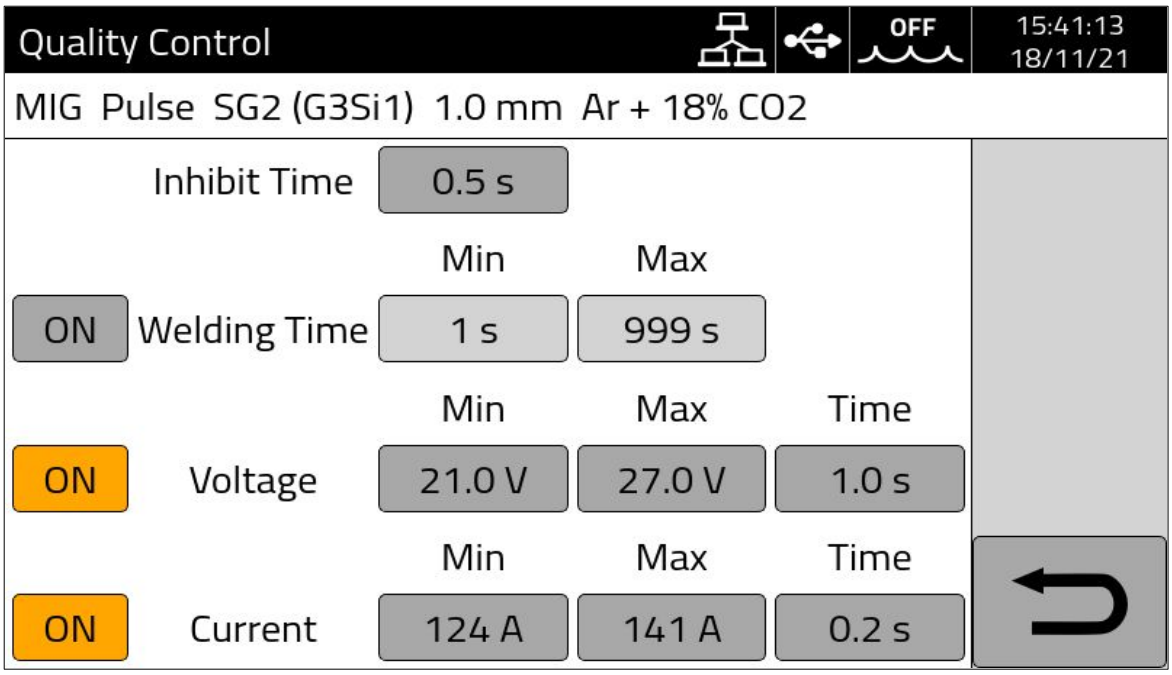
QC Parameter Configuration

Quality control thresholds can be set for each welding process through the page:

MENU → Parameters → Quality Control

The controlled quantities are welding time, arc voltage and arc current. All values refer to the main current and therefore exclude any *hot-start* and *crater-filler* phases.

Inhibition Time	It specifies after how long the welding parameters should start to be checked, allowing initial transients to be excluded.
Welding Duration	It checks that the welding duration is between a minimum and maximum time.
Voltage	It checks that the arc voltage is maintained between a minimum and maximum value.
Current	It checks that the arc current is maintained between a minimum and maximum value.



NOTE: for voltage and current it is necessary to indicate also the minimum time of threshold exceeding after which the generator signals an alarm. This avoids spurious signalling due to short imperfections of the bead under particular conditions.

QC Documentation

The results of the quality control are also saved in the weld log and can be viewed either by exporting to a PDF file or by exporting to CSV format using these indications:

PDF	CSV	Description
↓	**LO**	The physical quantity has exceeded the minimum threshold value
↑	**HI**	The physical quantity has exceeded the maximum threshold value
⇅	**HILO**	The physical quantity has exceeded the value of both the minimum and maximum thresholds
✗	**FAIL**	The bead did not pass the quality control (at least one threshold was exceeded)
✓	**PASS**	The bead passed quality control (no threshold was exceeded).

Example of export in PDF format:

CEBORA

Art.372-P2631A Weldments [18-05-2020]

Weldments

id	jobId	Orario di Inizio	Tempo di Saldatura [s]	Durata Arco Acceso [s]	Durata Corrente Principale [s]	Corrente Media [A]	Tensione Media [V]	Energia Erogata [J]	Velocità Filo [m/min]	Corrente Motore [A]	Filo Erogato [m]	Filo Erogato [g]	Gas Erogato [s]	Gas Erogato [l]	Saldatore	QC
10016		18-05-20 12:48:39	2.2	2.1	2.1	129 ↓	23.5 ✓	6403	5.9	0.2	0.20	1	2.2	0.4		✗
10015		18-05-20 12:47:57	7.9	4.7	4.7	128 ✓	23.4 ✓	14560	6.0	0.3	0.47	3	7.8	1.3		✓
10014		18-05-20 12:47:42	6.9	3.7	3.6	129 ✓	23.4 ✓	11479	6.0	0.3	0.37	2	6.8	1.1		✓
10013		18-05-20 12:45:03	5.6	2.4	2.4	129 ✓	23.4 ✓	7495	6.0	0.3	0.24	1	5.5	0.9		✓
10012		18-05-20 12:39:36	4.1	0.9	0.9	129 ✓	23.4 ✓	3041	5.9	0.3	0.09	1	4.1	0.7		✓
10011		18-05-20 12:34:53	1.7	1.6	1.6	129 ↑	23.5 ✓	4841	6.0	0.3	0.15	1	1.7	0.3		✗
10010		18-05-20 12:30:33	4.5	1.3	1.3	129 ✓	23.4 ✓	4241	6.0	0.2	0.13	1	4.5	0.7		✓
10009		18-05-20 11:33:45	1.7	1.6	1.6	130 ↑	23.6 ✓	4894	5.9	0.3	0.15	1	1.7	0.3		✗
10008		18-05-20 11:08:07	1.7	1.5	1.5	130 ↑	23.6 ✓	4835	6.0	0.3	0.15	1	1.6	0.3		✗
10007		18-05-20 11:05:49	5.1	1.9	1.9	129 ↑	23.5 ✓	6244	6.0	0.3	0.20	1	5.1	0.8		✗
10006		18-05-20 11:02:55	5.3	2.1	2.1	130 ↑	23.6 ✓	6902	6.0	0.3	0.21	1	5.3	0.9		✗
10005		18-05-20 11:01:40	4.0	0.8	0.8	131	23.7	2921	5.9	0.2	0.09	1	4.0	0.7		