

# APT **FORGE** PULSE

FP503W

FP403W

FP353CW

FP220C



.....  
**parweld**  
.....

# APT **FORGE** PULSE



## **MANUAL WELDING**

- MIG/MAG
- XSAW
- MMA

## **ROBOTIC WELDING**

- Robotic MIG/MAG
- Robotic TIG

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# APT **FORGE** PULSE

## Robotic Interfaces

Ethernet



EtherNet/IP



EtherCAT

## FP503W



## FP403W



## TECHNICAL SPECIFICATIONS

|                          |                                                                                                               |                                                                                                                 |
|--------------------------|---------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|
| Input Voltage            | 400 V                                                                                                         | 400 V                                                                                                           |
| Mains Voltage Tolerance  | - 10 % / + 15 %                                                                                               | - 10 % / + 15 %                                                                                                 |
| Minimum Welding Current  | 30 A                                                                                                          | 30 A                                                                                                            |
| Maximum Welding Current  | 500 A                                                                                                         | 400 A                                                                                                           |
| MIG Duty Cycle, 40°C     | 500 A 40%, 430 A 60%, 360 A 100%                                                                              | 400 A 40%, 360 A 60%, 300 A 100%                                                                                |
| TIG Duty Cycle, 40°C     | 500 A 40%, 430 A 60%, 360 A 100%                                                                              | 400 A 40%, 360 A 60%, 300 A 100%                                                                                |
| MMA Duty Cycle, 40°C     | 500 A 40%, 430 A 60%, 360 A 100%                                                                              | 400 A 40%, 360 A 60%, 300 A 100%                                                                                |
| Open – Circuit Voltage   | 63 V - 82 V                                                                                                   | 63 V - 82 V                                                                                                     |
| Factory Delivered Roller | 1.0 + 1.2 mm / Steel                                                                                          | 1.0 + 1.2 mm / Steel                                                                                            |
| Weight                   | Liquid Cooled, 107 kg                                                                                         | Liquid Cooled, 94 kg                                                                                            |
| Standard Accessories     | 5m Power Cable ( 4 x 4mm <sup>2</sup> )<br>5m Earth Clamp ( 70mm <sup>2</sup> )<br>Interconnection H.P ( 5m ) | 5m Power Cable ( 4 x 2.5mm <sup>2</sup> )<br>5m Earth Clamp ( 50mm <sup>2</sup> )<br>Interconnection H.P ( 5m ) |
| Dimensions (W, L, H)     | 532mm x 970mm x 1261mm                                                                                        | 532mm x 974mm x 1178mm                                                                                          |
| Certification            | CE                                                                                                            | CE                                                                                                              |

