

Contents



PHOENIX

- HIGHLIGHTS**
- SYSTEM OVERVIEW**
- CONTROL**
- ACCESSORIES**
- TECHNICAL DATA**
- MAIN AREAS OF APPLICATION**

EVOLUTION X

HIGHLIGHTS

EVOLUTION X

Product range PHOENIX



PHOENIX PROGRESS

- Manual operation, simple mechanisms
- All materials with standard applications
- MIG/MAG
- MMA
- Simplest possible operation direct and fast to weld

PHOENIX EXPERT

- Manual, mechanical and robot operation
- All materials with standard and special applications
- MIG/MAG
- TIG
- MMA
- Simple to operate and possibility to maximise operating comfort through programming of jobs and welding parameters via the integrated Expert System or via a computer with the PHOENIX PCM 300 software

PHOENIX PROGRESS STANDARD

- Standard MIG/MAG welding: Short arc, spray arc

PHOENIX PROGRESS PULSE

- MIG/MAG pulse welding (additional): Low-spatter in all arc-welding operations

UPGRADE

PHOENIX EXPERT STANDARD

- Standard MIG/MAG welding: Short arc, spray arc

PHOENIX EXPERT PULS

- MIG/MAG pulse welding (additional): Low-spatter in all arc-welding operations

UPGRADE

Universal - 3 welding processes in one machine



PHOENIX PROGRESS STANDARD



PHOENIX PROGRESS PULS



Standard
MIG/MAG welding



MMA welding



Pulse arc
MIG/MAG welding



Standard
MIG/MAG welding



MMA welding

Materials

- Solid and flux-cored wire electrodes, 0.8 - 2.4 mm, coated electrodes: Rutile, basic, PHOENIX 500 also suitable for cellulose

PHOENIX PROGRESS STANDARD

- Unalloyed and low-alloy steels (restrictions on high-alloy steels and aluminium alloys)

PHOENIX PROGRESS PULS

- Unalloyed, low-alloy and high-alloy steels, aluminium alloys, copper and its alloys, special alloys

Applications

- Production and repair work: Chemical and foodstuffs industry, machine and plant construction, vehicle, automobile, railway vehicle and ship construction, container, tank and equipment construction, steel and metal construction work, offshore, etc.
- Workshop, construction site and assembly work in trade and industry

EVOLUTION X

Universal - 4 welding processes in one machine



PHOENIX EXPERT STANDARD



PHOENIX EXPERT PULS



Standard
MIG/MAG-
welding



MMA
welding



TIG
welding



Pulse arc
MIG/MAG
welding



Standard
MIG/MAG-
welding



MMA
welding



TIG
welding

Materials

- Solid and flux-cored wire electrodes, 0.8 - 2.4 mm, coated electrodes: Rutile, basic, PHOENIX 500 also suitable for cellulose

PHOENIX EXPERT STANDARD

- Unalloyed and low-alloy steels (restrictions on high-alloy steels and aluminium alloys)

PHOENIX EXPERT PULS

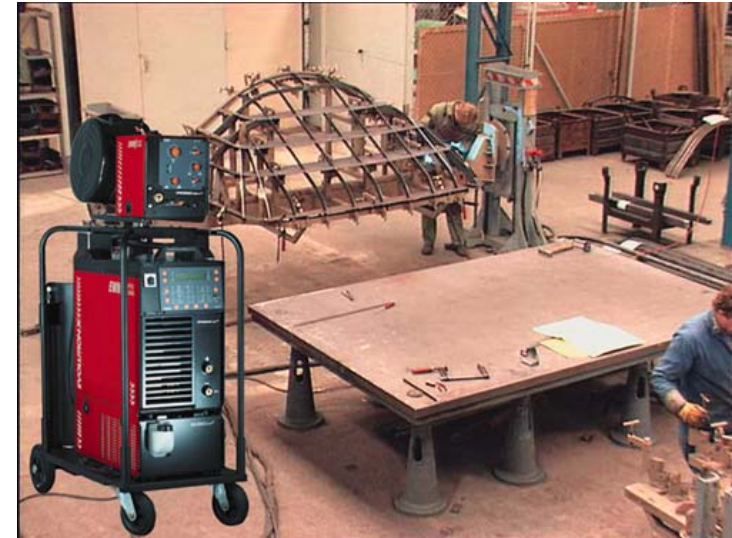
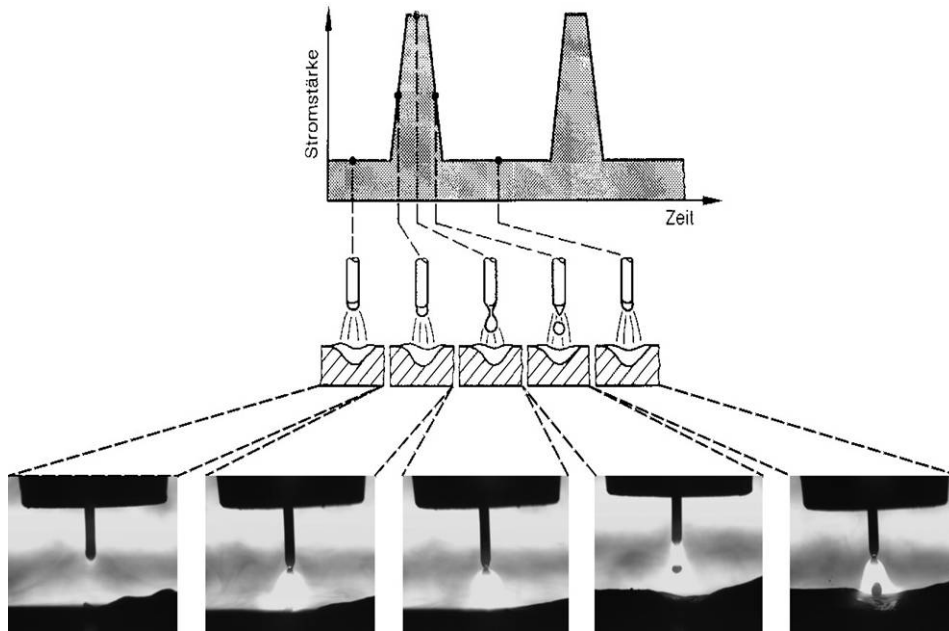
- Solid ad fluxed-core wire electrodes (0.8 - 2.4 mm), coated electrodes: rutile, basic, PHOENIX 500 also suitable for cellulose
- Unalloyed, low-alloy and high-alloy steels, aluminium alloys, copper and its alloys, special alloys

Applications

- Production and repair work: Chemical and foodstuffs industry, machine and plant construction, vehicle, automobile, railway vehicle and ship construction, container, closed container and equipment construction, steel and metal construction work, offshore, etc.
- Workshop, construction site and assembly work in trade and industry
- Robot, industrial bus and mechanised applications
- Special customised welding tasks

EVOLUTION X

Outstanding welding properties



Application: Railway vehicle construction

- **Efficient**

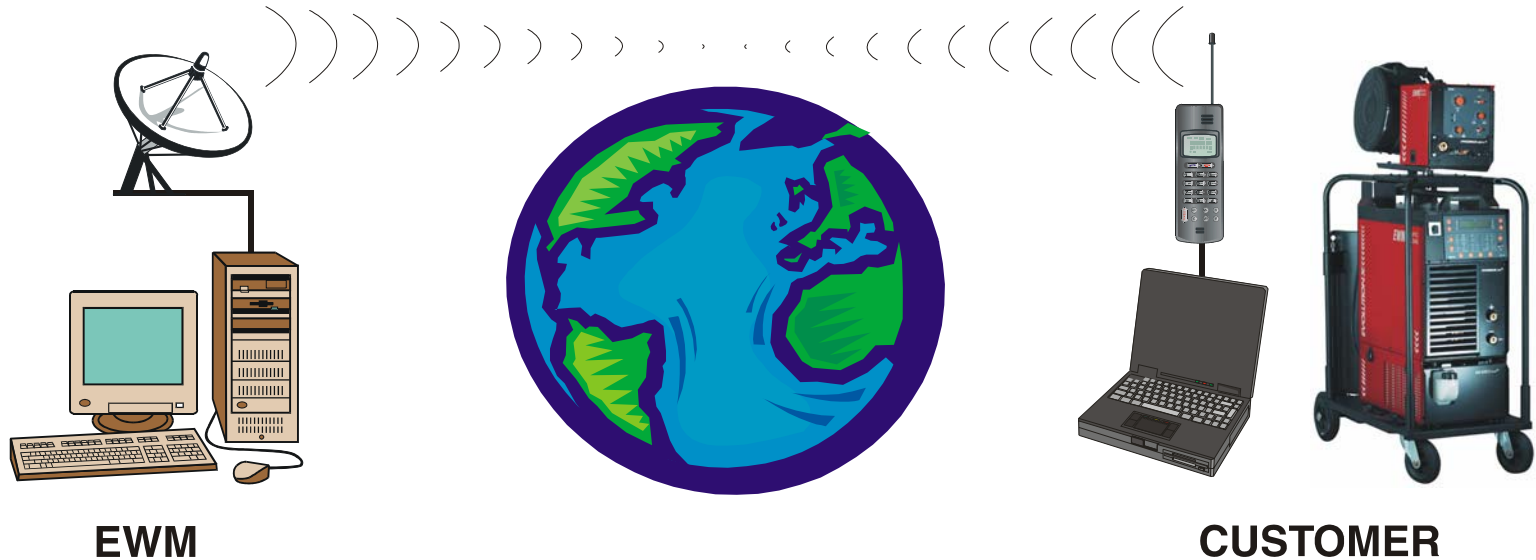
- ↳ Low-spatter arc with defined, shortcircuit-free drip transition (therefore less finishing work)
- ↳ Primary-switched inverter power unit with high efficiency and $\cos \phi = 0.99$ (therefore lower energy consumption)

- **Reproducible welding results of the highest possible quality**

- ↳ Using digital microprocessor system

EVOLUTION X

Worldwide communication - 2nd generation digital system



- **Online - via the Internet - analyse and optimise welding parameters during welding**
- **Transfer of software updates and welding parameters for special applications**
- **Transfer ready-made programs and welding parameters to other machines**

PHOENIX 300



Portable pulse power source with integrated wire feed unit

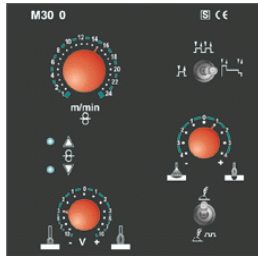
- **Greatest degree of mobility combined with excellent welding properties** make the Phoenix 300 the ideal tool for all applications at any location
- **Stable, robust metal housing** for the toughest demands even in multi-shift usage



