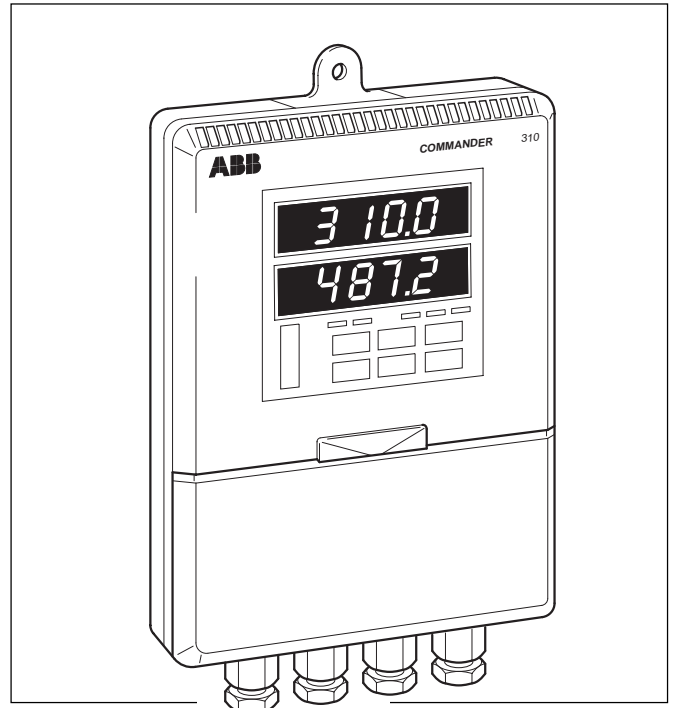


*Specification DataFile*

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- **IP66/NEMA 4X wall/pipe-mount housing**
  - no need for an instrument panel
- **Single output, Heat/Cool or Motorized Valve control**
  - one controller for every PID control application
- **9 program, 30 segment Ramp/Soak**
  - comprehensive set point profiling capabilities
- **Analog, relay and logic outputs as standard**
  - extensive control output requirements built-in
- **Universal process input with 0.1% accuracy**
  - direct connection of any process signal, simple installation without recalibration
- **RS485 MODBUS serial communications**
  - SCADA, PLC and open systems integration



