1. Product Introduction

1.1. C300 Controller Overview

Honeywell's C300 Controller provides powerful and robust control for the distributed control system (DCS). The C300 is a node in operating Honeywell's field-proven deterministic Control Execution Environment (CEE) core software. The CEE software provides a superior control execution and scheduling environment. Control strategies for each controller node are configured and loaded through a common Control Builder, an easy and intuitive engineering tool.

In addition to a standard and robust library of pre-built function blocks and algorithms, the C300 Controller also supports Custom Algorithm Blocks (CABs). Custom Algorithm Blocks are similar in purpose and structure to the standard function blocks that are distributed with Control Builder. However, CABs have user-defined algorithms and data structures, allowing custom tailored strategies to be developed to specific requirements.

The C300 controller shares its hardware design with the Series 8 I/O, offering an innovative design that reduces footprint and installation and maintenance costs. The C300 controller module is mounted on the C300 Input Output Termination Assembly (IOTA). The C300 IOTA contains only passive devices such as FTE address switches. Figure 1 below depicts the IOTA components.

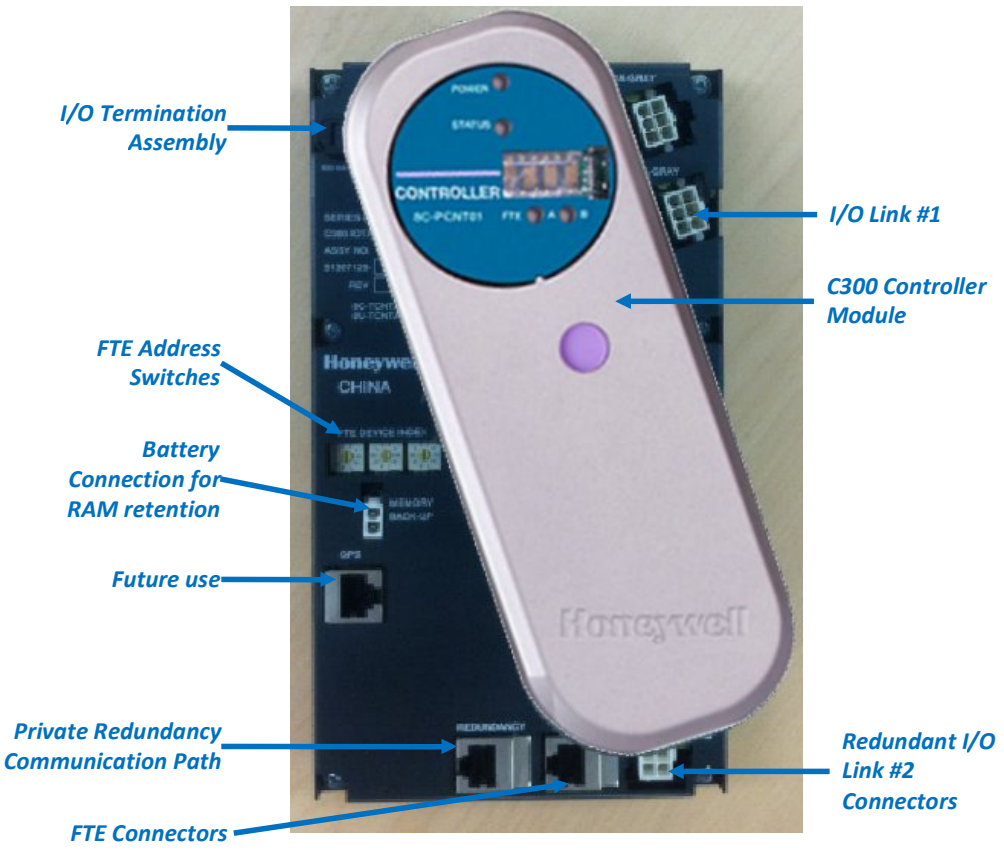


Figure 1 - C300 Controller

The Model Numbers of C300 controller are shown as below:

Model Number	Description
8C-PCNT02	Series 8 C300 Controller, coated
8U-PCNT02	Series 8 C300 Controller, uncoated
8C-TCNTA1	Series 8 C300 Controller I/O Termination Assembly(IOTA),coated
8U-TCNTA1	Series 8 C300 Controller I/O Termination Assembly(IOTA),uncoated
51305980-836	Cable, Redundant C300 Controller
51454475-100	Series 8 RAM Charger Module (C300 Memory Backup)
51202330-300	Cable, Battery RAM Charger, 30 in
51202330-200	Cable, Battery RAM Charger, 84 in
Redundancy is implemented with two modules/IOTAs and a redundancy cable (51305980-836). C300 Memory Backup is optional.	