- **Steady wire feeding features** integrated wire feeding system with 4-rolls-drive (37mm rolls) in metal design
- **Effective working**
Draw for the standard wire spools D/K 300

EVOLUTION X

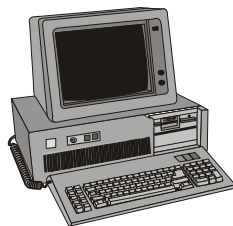
Maximum flexibility for manual and machine applications



Wire feeder - control M300



Welding machine - control M310



**PC (PCM 300)
(EXPERT only)**



Welding torch



**Industrial bus interface
BUS-INT X10
(EXPERT only)**



**Robot interface
RINT X11**



**Remote control
PHOENIX R10**



**Remote control
PHOENIX R40**

EVOLUTION X

Modular - combine without tools or specialist staff - Plug & Weld



PHOENIX DRIVE 4 ROB



PHOENIX DRIVE 4



PHOENIX DRIVE 4L



PHOENIX R10



PHOENIX R40



decompact:
PHOENIX 400,
PHOENIX 500



TROLLY70-2



compact mit integrated
wire feeder:
PHOENIX 300



Pre-selection
transformer
MULTIVOLT 70-500



COOL71 U40
COOL71 U41 (reinforced)



MIG torch



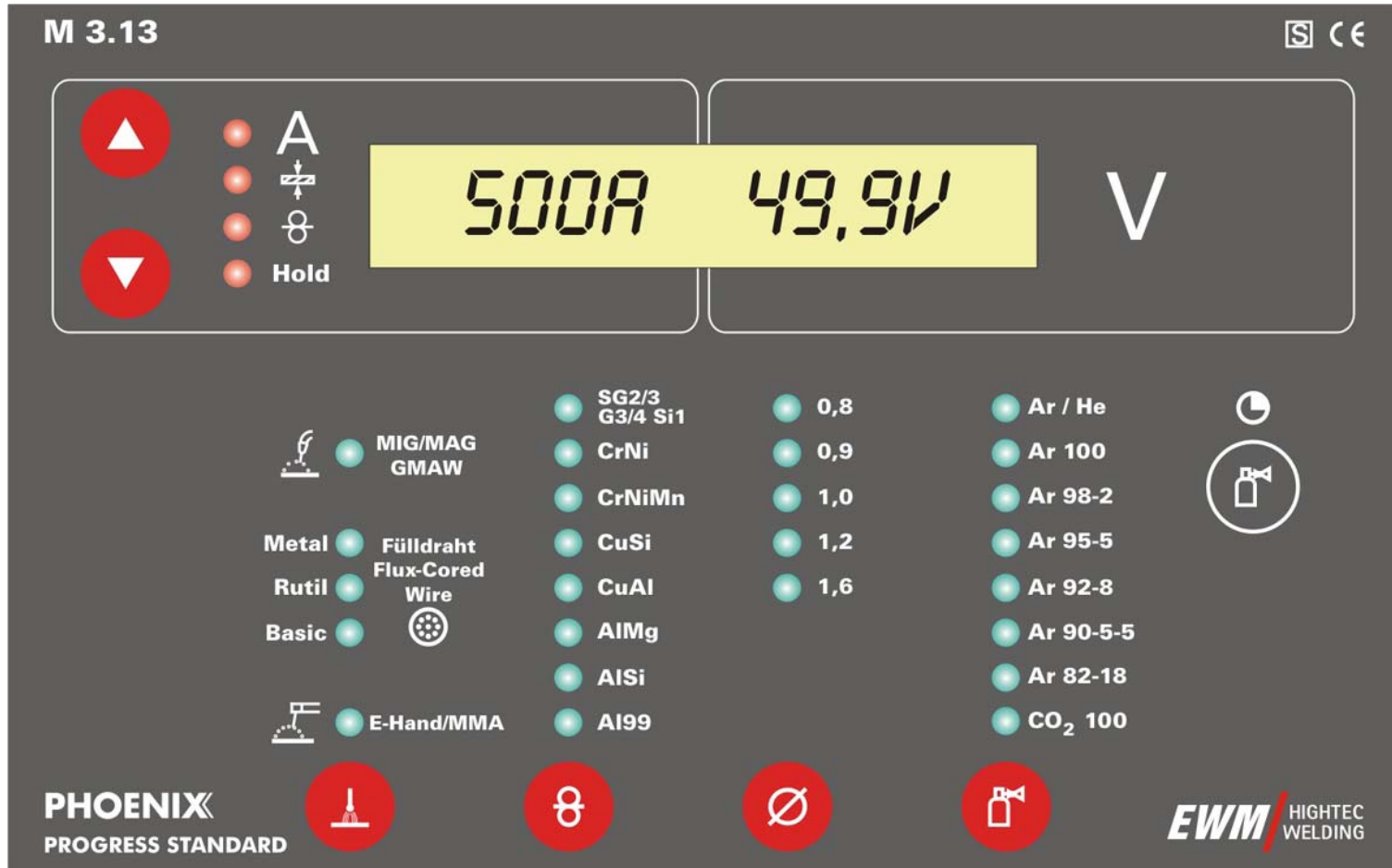
TIG torch



Electrode holder

EVOLUTION X

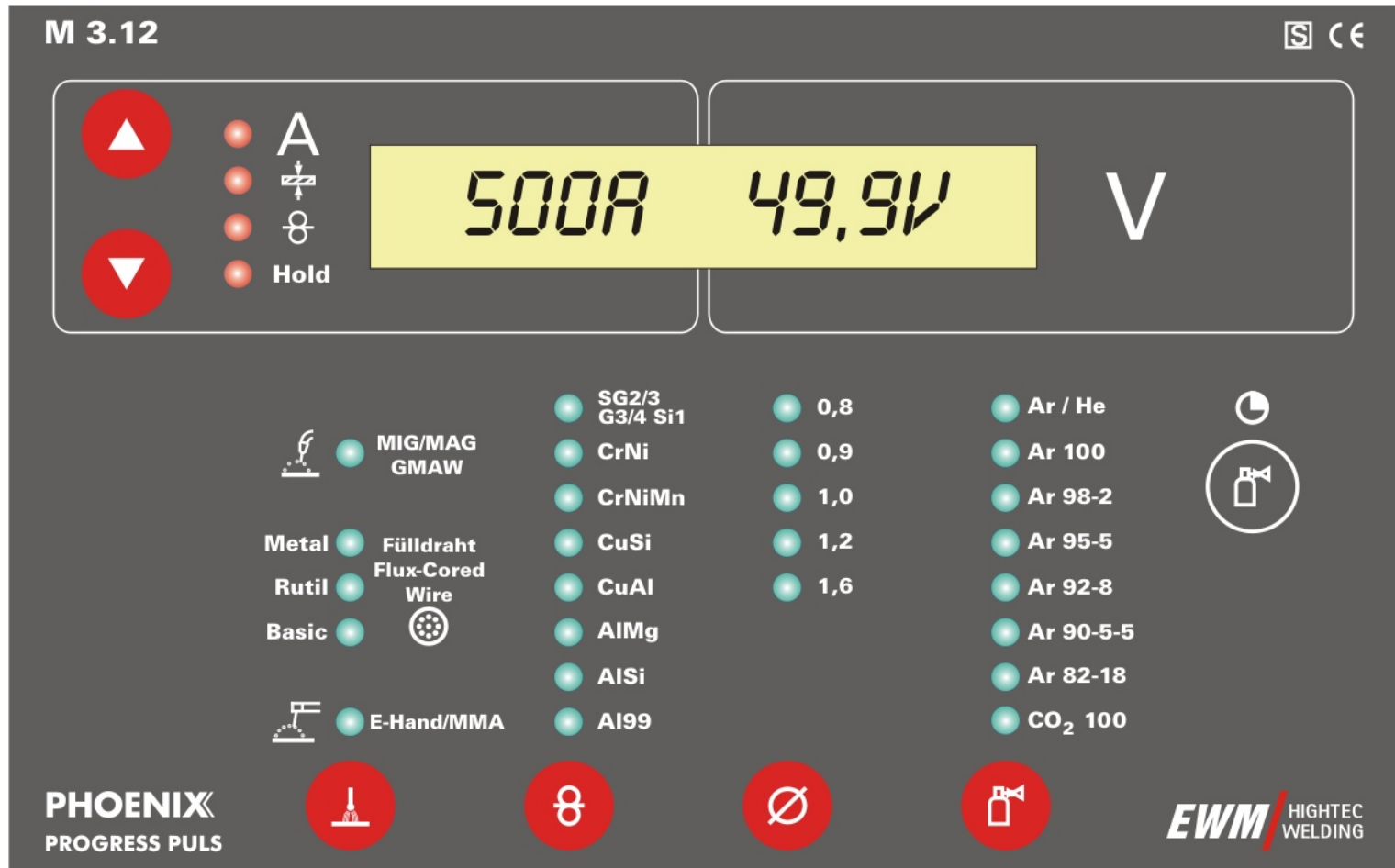
Welding machine control M 3.13



- **Standard MIG/MAG welding: Short arc, spray arc**

EVOLUTION X

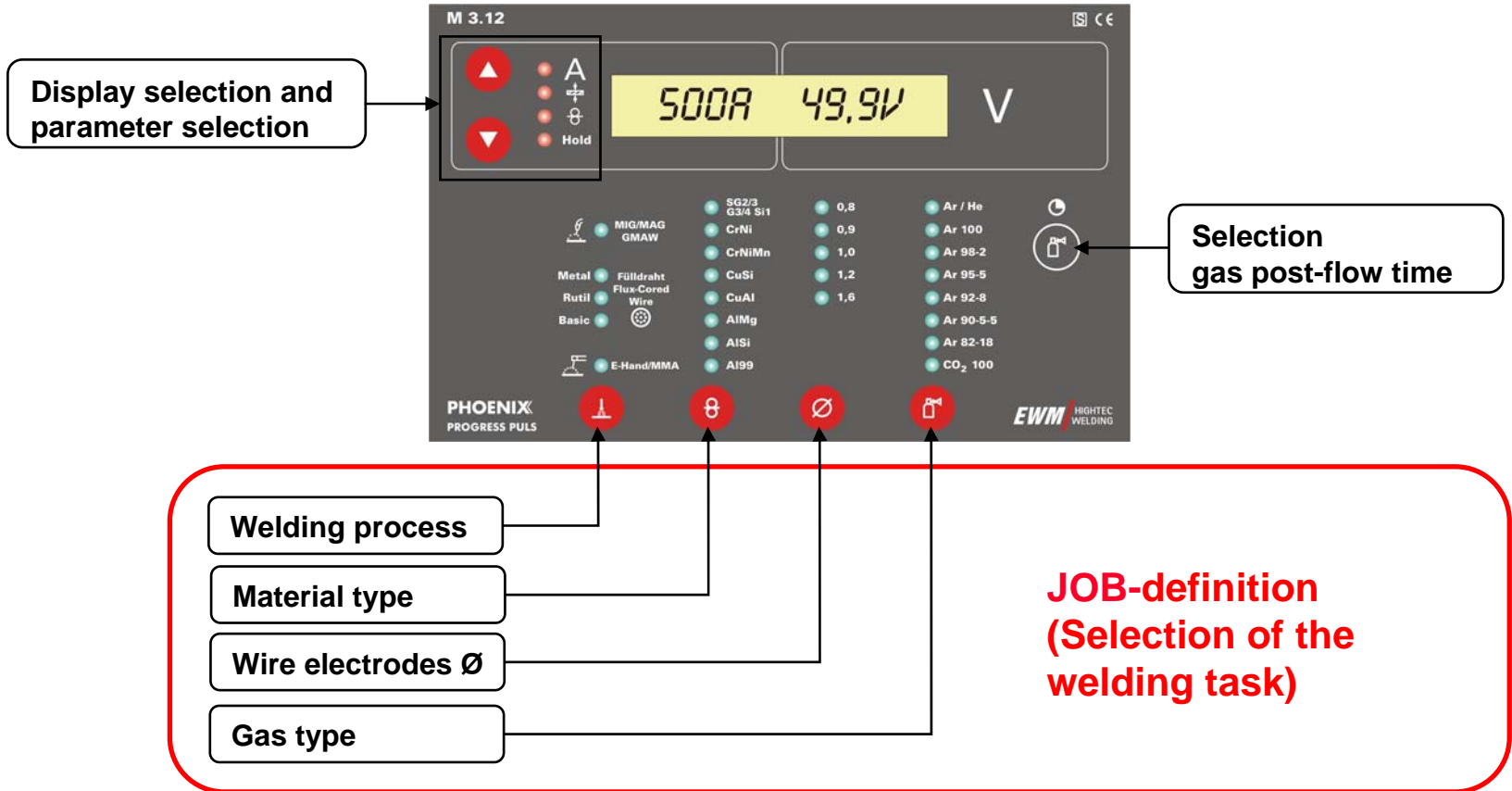
Welding machine control M 3.12



- **MIG/MAG pulse welding:** Low-spatter in all arc-welding operations
- **Standard MIG/MAG welding:** Short arc, spray arc

