

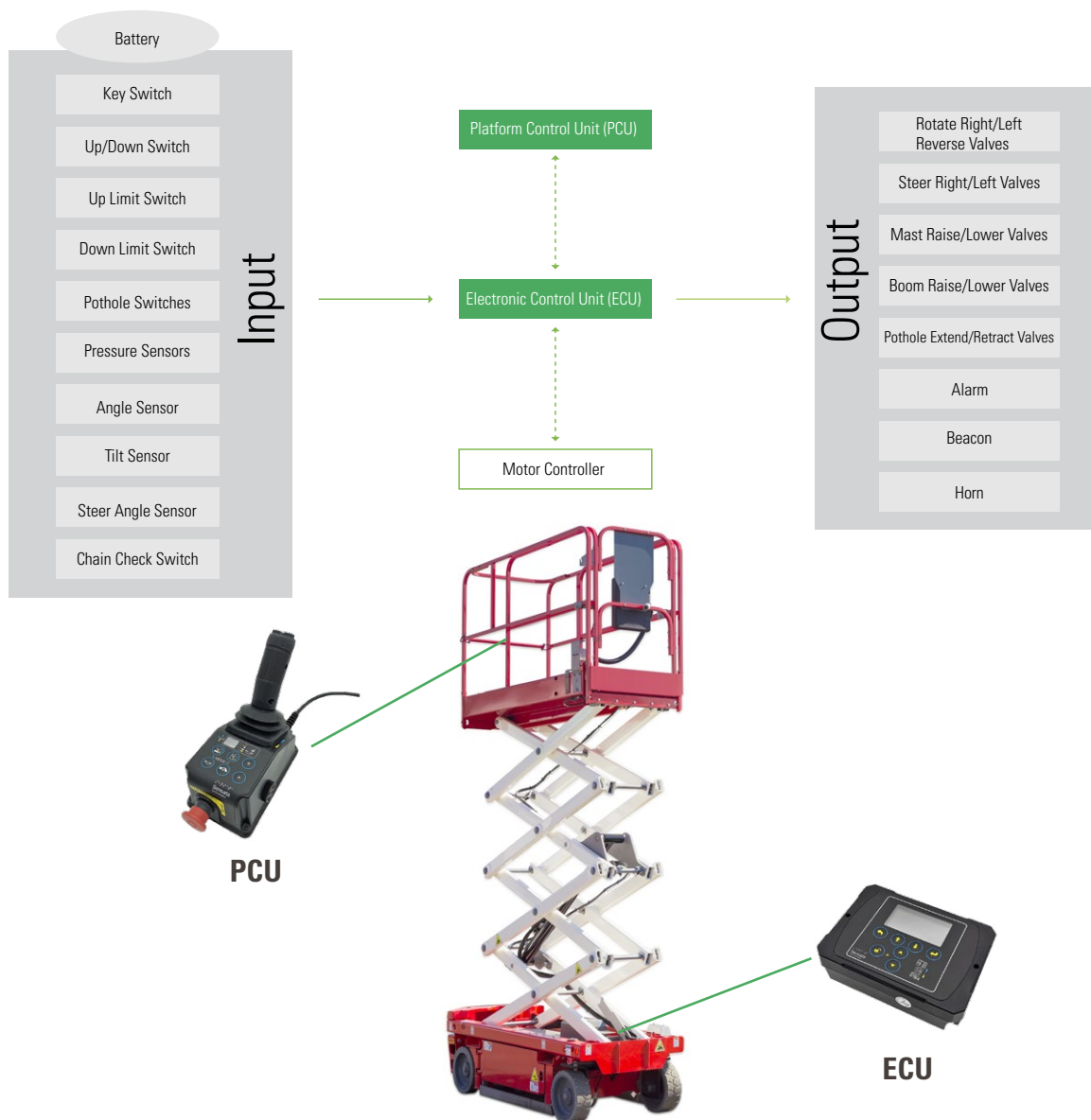


## PRODUCT HIGHLIGHT

### CODESYS FRAMEWORK DELIVERS FLEXIBILITY TO MEWP OEMS FOR FUTURE-PROOF DESIGNS

With fast-changing requirements and continued disruption, MEWP OEMs need flexibility in their controls to meet the needs of their customers – both in new equipment development and the ability to meet custom end-user requirements.

