

## C1900 Controller Custom Configuration

### 1 Introduction

ABB can supply custom configurations for the C1900 Circular Chart Recorder /Controller on request.

Enter the required setting or place a check mark (✓) against the relevant parameters in the following tables and return this document to the Global Sales office at Stonehouse.

### 2 Input Configuration

Referring to Section 3.1 of the Programming Guide (IM/C1900-PGC), enter the settings required for each of the process variables.

#### 2.1 Process Variable 1

**Input Type** (✓ the input type required)

None	
Millivolt	
Milliamp	
High Resistance	
Low Resistance	
Volts	
Thermocouple	
Resistance Thermometer	

**Linearizer Type** (✓ the linearizer type required)

None	
THC Type B	
THC Type E	
THC Type J	
THC Type K	
THC Type N	
THC Type R	
THC Type S	
THC Type T	
RTD (PT100)	
Square root	
3/2	
5/2	

**Electrical Input Range** (enter the values required)

High	
Low	

**Temperature Units** (✓ the temperature units required)

Degrees F	
Degrees C	
None	

**Engineering Range** (enter the values required)

High	
Low	

**Decimal Point** (✓ the number of decimal places required)

0	
1	
2	
3	
4	

**Broken Sensor Protection Drive**

(✓ the drive direction required)

None	
Upscale	
Downscale	

**Fault Detection Level %** (enter the tolerance required)

--

**Programmable Filter** (enter the filter time required)

--

## 2.2 Process Variable 2

### Input Type (✓ the input type required)

None	
Millivolt	
Milliamp	
High Resistance	
Low Resistance	
Volts	
Thermocouple	
Resistance Thermometer	

### Linearizer Type (✓ the linearizer type required)

None	
THC Type B	
THC Type E	
THC Type J	
THC Type K	
THC Type N	
THC Type R	
THC Type S	
THC Type T	
RTD (PT100)	
Square root	
3/2	
5/2	

### Electrical Input Range (enter the values required)

High	
Low	

### Temperature Units (✓ the temperature units required)

Degrees F	
Degrees C	
None	

### Engineering Range (enter the values required)

High	
Low	

### Decimal Point (✓ the number of decimal places required)

0	
1	
2	
3	
4	

### Broken Sensor Protection Drive

(✓ the drive direction required)

None	
Upscale	
Downscale	

### Fault Detection Level % (enter the tolerance required)

--

### Programmable Filter (enter the filter time required)

--

### 2.3 Process Variable 3

**Input Type** (✓ the input type required)

None	
Millivolt	
Milliamp	
High Resistance	
Low Resistance	
Volts	
Thermocouple	
Resistance Thermometer	

**Linearizer Type** (✓ the linearizer type required)

None	
THC Type B	
THC Type E	
THC Type J	
THC Type K	
THC Type N	
THC Type R	
THC Type S	
THC Type T	
RTD (PT100)	
Square root	
3/2	
5/2	

**Electrical Input Range** (enter the values required)

High	
Low	

**Temperature Units** (✓ the temperature units required)

Degrees F	
Degrees C	
None	

**Engineering Range** (enter the values required)

High	
Low	

**Decimal Point** (✓ the number of decimal places required)

0	
1	
2	
3	
4	

**Broken Sensor Protection Drive**

(✓ the drive direction required)

None	
Upscale	
Downscale	

**Fault Detection Level %** (enter the tolerance required)

--

**Programmable Filter** (enter the filter time required)

--

## 2.4 Process Variable 4

### Input Type (✓ the input type required)

None	
Millivolt	
Milliamp	
High Resistance	
Low Resistance	
Volts	
Thermocouple	
Resistance Thermometer	

### Linearizer Type (✓ the linearizer type required)

None	
THC Type B	
THC Type E	
THC Type J	
THC Type K	
THC Type N	
THC Type R	
THC Type S	
THC Type T	
RTD (PT100)	
Square root	
3/2	
5/2	

### Electrical Input Range (enter the values required)

High	
Low	

### Temperature Units (✓ the temperature units required)

Degrees F	
Degrees C	
None	

### Engineering Range (enter the values required)

High	
Low	

### Decimal Point (✓ the number of decimal places required)

0	
1	
2	
3	
4	

### Broken Sensor Protection Drive

(✓ the drive direction required)

None	
Upscale	
Downscale	

### Fault Detection Level % (enter the tolerance required)

--

### Programmable Filter (enter the filter time required)

--

### 3 Set Up Pen Range

Referring to Section 3.2 of the Programming Guide (IM/C1900–PGC), enter the settings required for each of the pens.

**Pen 1** (enter the values required)

High	
Low	

**Pen 2** (enter the values required)

High	
Low	

**Pen 3** (enter the values required)

High	
Low	

**Pen 4** (enter the values required)

High	
Low	

**Event Pen (if fitted)** (enter the values required)

In Source	
Out Source	

### 4 Set Up Chart

Referring to Section 3.3 of the Programming Guide (IM/C1900–PGC), enter the settings required for each of the pens.

**Chart Duration** (enter the value required)

--

**Stop Chart Source**

(enter the source required to stop the chart)

--

**Auto Pen Drop** (✓ the setting required)

Yes	
No	

**Pen Lift Key Enable** (✓ the setting required)

Yes	
No	

## 5 Set Up Alarms

Referring to Section 3.4 of the Programming Guide (IM/C1900-PGC), enter the settings required for each of the alarms.