EVOLUTION X

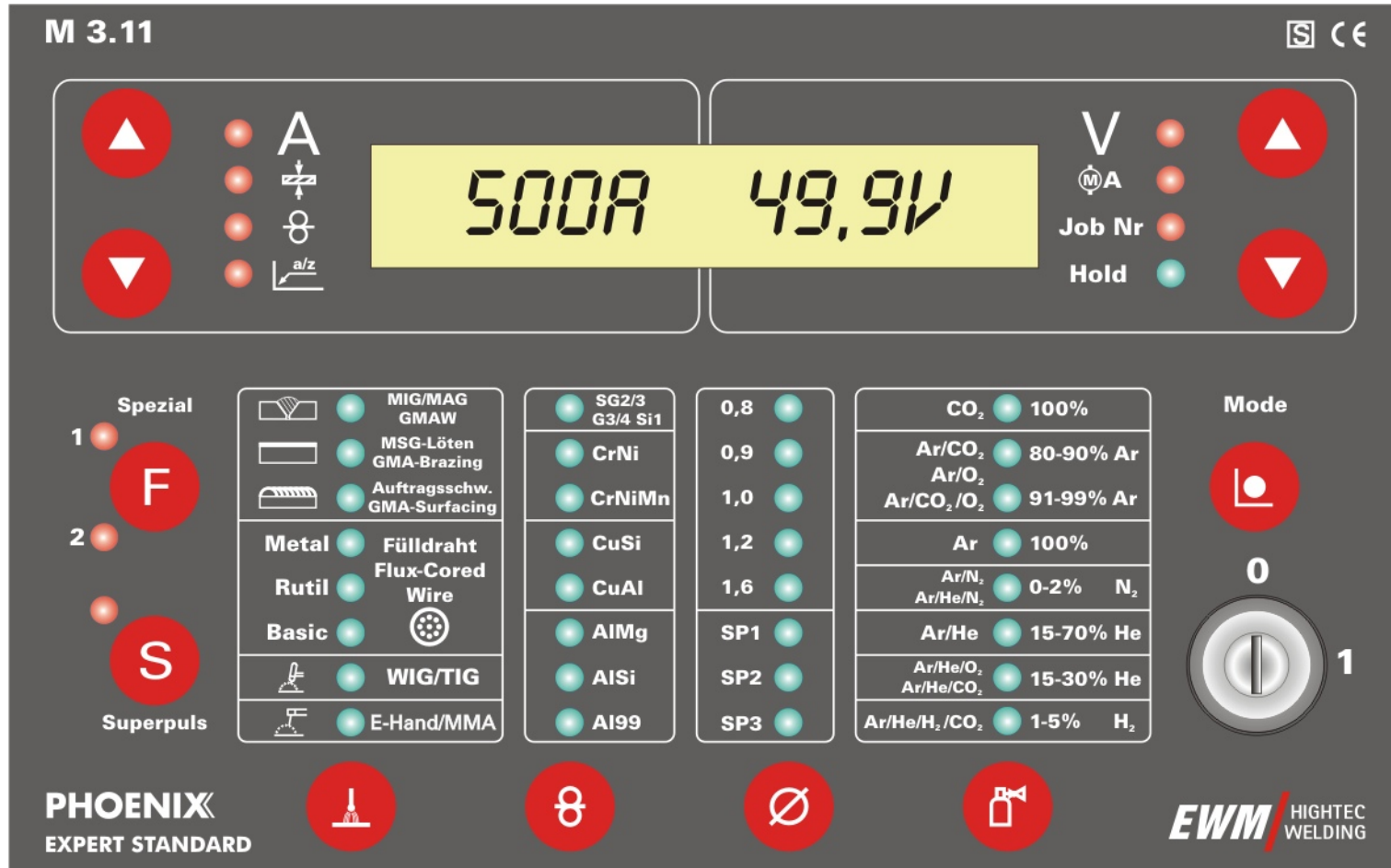
Very simple to operate



- 128 jobs in total pre-programmed jobs for the most common welding tasks

EVOLUTION X

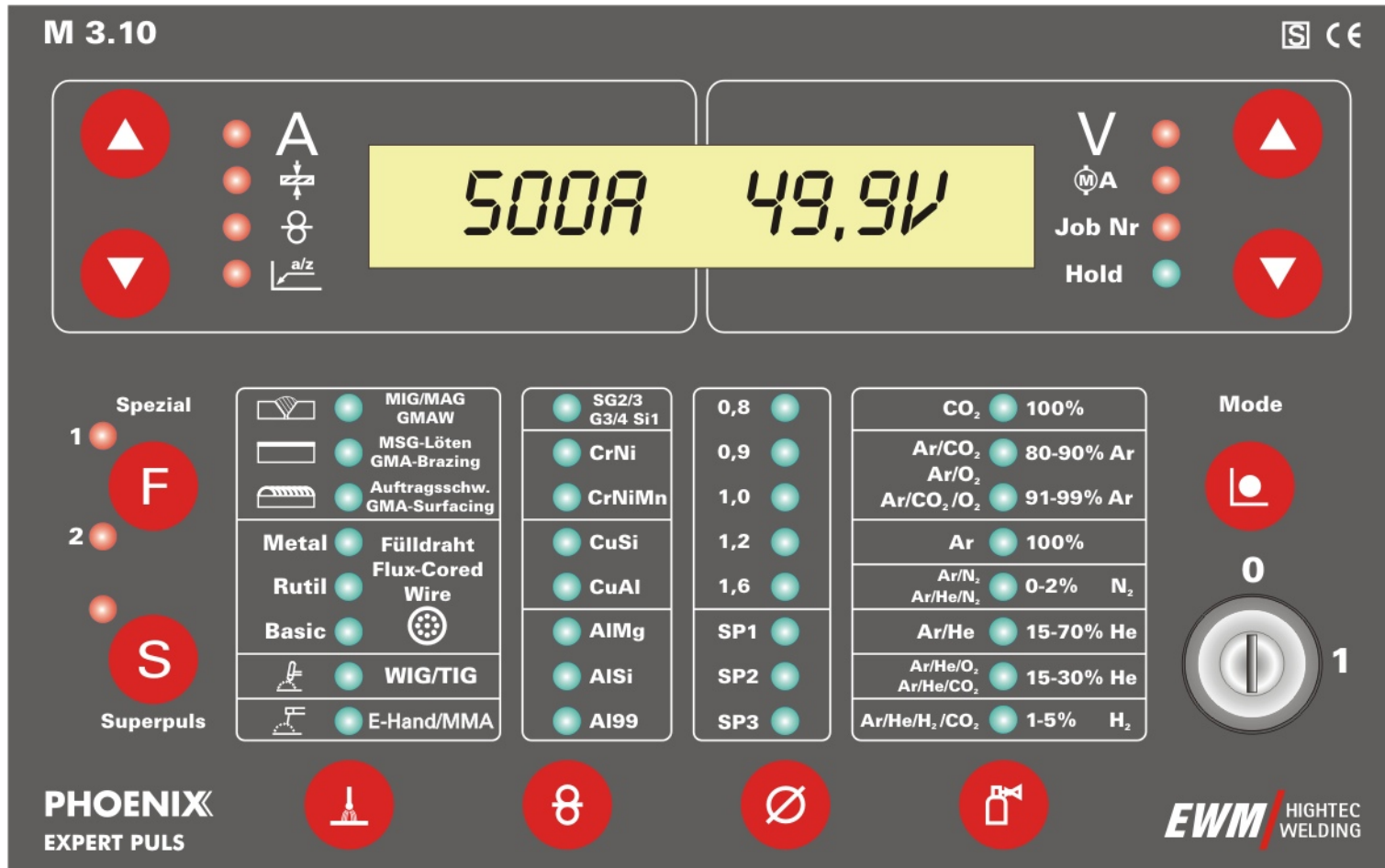
Welding machine control M 3.11



- **Standard MIG/MAG welding: Short arc, spray arc**

EVOLUTION X

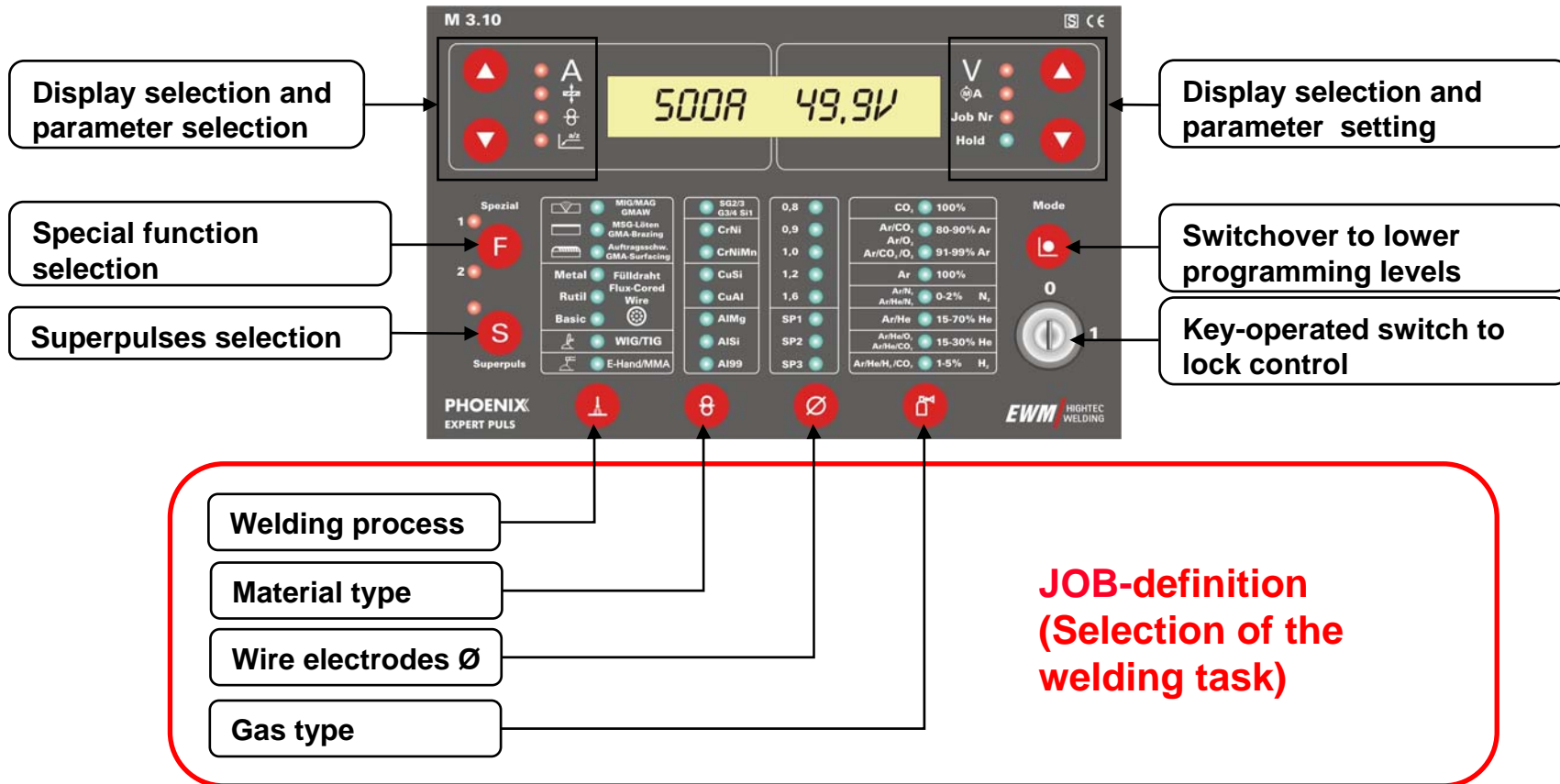
Welding machine control M 3.10



- **MIG/MAG pulse welding: Low-spatter in all arc-welding operations**
- **Standard MIG/MAG welding: Short arc, spray arc**

EVOLUTION X

Maximum functionality - very simple to operate



- **256 jobs in total**

- ↳ 128 pre-programmed jobs for the most common welding tasks
- ↳ 128 further memory spaces, individually user-programmable jobs for customer-specific applications

EVOLUTION X

Welding machine control M 3.30 + M 3.10 (PHOENIX 300)

M 3.10

500A 49,9V

M 3.30

PHOENIX EXPERT PULS

EWM HIGHTEC WELDING

Mode

CO ₂	100%
Ar/CO ₂	80-90% Ar
Ar/O ₂	91-99% Ar
Ar	100%
Ar/N ₂	0-2% N ₂
Ar/He/N ₂	0-2% N ₂
Ar/He	15-70% He
Ar/He/O ₂	15-30% He
Ar/He/CO ₂	15-30% He
Ar/He/H ₂ /CO ₂	1-5% H ₂

