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SubArc Digital Series

Submerged Arc Welding Power Source

Quick Specs

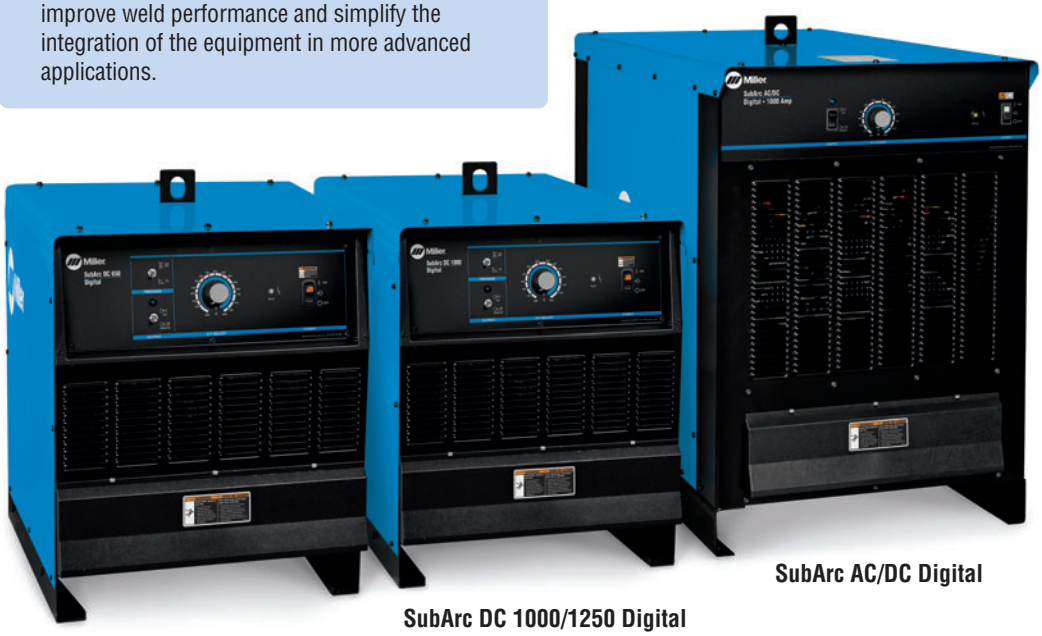
Heavy Industrial Applications
Railcar
Shipbuilding
Heavy fabrication
Pipe manufacturing
Pressure vessel

Processes
Submerged arc (SAW)
Electroslag (ESW)
Air carbon arc cutting and gouging (CAC-A)

Input Power
Requires 3-phase power

Rated Output
DC 650/800: 650 A at 44 V, 100% duty cycle
DC 1000/1250: 1,000 A at 44 V, 100% duty cycle
AC/DC: 1,000 A at 44 V, 100% duty cycle

SubArc Digital Series
- Choice of three power sources, three interface controls and a range of wire drive motors and accessories.
- Digital process control technology.
- Highly reliable thyristor power regulation.
- Digital control and communication electronics improve weld performance and simplify the integration of the equipment in more advanced applications.



SubArc AC/DC Digital

SubArc DC 1000/1250 Digital

SubArc DC 650/800 Digital

Easy to integrate. Our SubArc power sources are easy to integrate by using a standard Modbus® connection. Different levels of integration are possible, from simple remote operation to more complex automated systems.

Two DC power source models and one AC/DC power source model. Power sources have sufficient power capacity to cover applications from traditional DC single-arc to multi-wire tandem welding. In the case of electroslag welding or other high-current demand, two or more power sources can easily be paralleled (both DC and AC/DC machines).

Easier setup and operation. The SubArc Digital Series interface controls recognize the power source and wire drive connected, and automatically configure the system for proper operation. The easy-to-understand interface provides the operator with the necessary controls to set process parameters and control output. The power sources feature simplified parallel and tandem setups — just plug the cable into the appropriate connectors.

Improved flux delivery system. Our SubArc flux hopper utilizes a flux valve mechanism that assures continuous delivery of flux to the arc. The unique valve design provides a barrier between the flux and actuation device to help prevent jamming of the solenoid actuator due to dust and debris. A sight glass is provided on the front of the flux hopper allowing the weld operator to visually monitor the remaining flux in the hopper.

