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ELECTRONIC POWER SYSTEM FOR THE DYNAMIC CORROSION CONTROL



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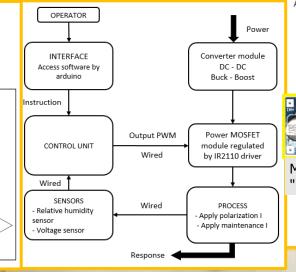
Corrosion is currently a worldwide source of economic, material, environmental damage and in the worst case, even human loss due to corrosion in infrastructure. To combat it there are a variety of techniques and treatments, but even applying them in their strictest form, sooner or later, the phenomenon cannot be avoided. Cathodic protection is a technique used to control the corrosion of a metal surface by making it the cathode of an electrochemical cell. Impressed current cathodic protection systems consist of anodes that are connected to a power source that provides a perpetual source of electrical flow. This method can often provide much longer protection than a sacrificial anode, as the anode is supplied by an unlimited power source.

TEST RESULTS						
SPECIMENS	SURFACE (m²)	INITIAL WEIGHT (g)	TEST TIME (h)	FINAL WEIGHT (g)	Δ MASS (g)	CORROSION RATE (g/ m² · año)
1	0,04	221,97	30,00	221,19	0,78	5.694,00
2	0,04	224,68	30,00	223,84	0,84	6.132,00

Battery TCBWORTH 2.2 Ah Module BMS 4S-30A PRO Module WX - DC2412 RF3205 Connection diagram of the prototype IRF3205

Algorithm of the dynamic control system START - Declaration of entries and exits - configuration T = 2s Establishment of polarization 1 T = 2s Sampling of sensors - Relative humidity > 70% - Impressed | C. Maintenance | NO T = T + 1 hour

Block diagram of the automated system





220 Vin+ Vout

BATERIA



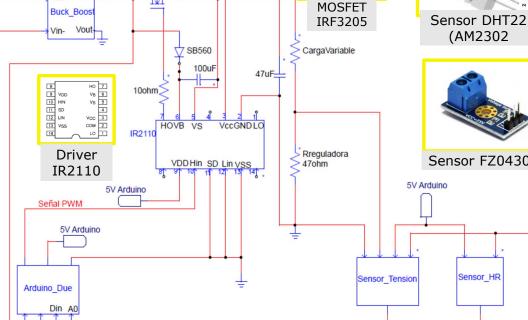


Vout+ Vout-

BUCK

Vin+ Vin-

Module Buck -Boost ZK-SJVA-4X



Señal analógica con valor de tensión en función a la corriente de mantenimiento o polarización

Señal digital con valor de humedad relativa en el ambiente captada por el sensor