Spezial

- 1 ● MIG/MAG GMAW
- 2 ● MSG-Löten GMA-Brazing
- Auftragsschw. GMA-Surfacing

Metal

- Fülldraht Flux-Cored Wire

Rutil

- WIG/TIG

Basic

- E-Hand/MMA

SG2/3

- G3/4 Si1

CrNi

- CrNiMn

CuSi

- CuAl

AlMg

- AISi

Al99

0,8

- 0,9
- 1,0
- 1,2
- 1,6

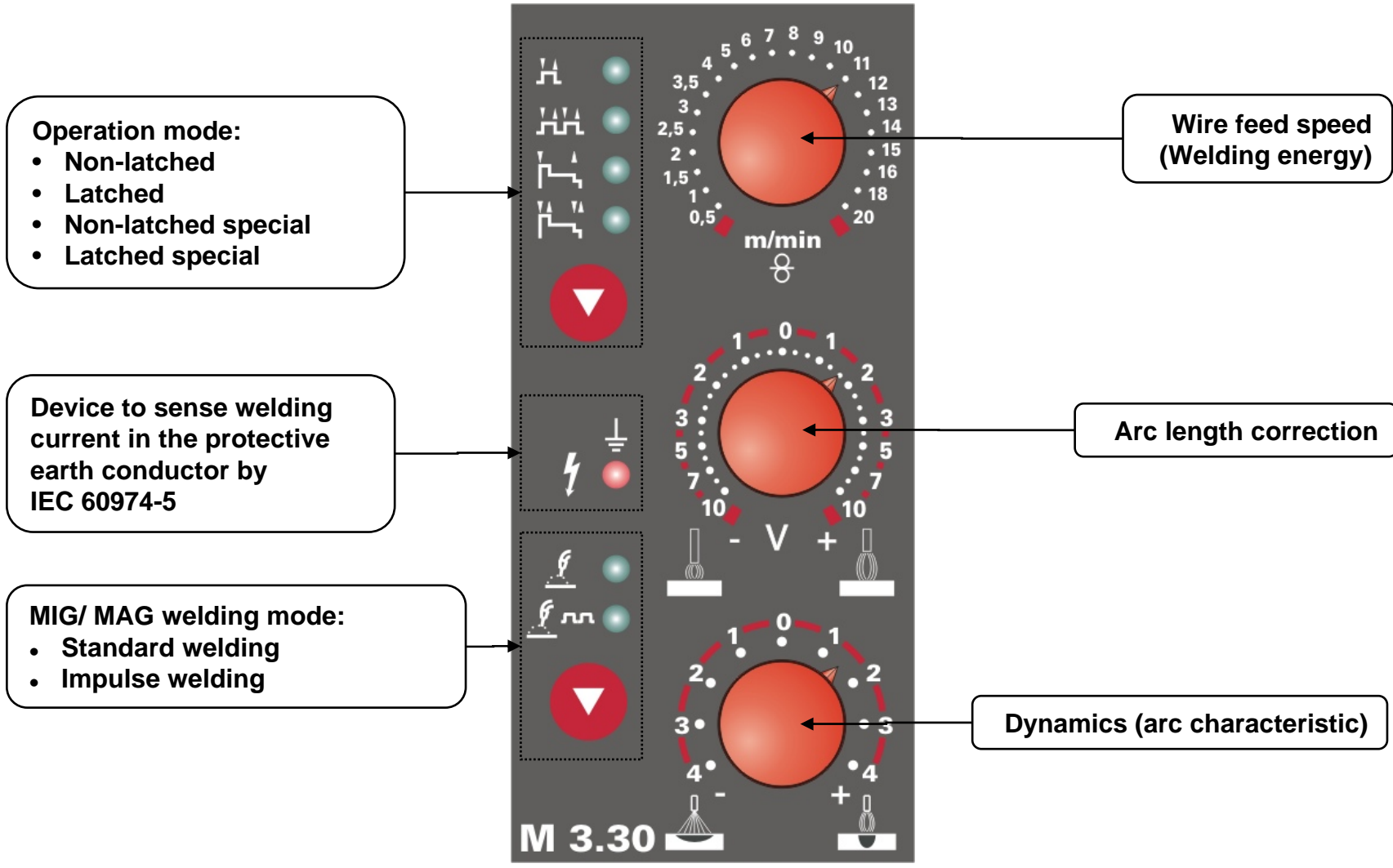
SP1

- SP2
- SP3

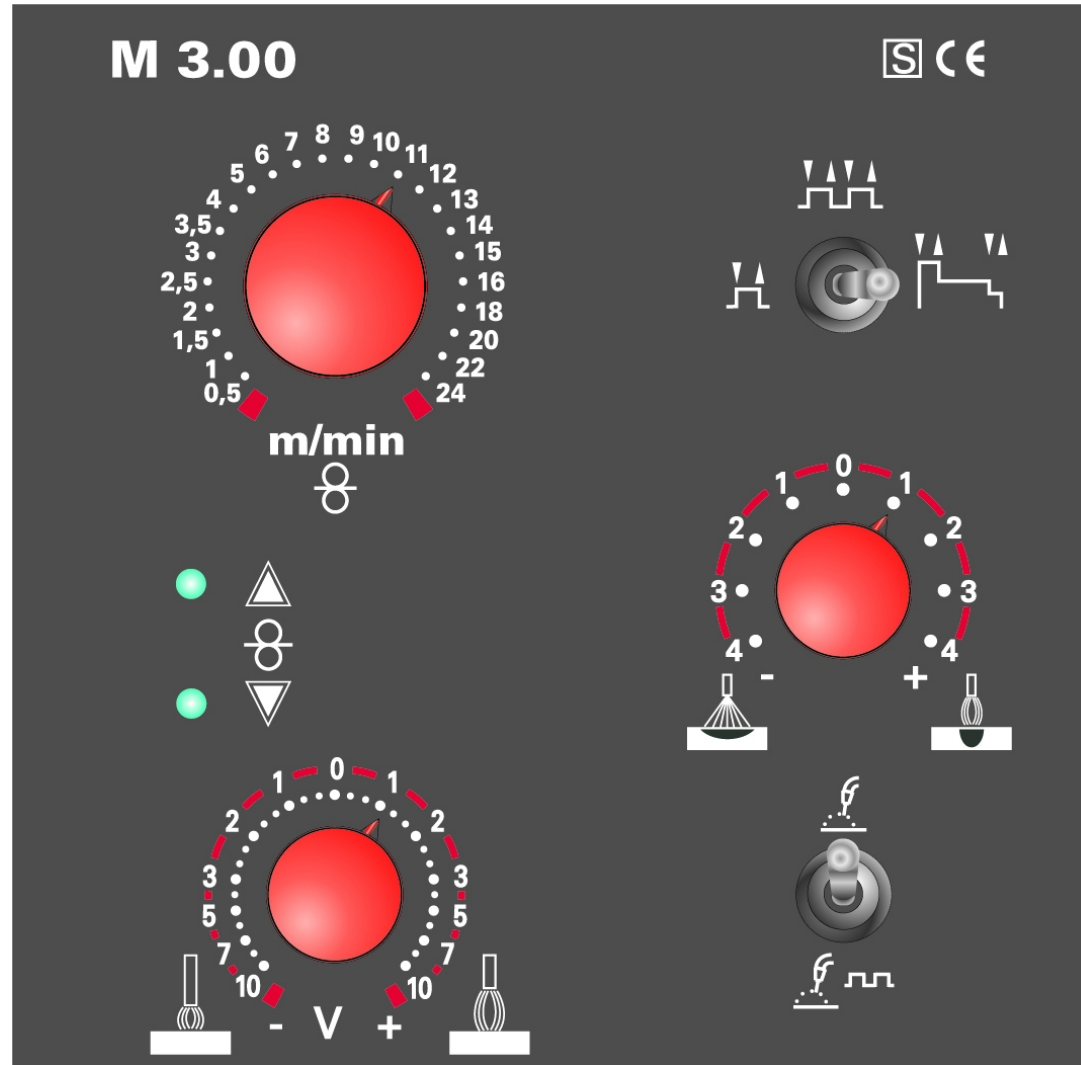
EVOLUTION X

PHOENIX 300 - control M 3.30

EVOLUTION X

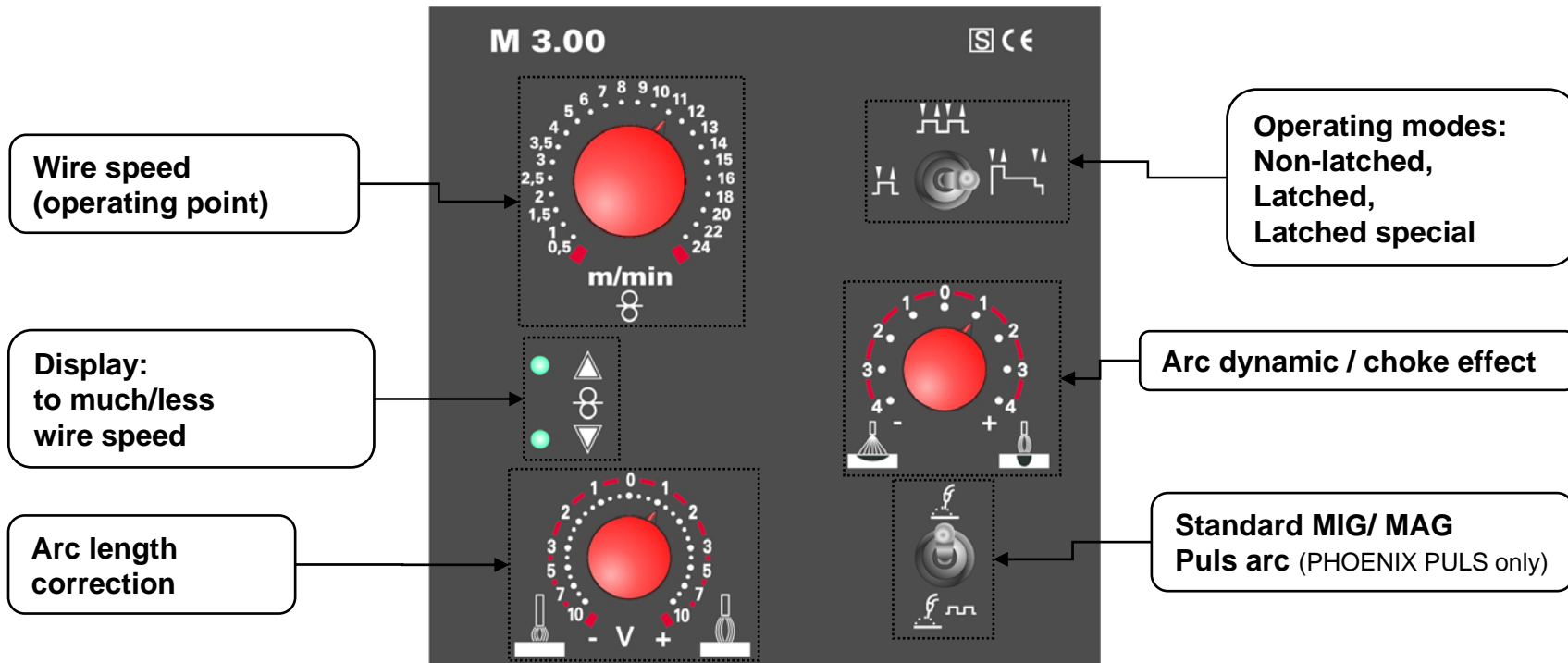


Wire feed unit control M 3.00 (PHOENIX 400 / 500)



EVOLUTION X

Wire feed unit control M 3.00 (PHOENIX 400 / 500)

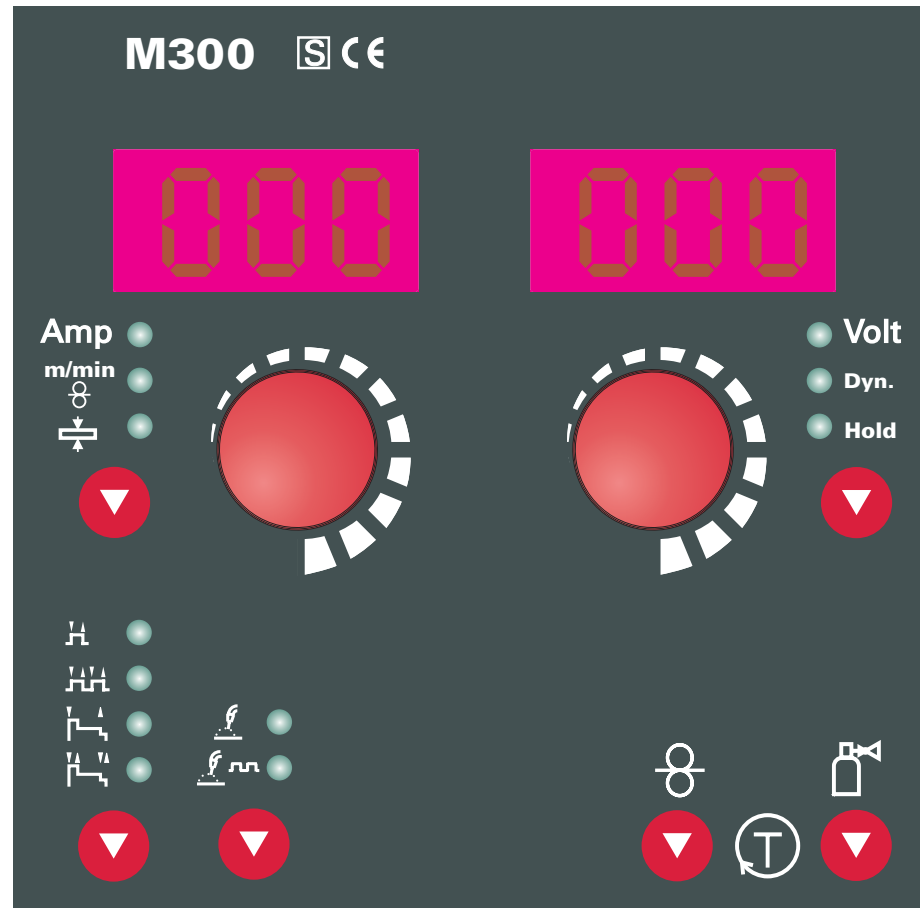


Functions (internal)

- Buttons for currentless gas test and
- Wire inching (adjustable speed)
- Changeover switch: Torch Up/Down or program operation