Low-voltage accessory operation and improved environmental protection. The digital series accessories are powered with 24 VAC control voltage from the power source. All power sources, interface controls and wire drives are IP23 rated providing a high level of protection for harsh environments.

All power sources also feature thermal overload protection, line voltage compensation and Fan-On-Demand™.

TRUE BLUE® 3YR. WARRANTY

Power source is warranted for three years, parts and labor.
Original main power rectifier parts are warranted for five years.

Miller recommends

HOBART FILLER METALS

Miller®

Miller Electric Mfg. Co.
An ITW Welding Company
1635 West Spencer Street
P.O. Box 1079
Appleton, WI 54912-1079 USA

Equipment Sales US and Canada
Phone: 866-931-9730
FAX: 800-637-2315
International Phone: 920-735-4554
International FAX: 920-735-4125

MillerWelds.com

ISO 9001 REGISTERED QUALITY SYSTEM

SubArc DC Digital

SubArc DC 650/800 Digital and DC 1000/1250 Digital cover most single- and twin-wire applications. These traditional transformer/rectifier power sources combine high efficiency with the highest reliability. They also feature state-of-the-art digital-control electronics to provide best-in-class welding performance and repeatability.

SubArc DC Digital Specifications (Subject to change without notice.)

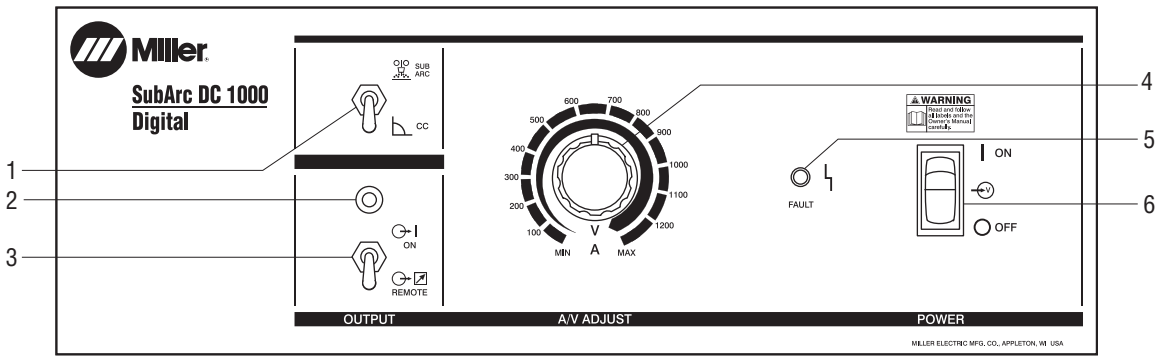
Model	Amperage/ Voltage Ranges	Rated Output	IP Rating	Amps Input at Rated Load Output, 60 Hz 230 V	460 V	575 V	Amps Input at Rated Load Output, 50 Hz 380 V	400 V	440 V	KVA	KW	Maximum Open-Circuit Voltage DC**	Dimensions	Net Weight
SubArc DC 650 Digital	50–815 A in CC mode	650 A at 44 V, 100% duty cycle	IP23	126 3.8*	63 1.9*	50.4 1.4*	— —	— —	— —	50 1.52*	34.8 0.76*	75 Vpk	H: 30 in. (762 mm) *(including lift eye)* W: 23 in. (584 mm) D: 38 in. (965 mm) *(not including strain relief)*	593 lb. (269 kg)
SubArc DC 800 Digital	20–44 V in sub arc mode	815 A at 44 V, 60% duty cycle		— —	— —	— —	95 1.9*	90 1.8*	83 1.6*					603 lb. (273 kg)
SubArc DC 1000 Digital	100–1,250 A in CC mode	1,000 A at 44 V, 100% duty cycle	IP23	180 5.8*	90 2.9*	72 2.4*	— —	— —	— —	73 3.2*	53 0.5*	68 Vpk		682 lb. (309 kg)
SubArc DC 1250 Digital	20–44 V in sub arc mode	1,250 A at 44 V, 60% duty cycle		— —	— —	— —	135 5.2*	128 5.0*	117 4.5*					681 lb. (309 kg)

**While idling.* ***Open-circuit voltages in CV mode are factory set at values less than indicated for CC.*

SubArc DC 650 Digital and DC 1000 Digital models are certified by Canadian Standards Association to both the Canadian and U.S. Standards.