**Robotic  
Interfaces**

**Others**

**DeviceNet™**

**CANopen®**

**PROFI<sup>®</sup>  
BUS**

**Modbus**

## FP353CW



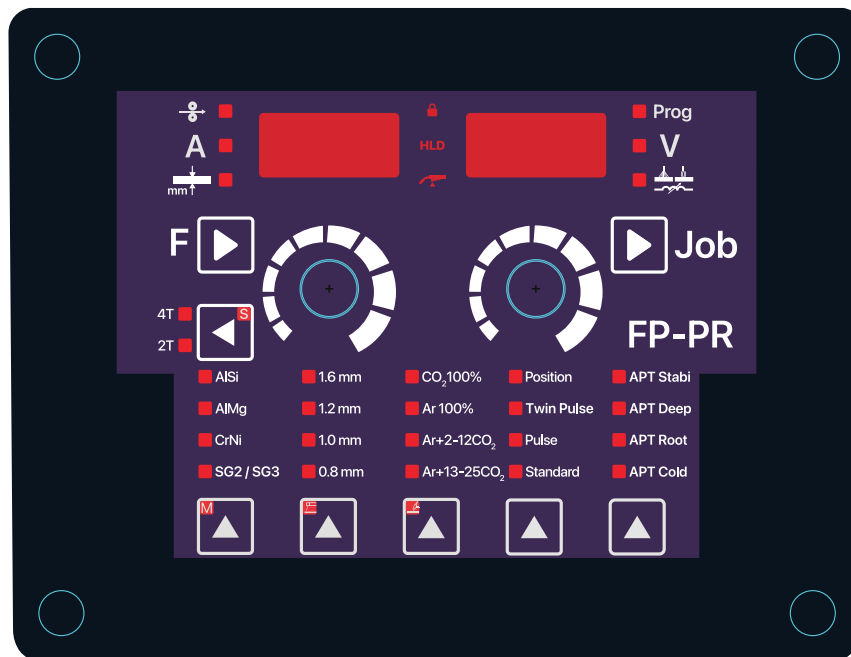
## FP220C



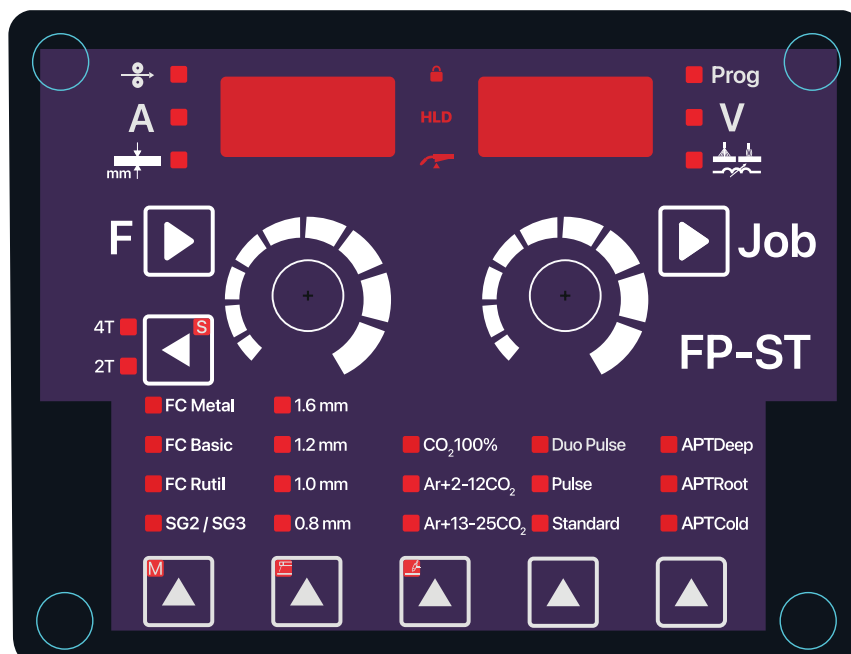
### TECHNICAL SPECIFICATIONS

|                                 |                                                                                                                           |                                                                                                                              |
|---------------------------------|---------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|
| <b>Input Voltage</b>            | <b>400 V</b>                                                                                                              | <b>230 V</b>                                                                                                                 |
| <b>Mains Voltage Tolerance</b>  | <b>- 10 % / + 15 %</b>                                                                                                    | <b>- 10 % / + 15 %</b>                                                                                                       |
| <b>Minimum Welding Current</b>  | <b>30 A</b>                                                                                                               | <b>30 A</b>                                                                                                                  |
| <b>Maximum Welding Current</b>  | <b>350 A</b>                                                                                                              | <b>220 A</b>                                                                                                                 |
| <b>MIG Duty Cycle, 40°C</b>     | <b>350 A 40%, 300 A 60%, 250 A 100%</b>                                                                                   | <b>90 A 100% 200A 13%</b>                                                                                                    |