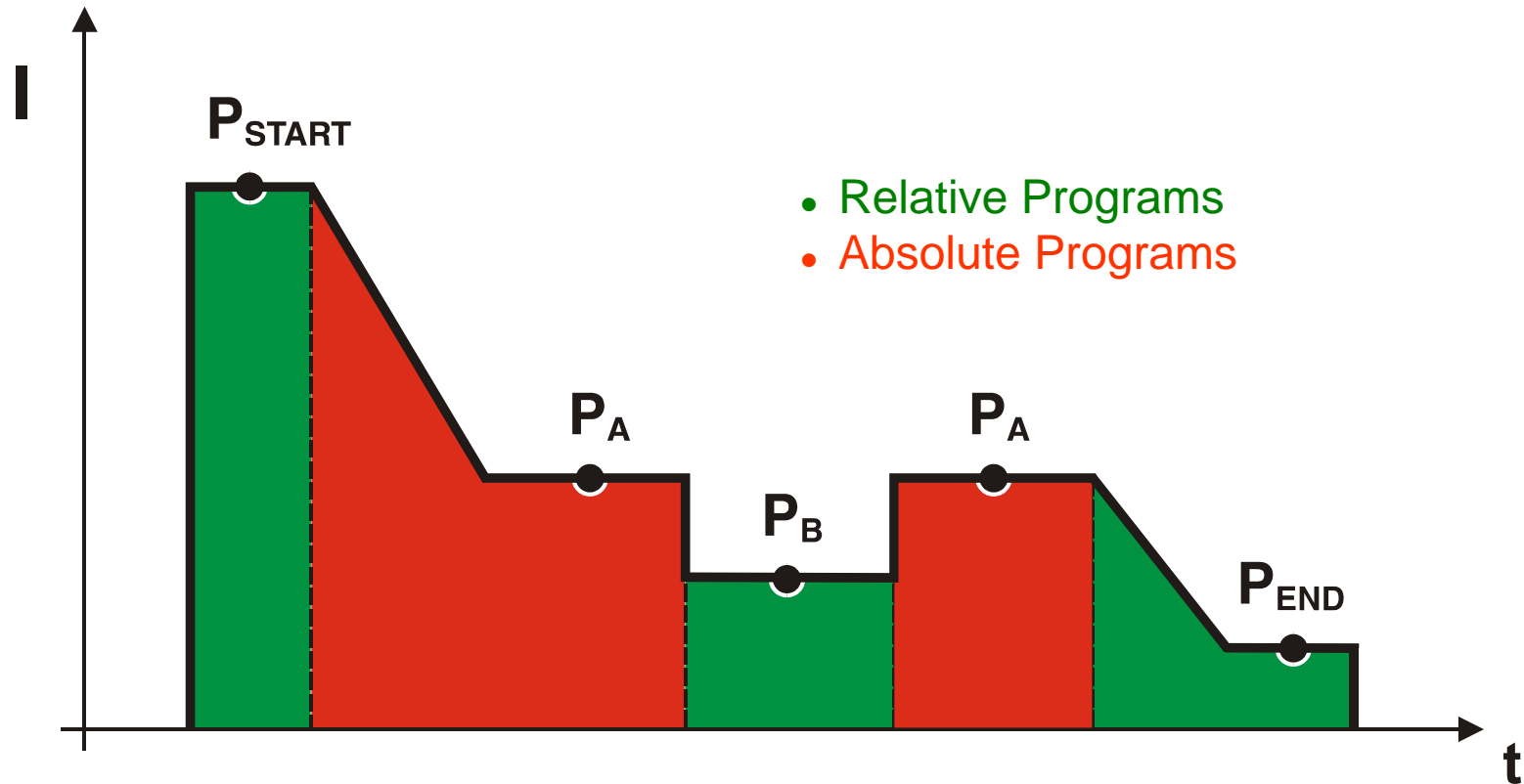
EVOLUTION X

Wire feed unit control M 3.00 NEU! (available 2003)



EVOLUTION X

Program Flow Diagram

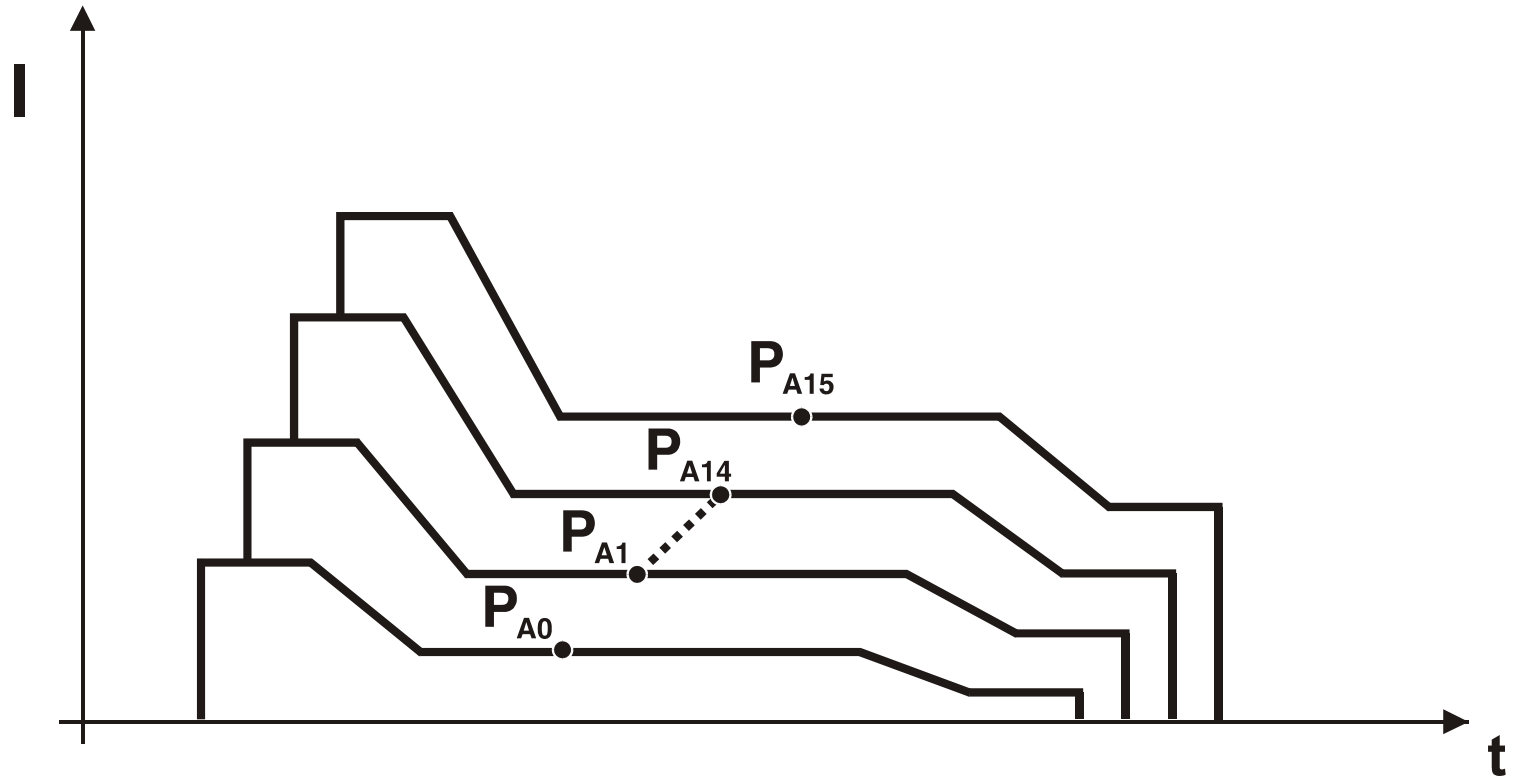


- P_{START} = Start Program (% of P_A)
- P_A = Program A (in Amps.)
- P_B = Program B (% of P_A)
- P_{END} = End Program (% of P_A)



**16 x Program A =
16 Program flows**

EVOLUTION X

Program Flow Diagram

16 x Program A (Working point) = 16 Program points

POWERCONTROL – control of welding output on the welding torch

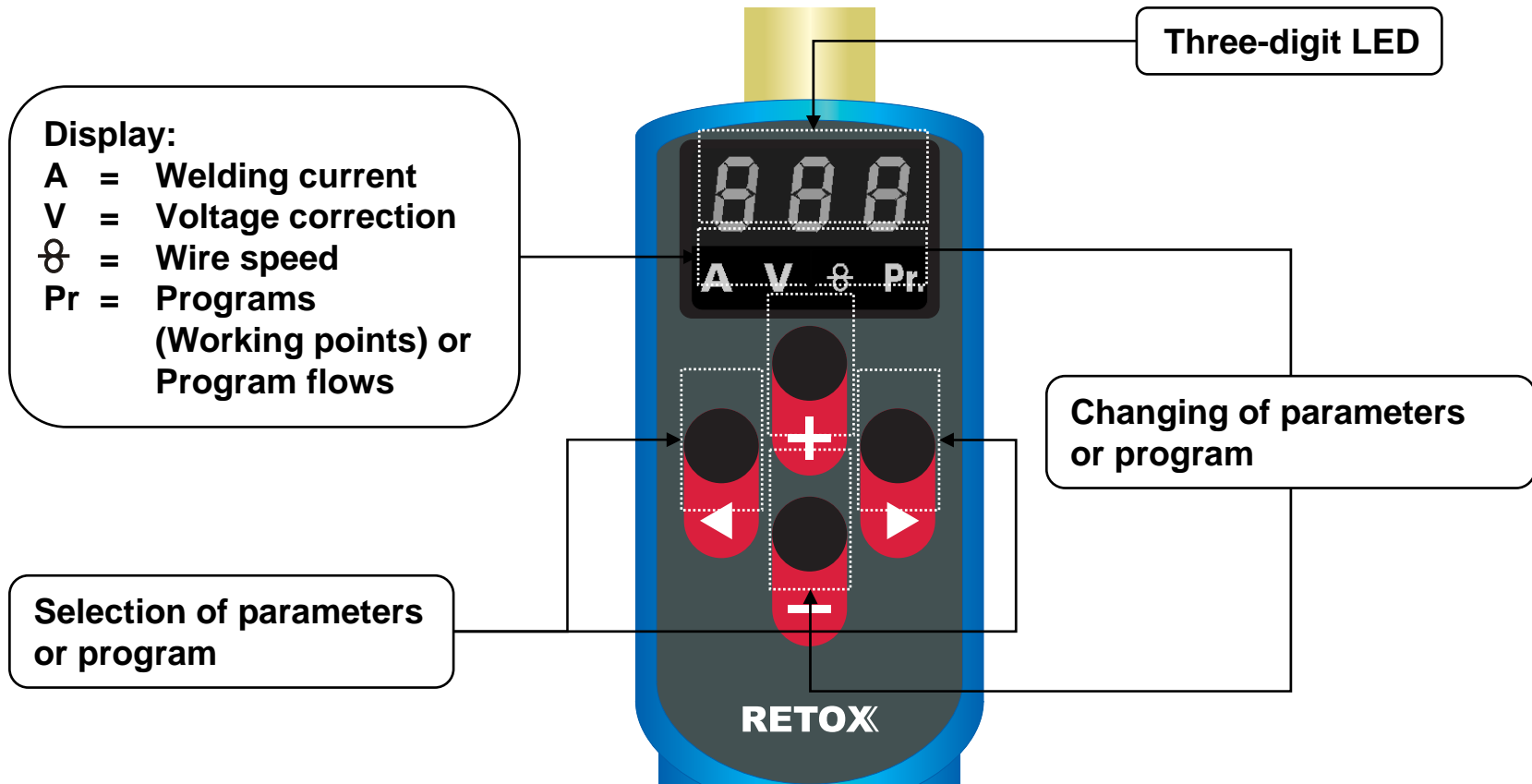
- **MIG welding torch with rocker and 7-segment display**
 - ⇒ Infinitely adjustable setting for welding output with Up/Down function
 - ⇒ Retrieval of 10 program sequences
 - ⇒ Display of welding output and welding programs

MIG welding torch „RETOX“



EVOLUTION X

MIG welding torch „RETOX“



Selection and Setting

- Welding current and voltage, wire speed, 99 programs (working points) or program flows
- Pulse or standard welding, MIG dynamics, operation mode latched / non latched, 2/4 stroke special

EVOLUTION X

PHOENIX R10 and R40 remote controls



- **PHOENIX R10**

- ⇒ Infinitely adjustable setting of operating point (one-dial operation)
- ⇒ Arc length correction
- ⇒ Robust metal casing with holding magnet