All SubArc DC Digital models are manufactured and certified in accordance with IEC-60974-1, -10.

SubArc DC Digital Control Panel



1. Process Selector Switch
2. Output Indicator Light
3. Output Switch (Contactor)
4. Amperage/Voltage Adjustment Control
5. Fault Indicator
6. Power Switch

SubArc AC/DC Digital

SubArc AC/DC Digital and SubArc AC/DC 1250 Digital. AC welding output enables the SubArc AC/DC to be used in tandem-arc welding systems with a DC lead arc and AC trailing arc, or with AC/AC arc combinations. Using multiple arcs increases deposition rate, resulting in shorter welding cycles for very thick weldments without compromising quality. All AC balance control modes can be set on the SubArc Interface Digital or the SubArc Remote Pendant Digital. These easy-to-understand interfaces include two DC modes and 12 best-practice AC balance settings. In multiple-arc configurations, the system automatically adjusts the phase shifting between power sources thereby eliminating arc interaction. There is no need to employ a laptop PC for complex wave shaping before operation.

SubArc AC/DC Digital Specifications (Subject to change without notice.)

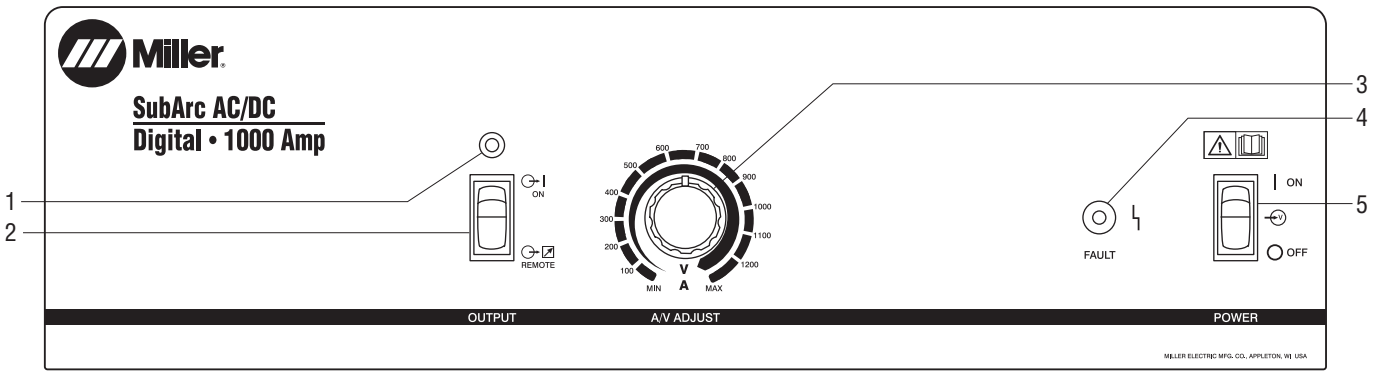
Model	Amperage/ Voltage Ranges	Rated Output	IP Rating	Amps Input at Rated Load Output 460 V (60 Hz)	380 V (50 Hz)	400 V (50 Hz)	KVA	KW	Maximum Open-Circuit Voltage DC	Dimensions	Net Weight
SubArc AC/DC Digital	300–1,250 A in CC mode 20–44 V in sub arc mode	1,000 A at 44 V, 100% duty cycle 1,250 A at 44 V, 60% duty cycle	IP23	122 3.0*	— —	— —	98 2.37*	53 0.95*	93 Vpk	H: 43 in. (1,092 mm) *(including lift eye)* W: 28 in. (711 mm) D: 48 in. (1,219 mm) *(not including strain relief)*	1,187 lb. (538 kg)
SubArc AC/DC 1250 Digital				— —	179 3.0*	176 3.0*	122 2.37*	67 0.95*			1,260 lb. (572 kg)

**While idling.*

SubArc AC/DC Digital is certified by Canadian Standards Association to both the Canadian and U.S. Standards.