| <b>TIG Duty Cycle, 40°C</b>     | <b>350 A 40%, 300 A 60%, 250 A 100%</b>                                                                                   | <b>90 A 100% 200A 13%</b>                                                                                                    |
| <b>MMA Duty Cycle, 40°C</b>     | <b>350 A 40%, 300 A 60%, 250 A 100%</b>                                                                                   | <b>90 A 100% 200A 13%</b>                                                                                                    |
| <b>Open – Circuit Voltage</b>   | <b>63 V - 82 V</b>                                                                                                        | <b>14 V - 60 V</b>                                                                                                           |
| <b>Factory Delivered Roller</b> | <b>1.0 + 1.2 mm / Steel</b>                                                                                               | <b>0.8 + 1.0 mm / Steel</b>                                                                                                  |
| <b>Weight</b>                   | <b>Liquid Cooled, 55 kg</b>                                                                                               | <b>Air Cooled , 21 kg</b>                                                                                                    |
| <b>Standard Accessories</b>     | <b>5m Power Cable ( 4 x 2.5mm<sup>2</sup> )</b><br><b>5m Earth Clamp ( 50mm<sup>2</sup> )</b><br><b>Gas Hose ( 1.5m )</b> | <b>5m Power Cable ( 4 x 1.5 mm<sup>2</sup> )</b><br><b>5m Earth Clamp ( 35 mm<sup>2</sup> )</b><br><b>Gas Hose ( 1.5 m )</b> |
| <b>Dimensions (W, L, H)</b>     | <b>532mm x 860mm x 974mm</b>                                                                                              | <b>234mm x 483mm x 417mm</b>                                                                                                 |
| <b>Certification</b>            | <b>CE</b>                                                                                                                 | <b>CE</b>                                                                                                                    |