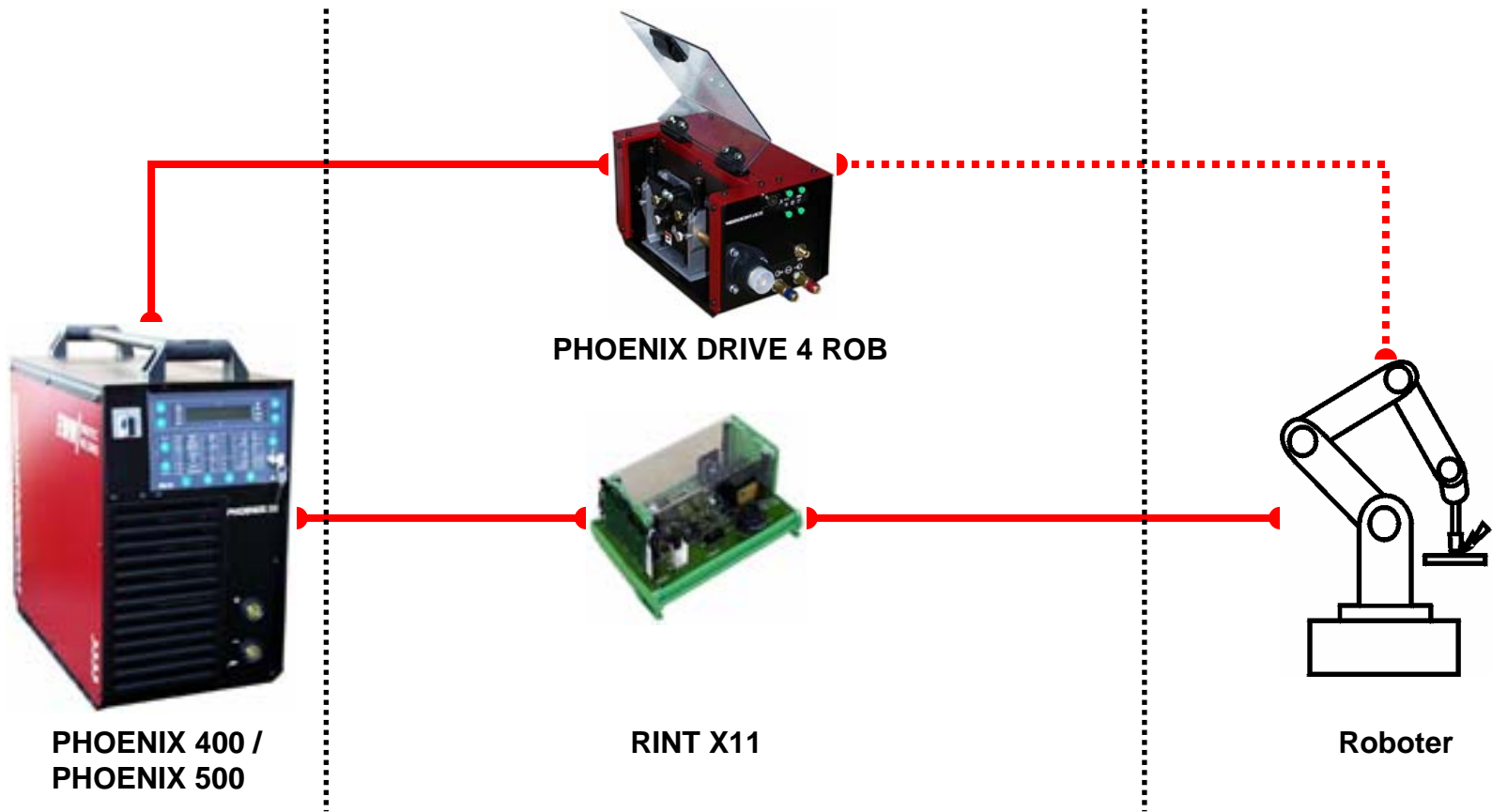


- **PHOENIX R40**

- ⇒ Retrieve, create and save 16 MIG welding programs
 - ⇒ Retrieval of 10 programs via the MIG program torch, e.g. for frequently-used applications.
 - ⇒ Retrieval of 16 external programs, e.g. for mechanised applications
- ⇒ Display of set point and current value via integrated display
- ⇒ Robust metal casing with holding magnet