Both SubArc AC/DC Digital models are manufactured and certified in accordance with IEC-60974-1, -10.

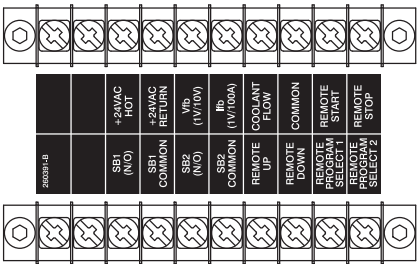
SubArc AC/DC Digital Control Panel



1. Output Indicator Light
2. Output Switch (Contactor)
3. Amperage/Voltage Adjustment Control
4. Fault Indicator
5. Power Switch

SubArc Interface

SubArc Interface Digital



Internal terminal strip is able to integrate with positioners, sidebeams, turning rolls and other peripheral equipment.

SubArc Interface Analog

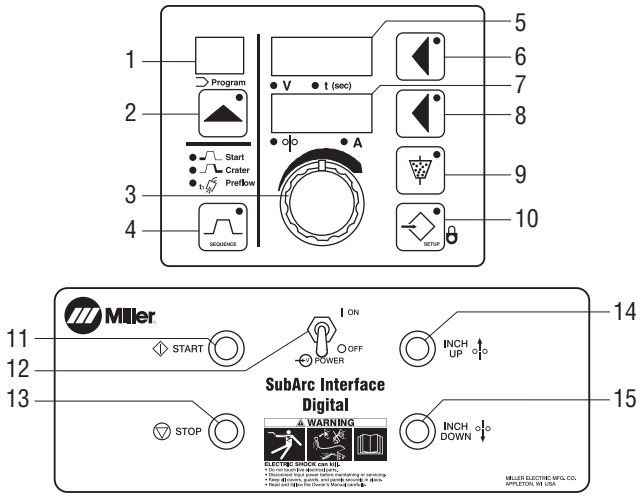
SubArc Interface Specifications (Subject to change without notice.)

Model	Input Power from Welding Power Source	Welding Power Source Type	Weld Voltage and Amperage Capacity	Dimensions	Net Weight
SubArc Interface Digital	24 VAC, single-phase, 25 A, 50/60 Hz	Constant voltage (CV), AC or DC, with remote contactor and output control capabilities	0–100 V 0–1,500 A	H: 11.5 in. (292 mm) W: 12 in. (305 mm) D: 7 in. (178 mm)	15.8 lb. (7.2 kg)
SubArc Interface Analog	24 VAC, single-phase, 25 A, 50/60 Hz	Constant current (CC), constant voltage (CV), DC with remote contactor and output control capabilities	0–60 V 0–1,500 A		

Certified by Canadian Standards Association to both the Canadian and U.S. Standards.

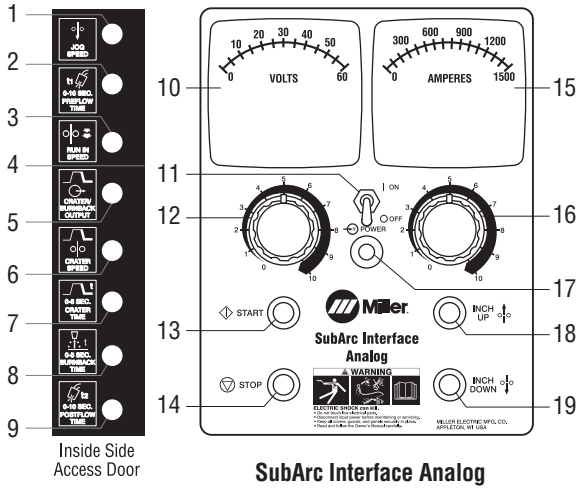
Manufactured according to the Standard IEC-60974-1, -5, -10.

