JOB DESCRIPTION

Advanced Robotics Solutions: HW Design : Control System Engineer

<u>**Summary**</u>

The HW Design Control System Engineer will be involved in the development and validation of electronic control systems for industrial robots and automation products.
The main responsibilities are to lead the design of the solution and integration for the Brushless Motors Inverter together with Motor feedback (Encoder / Resolver). This Engineer will also be part of the multi functional team that designs the solution for the Brushless Motor and Brake for the Robot.
The Control System Engineer will work in the dynamic HW Design team, within the cooperative and engaging environment of the Advanced Robotics Solutions organization, together with other teams as Robot Controller Software and Mechanical Engineering.
Actively supports Procurements, Internal Manufacturing and After Sales.

<u>**Duties and Responsibilities**</u>
(these are the position's essential duties and is not an all-inclusive list)

Main areas of responsibilities are:

- Study and comparison of different drive/motor performances
- Power consumption, efficiency, heat dissipation calculations for electrical drives
- Integration of servo drives inside robot control systems and AGVs. Contribution to system HW & SW architecture design
- Parametrization, installation, debugging of drives for AC brushless servo motors together with Control Loops Engineer and Drive manufacturer partner(s).
- Management of Drive manufacturer technical relationship
- Configuration, programming debugging of digital encoders and relevant interfaces (Heidenhain EnDat 2.2 and 3.x; Sick Hiperface DSL, others)
- Management of Encoder manufacturer technical relationship
- Development of technical specifications documentation for electric/electronic devices
- Management of bench tests for different electronic devices (power supplies, servo drives, 24V I/O)
- Design, implementation, and execution of servo motor performance testing along with development of relevant technical reports.
- Use of ERP and PLM tools for technical drawings and documentation management
- Prototyping, Installation, and laboratory (internal and external) validation for new products and designed components.
- Support to the Comau manufacturing team for troubleshooting on Drives and Motors components and design improvements.

Knowledge & Skills

- Electronic and electrical background (power components)
- Servo drive technology with experience with major OEMs products (B&R, Siemens, Lenze, Keba, Rockwell, Baumuller, Kollmorgen)
- Brushless servo motors technology knowledge
- Position sensors technology knowledge (encoder, resolver, …)
- Knowledge of functional safe features and guidelines for drives and robots
- Development of electrical drawings using CAD systems (eg. SPAC, Eplan)
- Experience on industrial automation field and fieldbus communication technology
- Knowledge of EMC/EMI concepts, guidelines and relevant norms
- Knowledge of CE Machine Directive (L. 42/2006), EN60204 and UL norms and guidelines
- Basic knowledge of ERP and PLM systems (eg. SAP, Enovia)
- Basic knowledge of autonomous guided vehicles (AGV) and relevant technology
- Familiarity with common laboratory instruments like oscilloscope, power meter etc.

Behavioral Competencies

- Dynamic, innovative, and cross functional approach to design
- Open mind to learning, sharing and comparison of ideas
- Autonomy and attitude of leading projects to the complete robotics application solution
- Good interpersonal attitude in relationship with supplier and customer
- Self-motivated and proactive approach to solution development (design)

Qualifications

- Education:
  - High school technical Mechatronic / Electronic diploma (required)
  - Engineering degree in Mechatronics / Electronic (preferred)

- Previous experiences
  - Experience in design of industrial automation electronics
  - Knowledge of Industrial Robotics hardware architecture

- Languages
  - Italian
  - English (fluent)