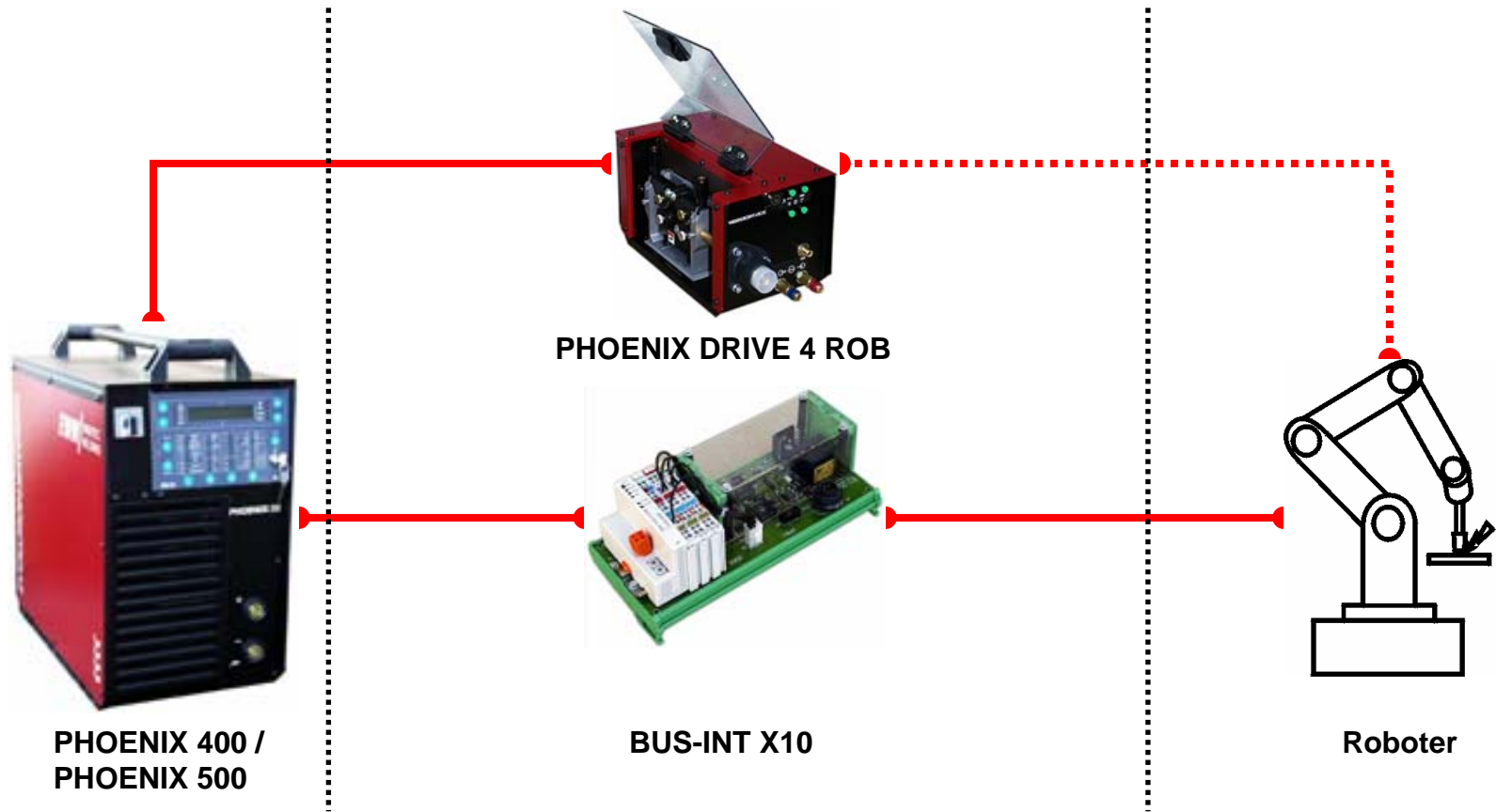
EVOLUTION X

Robot interface RINT X11



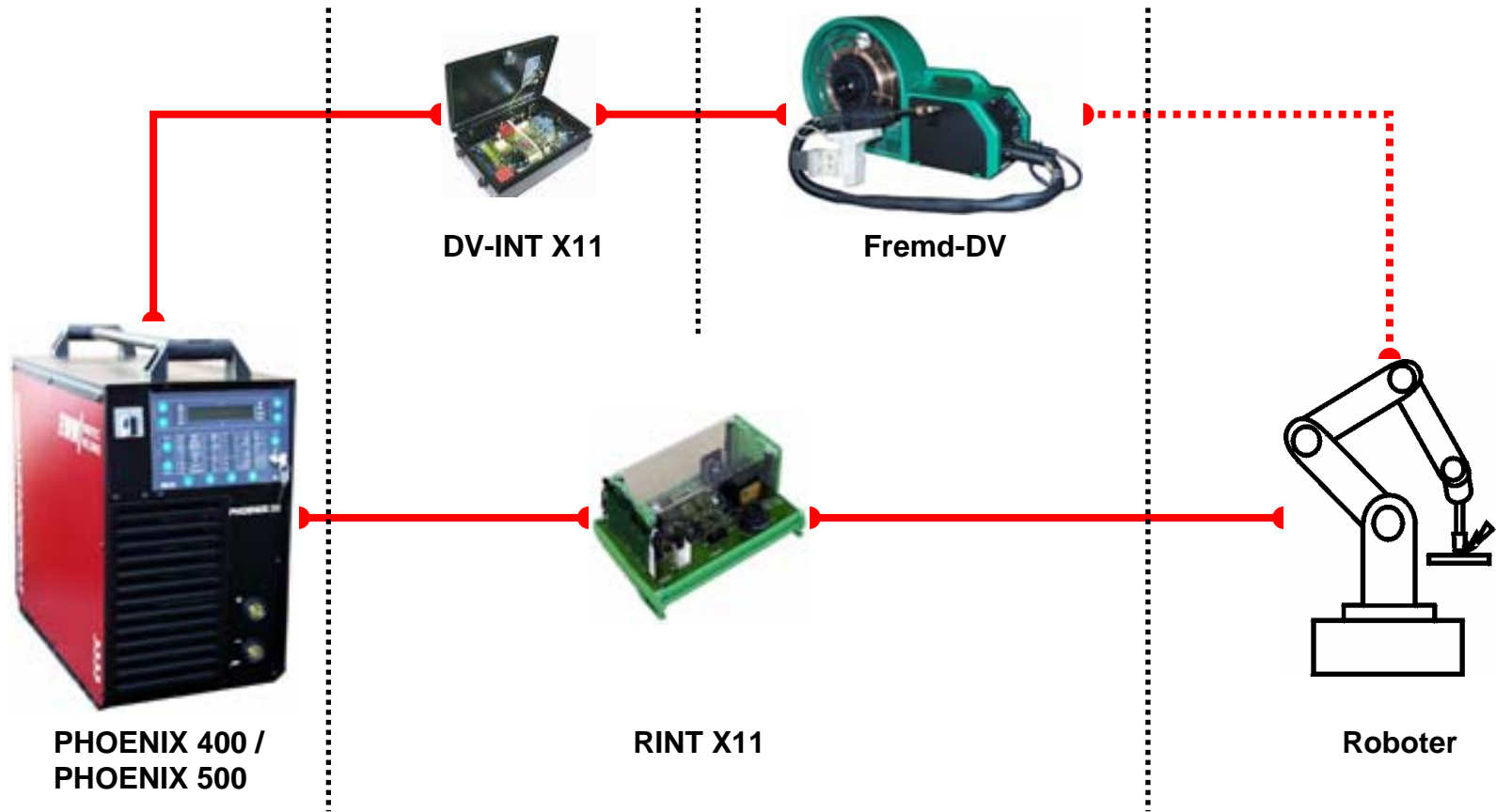
EVOLUTION X

INTERFACE for industrie bus link BUS-INT X10



EVOLUTION X

INTERFACE for linking of special wire feed units DV-INT X11



EVOLUTION X

Documentation interface PCINT X10

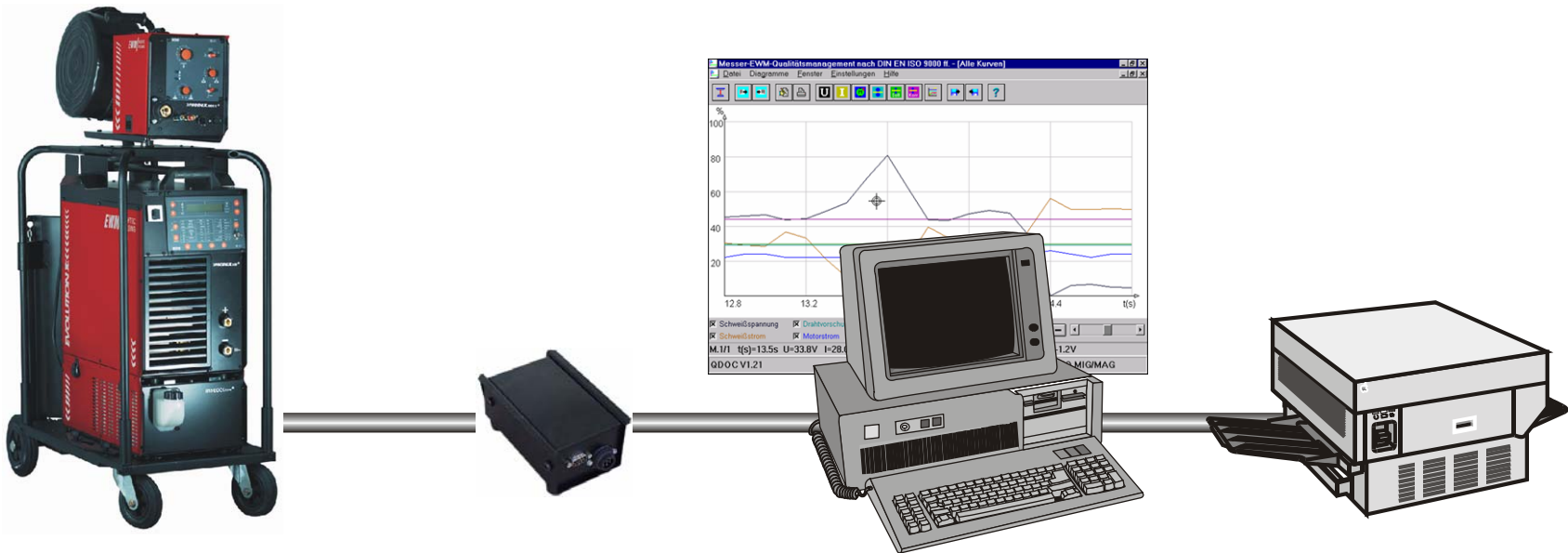
Welding parameter - Documentation

Actual values

- Welding voltage and -current, armature current wire feed motor, wire speed

Setpoint values

- Arc length correction, wire speed



PHOENIX

PC INT X10

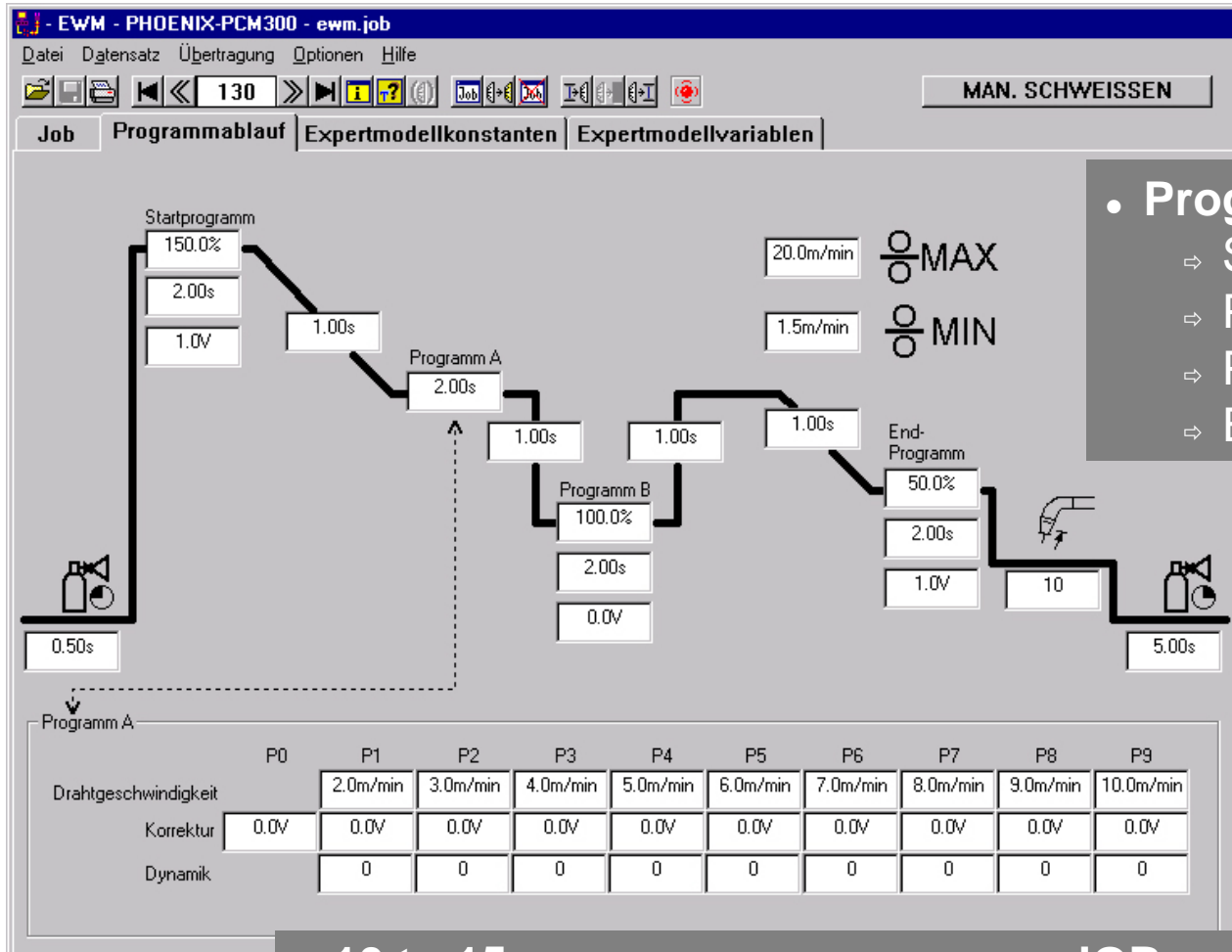
**Windows software
Q-DOC 9000**

Print

EVOLUTION X

Welding data for PHOENIX PCM300 software

EVOLUTION X



- Program flow:
 - ⇒ Start program
 - ⇒ Program A
 - ⇒ Program B
 - ⇒ End program

- 10 to 15 program sequences per JOB
- Monitoring of welding parameters

	PHOENIX 300	PHOENIX 400	PHOENIX 500
Setting range:			
Welding current / -voltage			
TIG	5A/ 10,1V - 300A/ 22,0V	5A/ 10,2V - 400A/ 26,0V	5A/ 10,1V - 500A/ 30,0V
MMA	5A/ 20,1V - 300A/ 32,0V	5A/ 20,2V - 400A/ 36,0V	5A/ 20,1V - 500A/ 40,0V