SubArc Interface Control Panels



SubArc Interface Digital

1. Program Display
2. Program Push Button
3. Adjust Control
4. Sequence Push Button
5. Upper Display
6. Upper Display Push Button
7. Lower Display
8. Lower Display Push Button
9. Flux Push Button
10. Setup Push Button
11. Start Button
12. Power Switch
13. Stop Button
14. Wire Inch Up
15. Wire Inch Down



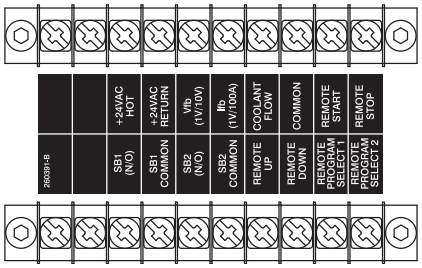
Inside Side Access Door

SubArc Interface Analog

1. Jog Speed
2. Preflux Time 0–10 Seconds
3. Run-In Speed
4. CC/CV Switch (Located on Right Side of Access Panel)
5. Crater/Burnback Output
6. Crater Speed
7. Crater Time 0–5 Seconds
8. Burnback Time 0–5 Seconds
9. Postflow Time 0–10 Seconds
10. Voltage Meter
11. Power Switch
12. Output Control Knob
13. Start Button
14. Stop Button
15. Amperage Meter
16. Wire Feed Speed Control Knob
17. Indicator Light
18. Wire Inch Up
19. Wire Inch Down

SubArc Remote Operator Interface

Motor Control Digital



Internal terminal strip inside Motor Control Digital is able to integrate with positioners, sidebeams, turning rolls and other peripheral equipment.

Remote Pendant Digital

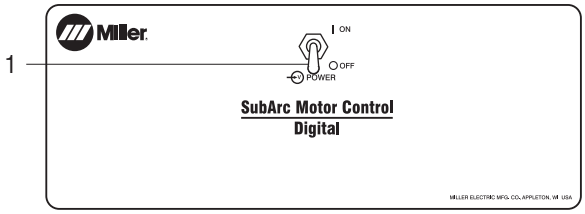
SubArc Remote Operator Interface Specifications (Subject to change without notice.)

Model	Input Power from Welding Power Source	Welding Power Source Type	Weld Voltage and Amperage Capacity	Dimensions	Net Weight
Motor Control Digital	24 VAC, single-phase, 25 A, 50/60 Hz	Constant voltage (CV), AC or DC, with remote contactor and output control capabilities	0–100 V 0–1,500 A	H: 11.5 in. (292 mm) W: 12 in. (305 mm) D: 7 in. (178 mm)	15.8 lb. (7.2 kg)
Remote Pendant Digital	42 VDC, 1 A			H: 11 in. (279 mm) W: 10.63 in. (270 mm) D: 3.125 in. (80 mm)	3 lb. (1.4 kg)

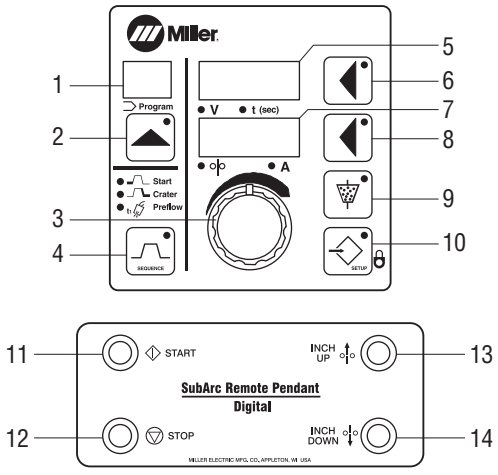
Certified by Canadian Standards Association to both the Canadian and U.S. Standards.

Manufactured according to the Standard IEC-60974-1, -5, -10.

SubArc Remote Operator Interface Control Panels



Motor Control Digital



Remote Pendant Digital

1. Power Switch

1. Program Display
2. Program Push Button
3. Adjust Control
4. Sequence Push Button
5. Upper Display
6. Upper Display Push Button
7. Lower Display
8. Lower Display Push Button
9. Flux Push Button
10. Setup Push Button
11. Start Button
12. Stop Button
13. Wire Inch Up
14. Wire Inch Down