For that reason, Sensata has developed systems where we have integrated the CoDeSys programming framework into our control system – enabling manufacturers to create their own customized functionality.



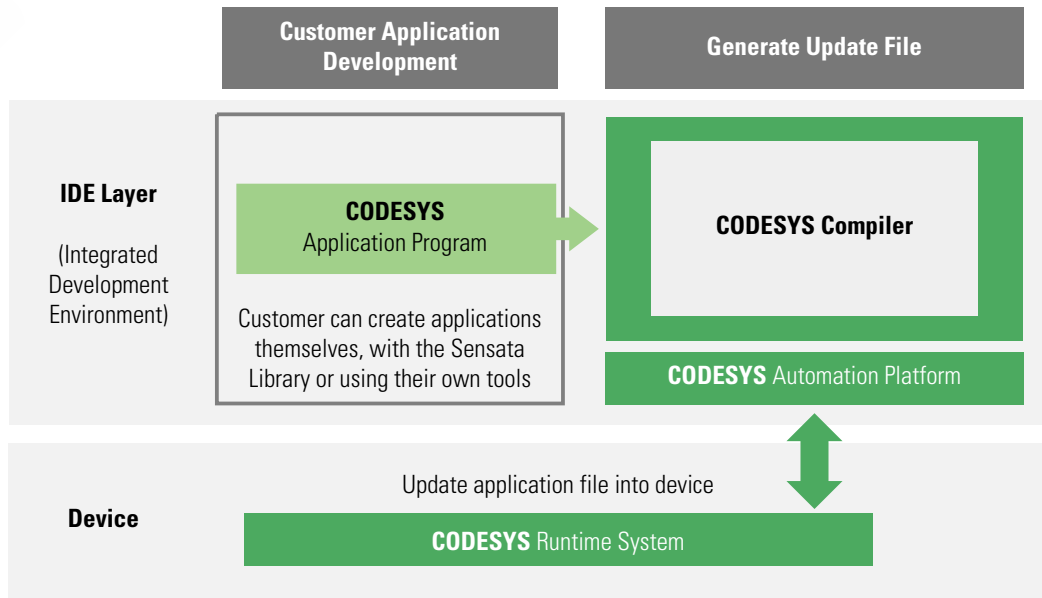
The CoDeSys board and framework is integrated directly into the electronic control unit, allowing it to receive information from all of the integrated operator controls while simultaneously communicating with the platform control unit and motor controller. This design allows the customer to create their own programming as needed for customized needs.

Sensata is able to provide the core application software to customers, who can add new features on top, using existing modules or by adding entirely new modules.

These modules generally include three parts:

1. Operation – Includes modules for the HMI, operation model switch, speed model switch, etc.
2. Control – Includes modules for motion, lift up/down, steering, outrigger, safety, etc.
3. Action – Includes modules of display, alarm, valve action, etc.

## SENSATA ECU/CODESYS PROGRAMMING STACK



Working alongside the MEWP components, the various modules allow OEMs to deliver customized functionality to the application layer and the final user interface.

## SPECIFICATIONS

Software Specs	
Operating System	CoDeSys RTS v3.5 Lite distributed file system
Task Cycle	<= 1ms, 2 task max
Display Library	emWin GUI Menu framework
Comm. Library	J1939 protocol stack CANOpen protocol stack
Diagnosis Library	Configuration interface Diagnosis interface
Scissor Lift Library	PCU communication module Load sensing module Speed regulation module Outrigger leveling module

Hardware Specs	
MCU	ARM Cotex-M4 (LPC54608)
System Clock	180MHz
RAM	SDRAM 16M
ROM	Nor-Flash 8M
Comm. Port	UART x 5, CAN x 2, Ethernet x 1, USB x 2, SPI x 1, IIC x 1
I/O	AI x 4, DI x 8, PI x 3, DO x 8, PWM x 6
UI	Dot matrix LCD (192x96)
Power	3.3V/0.1A

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