2. Specifications

2.1. C300 Controller Specifications

2.1.1. C300 Hardware

Specification		Limit
Processor		PowerPC 8270
Power requirement		24 VDC (provided through cables by the Series 8 power system)
Module current rating		320mA
IOTA Dimension		220 mm (9 “) height, 120 mm (4,75 “) width
Module Removal and Insertion Under Power		Supported
Supported I/O Types		Series 8
Supported I/O Links		2 I/O Links, each I/O Link configurable for Series 8.
Maximum Number of IO Modules per Controller		80 I/O Units (Redundant or Non-Redundant IOMs)
Maximum Number of IO Modules on each I/O link		40 I/O Units (Redundant or Non-Redundant IOMs)
Temperature	Operating Temperature	0 to 60 ℃
	Storage temperature	-40 to 85 ℃
Relative Humidity		5 to 95 % (non condensing)
Harsh Environment (ANSI/ISA- S71.04-1985 corrosion standard)		8C- model number designation support the harsh environment or G3 level
Control Capacity		
Execution Units		5500 Execution Units (single or redundant)
Tagged Objects		4095 objects
Memory Units		16000 Memory Units
Execution Period		50 msec – 2000 msec (adjustable per control strategy)
RAM Retention		50 hour through optional rechargeable battery pack (Optional)

Controller Communication	
Series 8 C300	Native peer to peer with other Series 8 C300s
Supervisory Control Network	Fault Tolerant Ethernet
Third party devices	Modbus Master
Agency certifications	CE
	FM APPROVED C US Class I, Division 2, Group A, B, C, D; T4 Class I, Zone 2 AEx/ Ex nA II C T4
	CSA Class I, Division 2, Group A, B, C, D; T4 Class I, Zone 2, Ex nA II C T4

2.1.2. C300 Supported Function Blocks

Function Block
General Purpose (Utility)
Alarm Window
Annpanel
Dig Acq
EXECTIMER
First Out
Flag
Flag Array
Operator Message
Numeric
Numeric Array
Push
Text Array
Timer
Type Convert
PV Algorithms (Auxiliary)
PV Calculator
Summer
Counter
Dead Time
Enhanced PV Calculator
Enhanced General Linearization
Flow Compensation
General Linearlization
Lead / Lag
Rate of Change
Signal Selector
Totalizer
PV Handling
Data Acquisition
Auto Manual
Regulatory Control
Regulatory Calculator
Enhanced Regulatory Calculator
Fan Out (1 input / up to 8 outputs)
Override Selector (4 inputs)
PID (Proportional, Integral, Derivative)
PID with External Reset
PID with Feed Forward

Function Block
Profit Loop
Positional Proportional
Pulse Count
Pulse Length
Ramp / Soak
Ratio Bias
Ratio Control
Remote Cascade Support
Switch (8 input single pole)
Device Control
Device Control (multi input, multi output, multi state)
Custom Block Types
Custom Data Block
Custom Algorithm Block
Math
Absolute Value
Addition
Divide
Exponent
LN
LOG
Modulo
Multiply
Negate
Power
Rolling Average
Round
Square Root
Subtract
Truncate
Discrete Logic
2oo3 (2 out of 3 voting)
AND
CHECKBAD
CHECKBOOL
CHGEXEC
CONTACTMON
DELAY
EQ (Compare Equal)
FTRIG (Falling Edge Trigger)

Function Block
GE (Compare Greater than or Equal)
GT (Compare Greater Than)
LE (Compare Less than or Equal)
LIMIT
LT
MAX
MAXPULSE
MIN
MINPULSE
MUX
MUXREAL
MVOTE
NAND
NE
nOON
NOR
NOT
OFFDELAY
ONDELAY
OR
PULSE
QOR
ROL
ROR
RS
RTRIG
SEL
SELREAL
SHL
SHR
SR
STARTSIGNAL
TRIG
WATCHDOG
XOR
Power Related
GRPCAPRBK
HTMOTOR
LEVELCOMP
LTMOTOR
MAINIBV

Function Block
SOLENOID
VALVEDAMPER
Sequential Control Functions
Step
Transition
Synchronize
Handler
Phase
Container Block Types
Control Module
Sequential Control Module
Recipe Control Module
Unit Control Module
IO Related
Series 8 I/O
Interface Block Types
PCDI
Profibus Gateway Module