## PR Panel For All Types of Metal Work (Steel, Cr, Cu & Al)



## ST Panel For Flux-Cored Wire and Steel Solutions

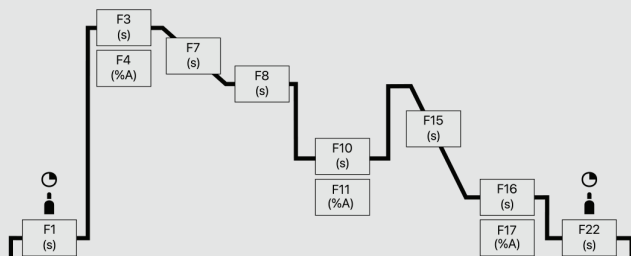




# Jobs List

## PR Panel

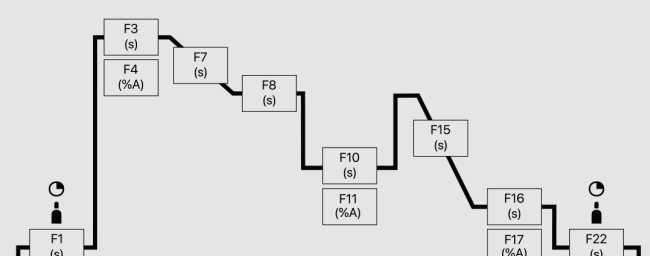
| Standard - Pulse     |                                     |                        | 0.8                    | 1.0 | 1.2 | 1.6 |     |
|----------------------|-------------------------------------|------------------------|------------------------|-----|-----|-----|-----|
| SG2 / SG3            |                                     |                        | Ar+18%CO <sub>2</sub>  | 8   | 10  | 12  | 16  |
|                      |                                     |                        | Ar+10%CO <sub>2</sub>  | 18  | 20  | 22  | 26  |
|                      |                                     |                        | CO <sub>2</sub> 100%   | 28  | 30  | 32  | 36  |
| CrNi                 | 308 / 316 / 318 /<br>19 9 / 19 12 3 | Ar+2.5%CO <sub>2</sub> | 68                     | 70  | 72  | 76  |     |
|                      |                                     |                        |                        |     |     |     |     |
| CuSi                 |                                     |                        | Ar100%                 | 178 | 180 | 182 | 186 |
| CuAl                 |                                     |                        | Ar100%                 | 188 | 190 | 192 | 196 |
| AlMg4,5 Mn           |                                     |                        | Ar100%                 | 118 | 120 | 122 | 126 |
| AlSi                 |                                     |                        | Ar100%                 | 138 | 140 | 142 | 146 |
| Flux Cored           |                                     |                        | 0.8                    | 1.0 | 1.2 | 1.6 |     |
| Steel / FC Metal     |                                     |                        | Ar+18%CO <sub>2</sub>  | 238 | 240 | 242 | 246 |
|                      |                                     |                        | Ar+18%CO <sub>2</sub>  | 248 | 250 | 252 | 256 |
| CO <sub>2</sub> 100% |                                     |                        | 260                    | 262 | 266 |     |     |
| Steel / FC Rutil     |                                     |                        | Ar+18%CO <sub>2</sub>  |     |     | 602 |     |
| CrNi / FC Metal      |                                     |                        | Ar+2.5%CO <sub>2</sub> |     |     | 272 | 276 |
| CrNi / FC Rutil      |                                     |                        | Ar+18%CO <sub>2</sub>  |     |     | 282 | 286 |
| CrNi / FC Rutil      |                                     |                        | CO <sub>2</sub> 100%   |     |     | 292 | 296 |
| Steel / FC High Str. |                                     |                        | Ar+18%CO <sub>2</sub>  |     |     | 592 |     |
| Steel / FC Rutil     |                                     |                        | Self Shielded          |     |     | 720 | 722 |
| APT Deep - Pulse     |                                     |                        | 0.8                    | 1.0 | 1.2 | 1.6 |     |
| SG2 / SG3            |                                     |                        | Ar+18%CO <sub>2</sub>  | 298 | 300 | 302 | 306 |
|                      |                                     |                        | Ar+10%CO <sub>2</sub>  | 308 | 310 | 312 | 316 |
| CrNi                 | 308 / 316 / 318 /<br>19 9 / 19 12 3 | Ar+2.5%CO <sub>2</sub> | 640                    | 642 | 646 |     |     |
|                      |                                     |                        |                        |     |     |     |     |
| AlMg4,5 Mn           |                                     |                        | Ar100%                 |     | 332 | 336 |     |
| AlSi                 |                                     |                        | Ar100%                 |     | 342 | 346 |     |
| APT Root - Pulse     |                                     |                        | 0.8                    | 1.0 | 1.2 | 1.6 |     |
| SG2 / SG3            |                                     |                        | Ar+18%CO <sub>2</sub>  |     | 360 | 362 |     |
|                      |                                     |                        | CO <sub>2</sub> 100%   |     | 370 | 372 |     |
|                      |                                     |                        | Ar+10%CO <sub>2</sub>  |     | 500 | 502 |     |
| APT Cold - Pulse     |                                     |                        | 0.8                    | 1.0 | 1.2 | 1.6 |     |
| SG2 / SG3            |                                     |                        | Ar+18%CO <sub>2</sub>  | 378 | 380 | 382 | 386 |
|                      |                                     |                        | CO <sub>2</sub> 100%   | 388 | 390 | 392 |     |
|                      |                                     |                        | Ar+10%CO <sub>2</sub>  | 510 | 512 |     |     |
| CrNi                 | 308 / 316 / 318 /<br>19 9 / 19 12 3 | Ar+2.5%CO <sub>2</sub> | 398                    | 400 | 402 |     |     |
|                      |                                     |                        |                        |     |     |     |     |
| Application          |                                     |                        |                        |     |     |     |     |
| MIG/MAG Manual       |                                     |                        | 4                      |     |     |     |     |
| TIG (Lift Arc)       |                                     |                        | 5                      |     |     |     |     |
| MMA                  |                                     |                        | 6                      |     |     |     |     |
| Gouging              |                                     |                        | 7                      |     |     |     |     |