*COMMANDER 310 – gives you  
the control that you need  
wherever you need it*

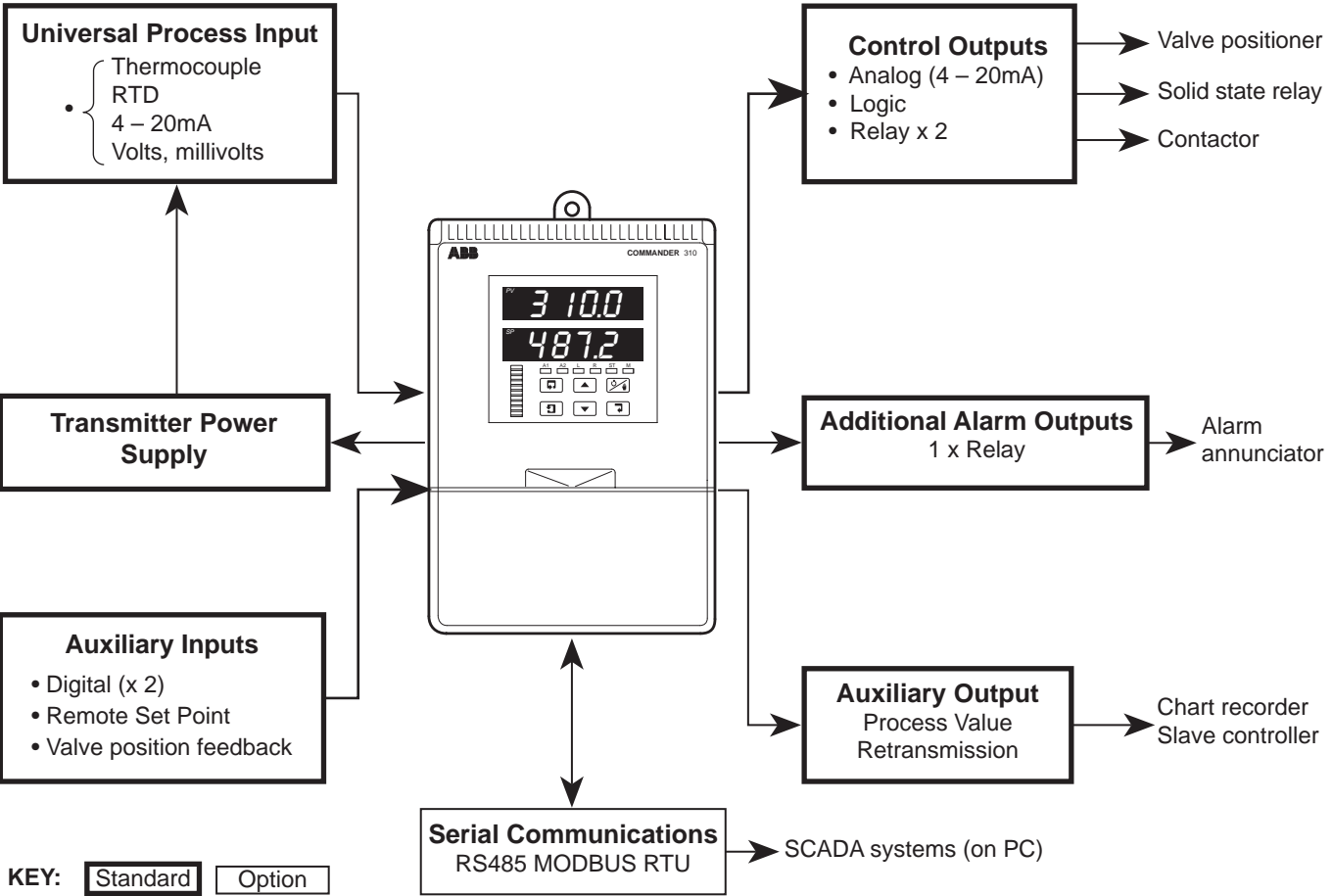
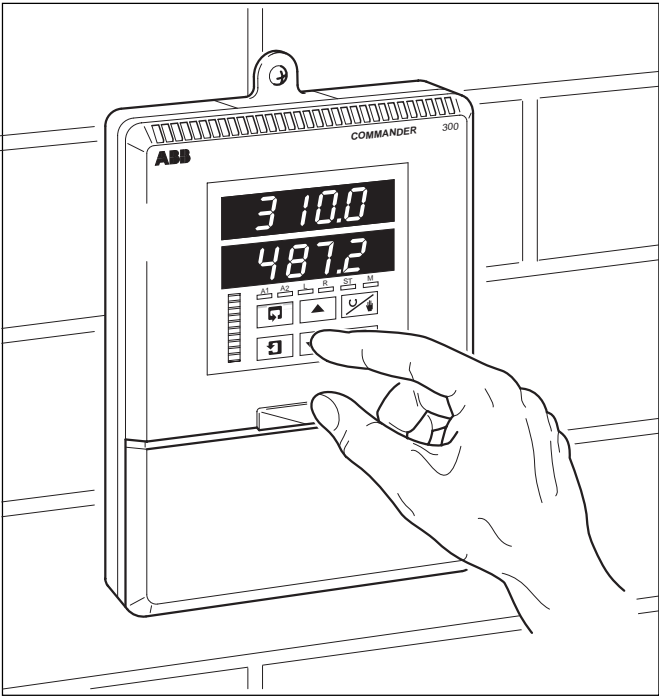
COMMANDER 310

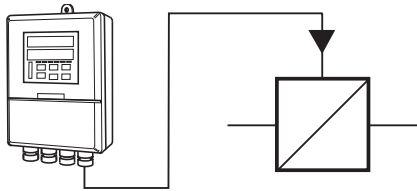
The COMMANDER 310 Wall/pipe-mount Universal Process Controller is a highly versatile single-loop controller packaged in a robust field-mounting housing.

No need to fit an expensive instrument panel when installing or upgrading process equipment. The COMMANDER 310 can be rapidly commissioned by simply fixing it to any flat surface or pipe and making the electrical connections via the cable entry glands on the underside of the unit.

The instrument has extensive control and i/o capabilities fitted as standard, allowing it to be rapidly configured for almost any application.

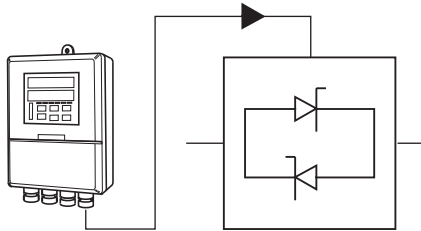
With IP66/NEMA4X water/dust protection the COMMANDER 310 can be mounted right next to your process, no matter how harsh the environment.