MIG/MAG	5A/ 14,2V - 300A/ 26,0V	5A/ 14,3V - 400A/ 34,0V	5A/ 14,2V - 500A/ 34,0V
Duty cycle at 40°C ambient temperature:			
30%dc	300A	-	-
35%dc	-	-	-
40%dc	-	400A	500A
60%dc	210A	360A	450A
100%dc	170A	300A	340A
Duty cycle at 20°C ambient temperature:			
30%dc		-	-
35%dc	300A	-	-
40%dc	-	-	500A
45%dc	-	400A	-
60%dc	220A	-	475A
65%dc	-	360A	-
100%dc	190A	300A	400A
Open circuit voltage	103V	92V	79V at 400V 91V at 460V
Mains voltage (tolerances)	3 x 400V (-25% to +20%) 3 x 415V (-25% to +15%)		3 x 400V (-25% to +20%) 3 x 415V (-25% to +15%) 3 x 460V (-25% to +10%)
Mains fuse (safety fuse slow blow)	3 x 16A	3 x 35A	
cosφ / efficiency rate	0,99 / 89%		
Dimensions l / w / h [mm]	605 x 335 x 520	625 x 335 x 560	
Weight	42,5Kg	55Kg	58Kg

EVOLUTION X

AREA OF APPLICATION PROGRESS/EXPERT

The welding system of the future for all applications

EVOLUTION X



Railway vehicle construction



Shipbuilding



Foodstuffs and chemicals industry



Mechanical engineering



Robot welding in the car industry



Construction site