| Function | Description                    | Min  | Max  |
|----------|--------------------------------|------|------|
| F1       | Gas pre-flow (s)               | 0    | 10   |
| F2       | Start wire speed (m/min)       | 20   | 100  |
| F3       | Start time (s)                 | 0    | 10   |
| F4       | Start current (%)              | 1    | 200  |
| F5       | Start arc correction(V)        | -9.9 | +9.9 |
| F7       | Start slope (s)                | 0    | 5    |
| F8       | Duo peak time (s)              | 0.05 | 10   |
| F10      | Duo base time (s)              | 0.05 | 10   |
| F11      | Duo base amper (%)             | 1    | 100  |
| F12      | Duo base arc correction (v)    | -9.9 | +9.9 |
| F15      | End down slope (s)             | 0    | 10   |
| F16      | End time (s)                   | 0    | 10   |
| F17      | End current (%)                | 1    | 200  |
| F18      | End arc correction (V)         | -9.9 | +9.9 |
| F20      | End burn back (-)              | 0    | 15   |
| F21      | End wire cut mode (-)          | 0    | 2    |
| F22      | Gas post-flow (s)              | 0    | 10   |
| F23      | Smart trigger (-)              | 0    | 10   |
| F24      | Penetration stabilizer (m/min) | 0    | 10   |

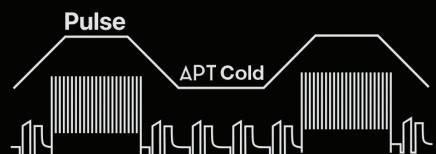
## ST Panel

| Standard - Pulse     |                       | 0.8 | 1.0 | 1.2 | 1.6 |
|----------------------|-----------------------|-----|-----|-----|-----|
| SG2 / SG3            | Ar+18%CO <sub>2</sub> | 8   | 10  | 12  | 16  |
|                      | Ar+10%CO <sub>2</sub> | 18  | 20  | 22  | 26  |
|                      | CO <sub>2</sub> 100%  | 28  | 30  | 32  | 36  |
| Flux Cored           |                       | 0.8 | 1.0 | 1.2 | 1.6 |
| Steel / FC Metal     | Ar+18%CO <sub>2</sub> | 238 | 240 | 242 | 246 |
|                      | CO <sub>2</sub> 100%  |     |     | 262 | 266 |
| Steel / FC Rutil     | Ar+18%CO <sub>2</sub> |     |     | 602 |     |
|                      | Ar+18%CO <sub>2</sub> |     |     | 592 |     |
| Steel / FC High Str. | Self Shielded         |     | 720 | 722 |     |
|                      |                       |     |     |     |     |
| APT Deep - Pulse     |                       | 0.8 | 1.0 | 1.2 | 1.6 |
| SG2 / SG3            | Ar+18%CO <sub>2</sub> | 298 | 300 | 302 | 306 |
|                      | Ar+10%CO <sub>2</sub> | 308 | 310 | 312 | 316 |
| APT Root - Pulse     |                       | 0.8 | 1.0 | 1.2 | 1.6 |
| SG2 / SG3            | Ar+18%CO <sub>2</sub> |     | 360 | 362 |     |
|                      | CO <sub>2</sub> 100%  |     | 370 | 372 |     |
|                      | Ar+10%CO <sub>2</sub> |     | 500 | 502 |     |
| APT Cold - Pulse     |                       | 0.8 | 1.0 | 1.2 | 1.6 |
| SG2 / SG3            | Ar+18%CO <sub>2</sub> | 378 | 380 | 382 | 386 |
|                      | CO <sub>2</sub> 100%  | 388 | 390 | 392 |     |
|                      | Ar+10%CO <sub>2</sub> | 510 | 512 |     |     |
| Application          |                       |     |     |     |     |
| MIG/MAG Manual       |                       | 4   |     |     |     |
| TIG (Lift Arc)       |                       | 5   |     |     |     |
| MMA                  |                       | 6   |     |     |     |
| Gouging              |                       | 7   |     |     |     |