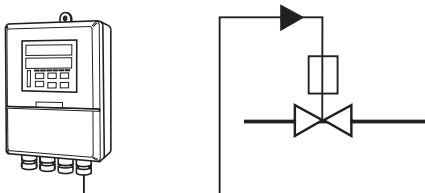
## PID Control

The COMMANDER 310's isolated analog output provides the standard control output to i/p converters, thyristors etc. Alternatively, built-in relays can be used to generate a time-proportioning control output.



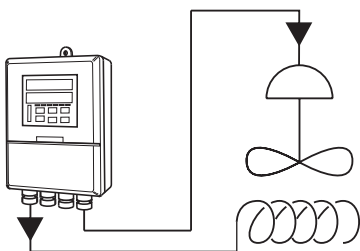
## Solid State Relay SSR

A 12V time-proportioning logic output on the standard C310 can be used to drive solid state relays (SSRs).



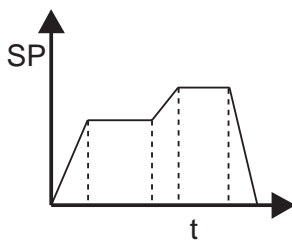
## Valve Position

The COMMANDER 310 is fitted with twin relays and a valve-position input for closed-loop control of a motorized valve. 'Boundless' control (without position feedback) and analog control (using 4 to 20mA output) are also available in the standard unit.



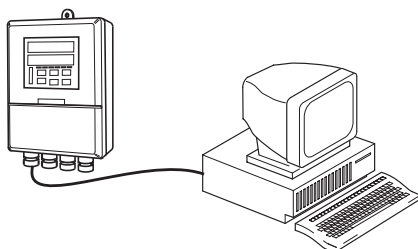
## Heat/Cool

Heat/cool control strategies may be implemented on the standard COMMANDER 310, using a combination of the analog control output and one relay.



## Ramp/Soak Set Point Profiles

The standard ramp/soak facility provides 30 segments, freely assignable amongst 9 programs. A Segment Event function enables relays to be switched on or off at predetermined points within the program.



## Serial Communications

Not only does the COMMANDER 310 provide clear process information in the field, it can also communicate plant data to control rooms via an RS485 link, using MODBUS protocol.

## Summary

COMMANDER 310 Wall/Pipe Mount Universal Controller

P, PI, PID single loop controller

Autotune facility

Fully user configurable

IP66 (NEMA 4X) front face and housing

User defined via front panel

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## Transmitter power supply

24V 30mA max. powers one loop, fitted as standard

---

## Outputs

### Control output

Configurable as either:

|               |                           |
|---------------|---------------------------|
| <b>Analog</b> | in the range of 0 to 20mA |
| Max. load     | 15V (750Ω at 20mA)        |
| Accuracy      | ≤0.1% of span             |
| Isolation     | 1kV a.c.                  |
| <b>Logic</b>  | 12Vd.c. (SSR drive)       |
| Max. load     | 400Ω                      |
| Isolation     | 1kV a.c.                  |

### Retransmission

0 to 20mA configurable for process variable, set point or position feedback values

|           |                    |
|-----------|--------------------|
| Max. load | 15V (750Ω at 20mA) |
| Accuracy  | ≤0.1% of span      |

### Relay outputs

Three relays, configurable for time proportioning control, valve drive or alarms.

SPST 5A 120/240V a.c. normally open or normally closed

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## Option

### Serial communications

Connections – RS485, 4-wire, 1.2k to 9.6k baud rate  
Protocol – MODBUS RTU

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## Electrical

### Voltage

115V ±15% or 230V ±15% 50/60Hz (link selectable)

### Power consumption

<10VA

### Power interruption protection

<60ms/<3 cycles, no effect  
>60ms/>3 cycles, controlled reset

### Line interference

Meets IEC 801 Pt IV level 3 (>2kV spikes)

---

## Environmental

### Operating limits

–10° to 55°C (14° to 131°F), 0 to 95%RH non-condensing

### Temperature stability

<0.02% of reading or 1μV/°C (0.5μV/°F)

### Housing dust/water protection

IP66 (NEMA 4X)