| Function | Description                 | Min  | Max  |
|----------|-----------------------------|------|------|
| F1       | Gas pre-flow (s)            | 0    | 10   |
| F2       | Start wire speed (m/min)    | 20   | 100  |
| F3       | Start time (s)              | 0    | 10   |
| F4       | Start current (%)           | 1    | 200  |
| F5       | Start arc correction(V)     | -9.9 | +9.9 |
| F7       | Start slope (s)             | 0    | 5    |
| F8       | Duo peak time (s)           | 0.05 | 10   |
| F10      | Duo base time (s)           | 0.05 | 10   |
| F11      | Duo base amper (%)          | 1    | 100  |
| F12      | Duo base arc correction (v) | -9.9 | +9.9 |
| F15      | End down slope (s)          | 0    | 10   |
| F16      | End time (s)                | 0    | 10   |
| F17      | End current (%)             | 1    | 200  |
| F18      | End arc correction (V)      | -9.9 | +9.9 |
| F20      | End burn back (-)           | 0    | 15   |
| F21      | End wire cut mode (-)       | 0    | 2    |
| F22      | Gas post-flow (s)           | 0    | 10   |
| F23      | Smart trigger (-)           | 0    | 10   |

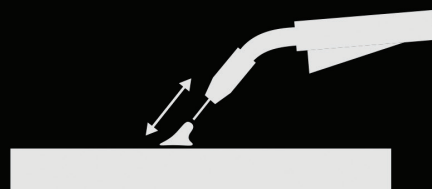
## OPTIMISED FOR PERFORMANCE



**Position**



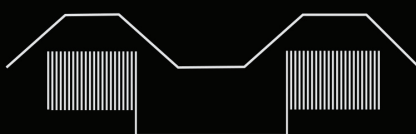
**4x4 Roll  
Wire Drive**



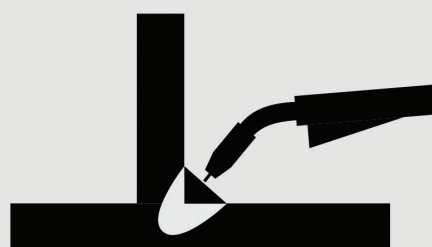
**APT Stabil**



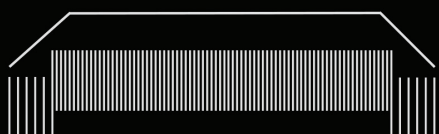
**Duo Pulse**



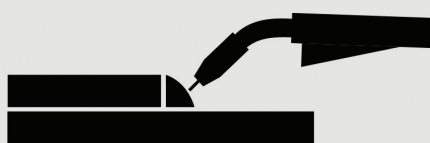
**Twin**



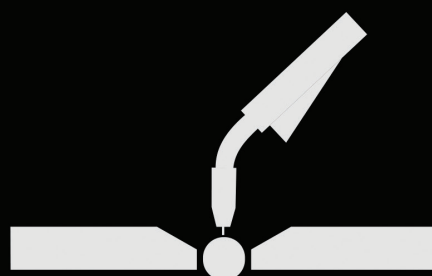
**APT Deep**



**Pulse**



**APT Cold**



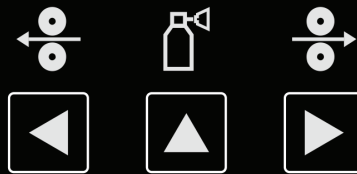
**APT Root**



# ADVANCED POWER TECHNOLOGY



25.000 PPS  
Wire Speed Control  
Perfect Feedibility



Wire Push  
Pull-Back  
Gas Testing



Spool Cover  
With Wire  
View

99

Program  
Memory



Intelligent  
Cooling

RL

Torch and Cable  
Calibration



Hose Pack  
Support



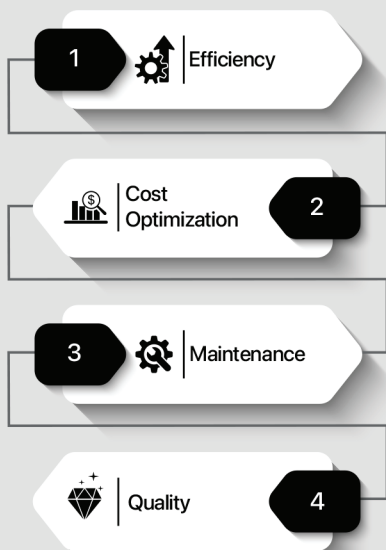
Smart Torch



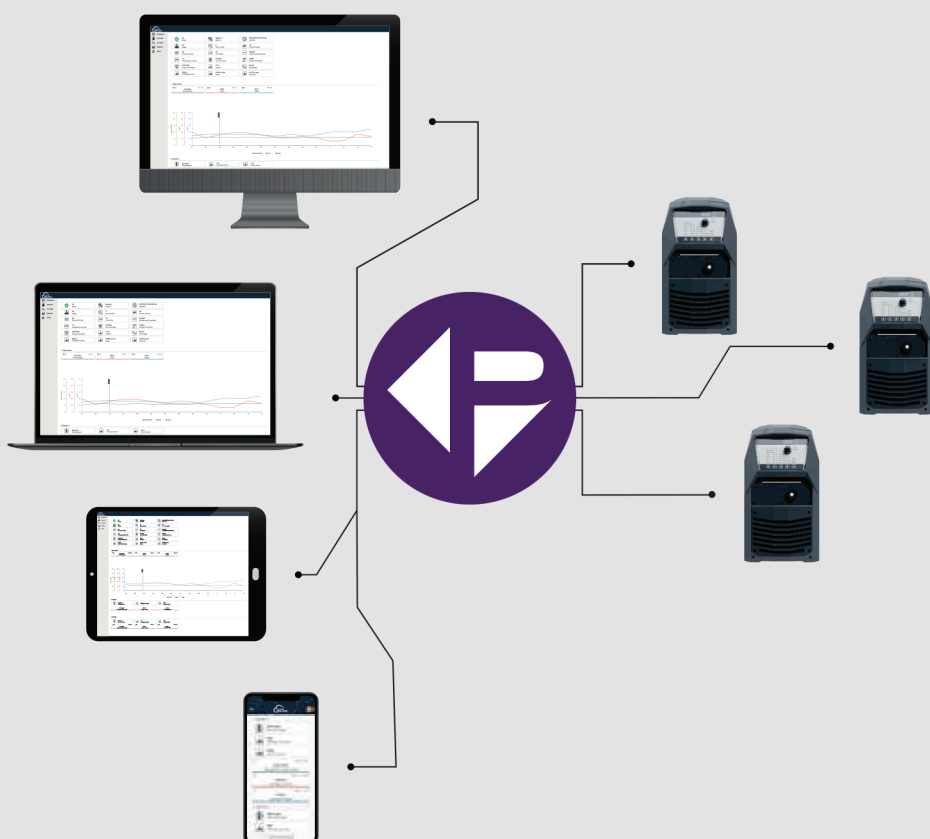
Military  
Connector

# Notes List

# Notes List



Ethernet  
USB Type-C

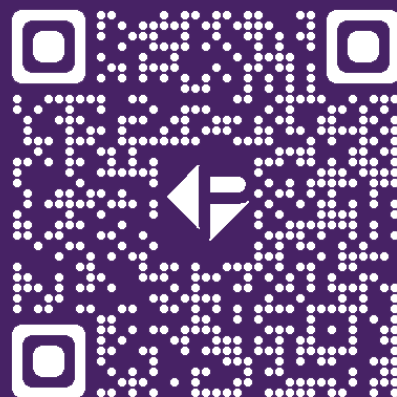


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