### RF protection

Meets IEC 801 Pt. III level 3

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## EMC

### Emissions

Meets requirements of EN50081-2

### Immunity

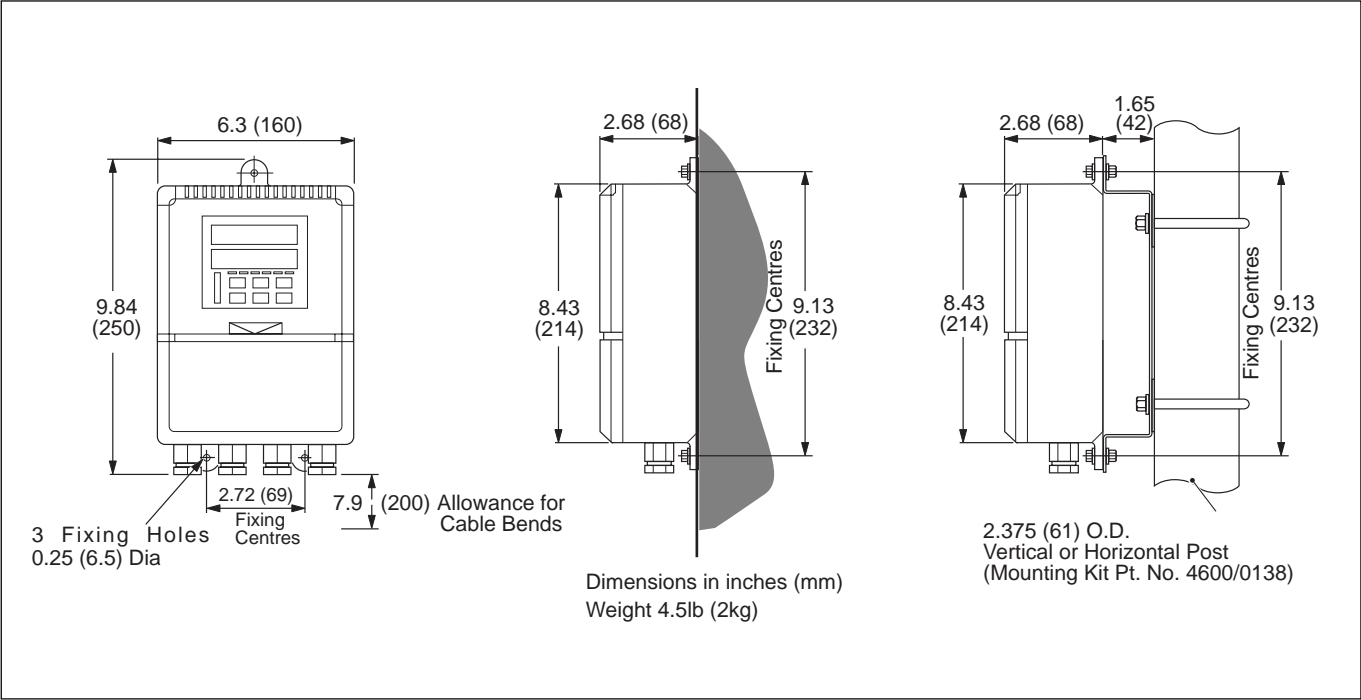
Meets requirements of EN50082-2

### Design and Manufacturing Standards

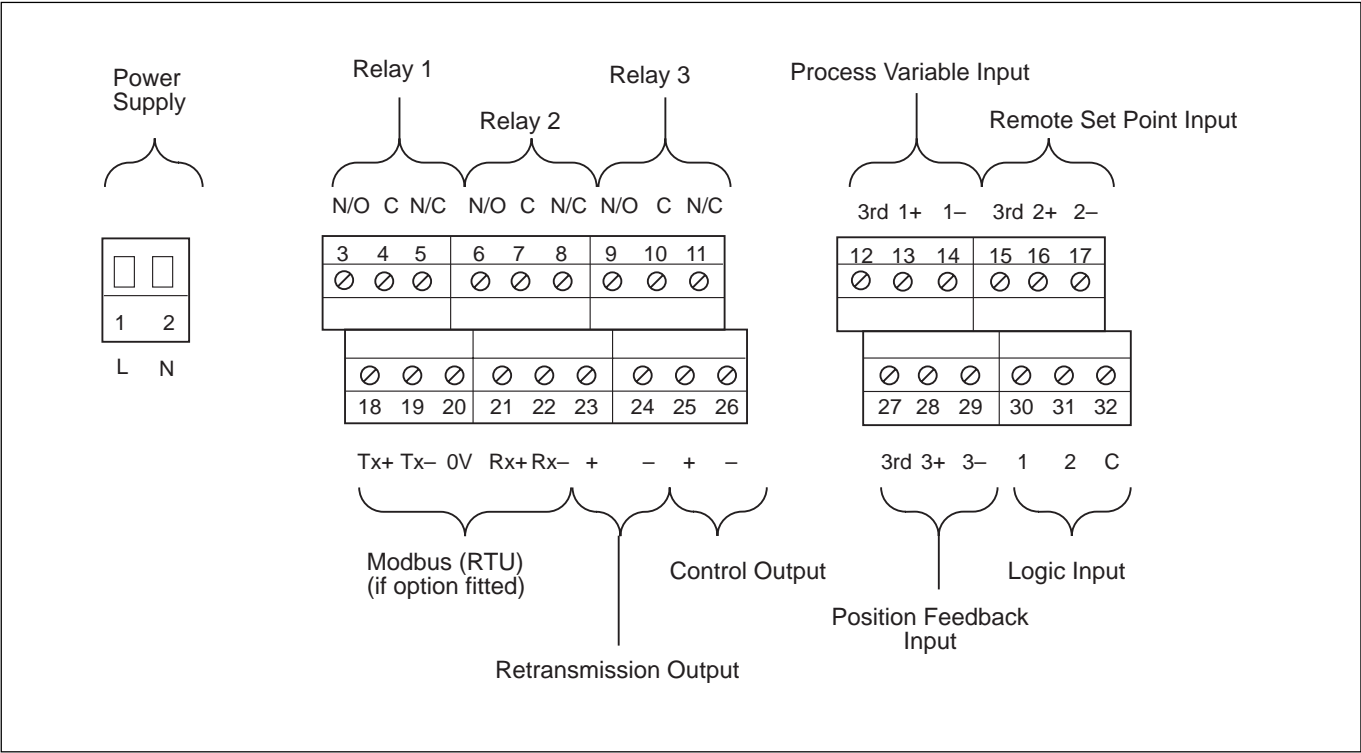
CE  
CSA  
CSA/FM Cl.1 Div.2 Hazardous Area

---

Dimensions



Wiring Connections



## Ordering Guide

|                                     |                                |  |          |          |          |            |                    |
|-------------------------------------|--------------------------------|--|----------|----------|----------|------------|--------------------|
| <b>COMMANDER 310 Controller</b>     |                                | <b>C310 /</b>  | <b>X</b> | <b>X</b> | <b>X</b> | <b>X /</b> | <b>XXXX</b>        |
| <b>Option Board</b>                 | None                           |  | 0        | 0        |          |            |                    |
|                                     | RS 485 Modbus Serial Comms.    |  | 0        | 1        |          |            |                    |
| <b>Power Supply</b>                 | 115V a.c. 1/2NPT blanking plug |  |          |          | 1        |            |                    |
|                                     | 230V a.c. M20 cable gland      |  |          |          | 2        |            |                    |
|                                     | 115V a.c. M20 blanking plug    |  |          |          | 4        |            |                    |
|                                     | 230V a.c. 1/2NPT cable gland   |  |          |          | 5        |            |                    |
| <b>Build</b>                        | Standard                       |  |          |          |          | 0          |                    |
|                                     | CSA approved (pending)         |  |          |          |          | 1          |                    |
|                                     | CSA/FM Cl.1 Div. 2             |  |          |          |          | 3          |                    |
| <b>Programming/Special Features</b> |                                | Configured to factory standard<br>Configured to customer detail<br>Agreed special features |          |          |          |            | STD<br>CUS<br>SPXX |

## Instrument Coding Example

|                                |               |           |          |            |            |
|--------------------------------|---------------|-----------|----------|------------|------------|
|                                | <b>C310 /</b> | <b>01</b> | <b>1</b> | <b>2 /</b> | <b>STD</b> |
| COMMANDER 310 Controller       |               |           |          |            |            |
| RS485 Modbus Communications    |               |           |          |            |            |
| 115V a.c.                      |               |           |          |            |            |
| UL approved                    |               |           |          |            |            |
| Factory standard configuration |               |           |          |            |            |



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