### Alarm Acknowledge Type

(✓ the acknowledge type required)

Latch	
Normal	
None	

### Global Alarm Acknowledge Source

(enter a source to acknowledge all alarms)

### 5.1 Alarm A1

**Type** (✓ the alarm type required)

Off	
High Process	
Low Process	
High Output	
Low Output	
High Deviation	
Low Deviation	
Fast Rate	
Slow Rate	
Delayed High Process	
Delayed Low Process	

**Trip Level** (enter the trip point value required)

**Hysteresis** (enter the hysteresis value required)

### Time Hysteresis

(enter the time hysteresis value required – 0 to 9999 seconds)

### Alarm Delay – if applicable

(enter the delay value required – 0 to 250 minutes)

### Enable Source

(enter a source to enable/disable the alarm)

### 5.2 Alarm B1

**Type** (✓ the alarm type required)

Off	
High Process	
Low Process	
High Output	
Low Output	
High Deviation	
Low Deviation	
Fast Rate	
Slow Rate	
Delayed High Process	
Delayed Low Process	

**Trip Level** (enter the trip point value required)

**Hysteresis** (enter the hysteresis value required)

### Time Hysteresis

(enter the time hysteresis value required – 0 to 9999 seconds)

### Alarm Delay – if applicable

(enter the delay value required – 0 to 250 minutes)

### Enable Source

(enter a source to enable/disable the alarm)

### 5.3 Alarm C1

**Type** (✓ the alarm type required)

Off	
High Process	
Low Process	
High Output	
Low Output	
High Deviation	
Low Deviation	
Fast Rate	
Slow Rate	
Delayed High Process	
Delayed Low Process	

**Trip Level** (enter the trip point value required)

**Hysteresis** (enter the hysteresis value required)

**Time Hysteresis**

(enter the time hysteresis value required – 0 to 9999 seconds)

**Alarm Delay – if applicable**

(enter the delay value required – 0 to 250 minutes)

**Enable Source**

(enter a source to enable/disable the alarm)

### 5.4 Alarm D1

**Type** (✓ the alarm type required)

Off	
High Process	
Low Process	
High Output	
Low Output	
High Deviation	
Low Deviation	
Fast Rate	
Slow Rate	
Delayed High Process	
Delayed Low Process	

**Trip Level** (enter the trip point value required)

**Hysteresis** (enter the hysteresis value required)

**Time Hysteresis**

(enter the time hysteresis value required – 0 to 9999 seconds)

**Alarm Delay – if applicable**

(enter the delay value required – 0 to 250 minutes)

**Enable Source**

(enter a source to enable/disable the alarm)

### 5.5 Alarm A2

**Type** (✓ the alarm type required)

Off	
High Process	
Low Process	
High Output	
Low Output	
High Deviation	
Low Deviation	
Fast Rate	
Slow Rate	
Delayed High Process	
Delayed Low Process	

**Trip Level** (enter the trip point value required)

**Hysteresis** (enter the hysteresis value required)

**Time Hysteresis**

(enter the time hysteresis value required – 0 to 9999 seconds)

**Alarm Delay – if applicable**

(enter the delay value required – 0 to 250 minutes)

**Enable Source**

(enter a source to enable/disable the alarm)

### 5.6 Alarm B2

**Type** (✓ the alarm type required)

Off	
High Process	
Low Process	
High Output	
Low Output	
High Deviation	
Low Deviation	
Fast Rate	
Slow Rate	
Delayed High Process	
Delayed Low Process	

**Trip Level** (enter the trip point value required)

**Hysteresis** (enter the hysteresis value required)

**Time Hysteresis**

(enter the time hysteresis value required – 0 to 9999 seconds)

**Alarm Delay – if applicable**

(enter the delay value required – 0 to 250 minutes)

**Enable Source**

(enter a source to enable/disable the alarm)

### 5.7 Alarm C2

**Type** (✓ the alarm type required)

Off	
High Process	
Low Process	
High Output	
Low Output	
High Deviation	
Low Deviation	
Fast Rate	
Slow Rate	
Delayed High Process	
Delayed Low Process	

**Trip Level** (enter the trip point value required)

**Hysteresis** (enter the hysteresis value required)

**Time Hysteresis**

(enter the time hysteresis value required – 0 to 9999 seconds)

**Alarm Delay – if applicable**

(enter the delay value required – 0 to 250 minutes)

**Enable Source**

(enter a source to enable/disable the alarm)

### 5.8 Alarm D2

**Type** (✓ the alarm type required)

Off	
High Process	
Low Process	
High Output	
Low Output	
High Deviation	
Low Deviation	
Fast Rate	
Slow Rate	
Delayed High Process	
Delayed Low Process	

**Trip Level** (enter the trip point value required)

**Hysteresis** (enter the hysteresis value required)

**Time Hysteresis**

(enter the time hysteresis value required – 0 to 9999 seconds)

**Alarm Delay – if applicable**

(enter the delay value required – 0 to 250 minutes)

**Enable Source**

(enter a source to enable/disable the alarm)

### 5.9 Alarm A3

**Type** (✓ the alarm type required)

Off	
High Process	
Low Process	
High Output	
Low Output	
High Deviation	
Low Deviation	
Fast Rate	
Slow Rate	
Delayed High Process	
Delayed Low Process	

**Trip Level** (enter the trip point value required)

**Hysteresis** (enter the hysteresis value required)

**Time Hysteresis**

(enter the time hysteresis value required – 0 to 9999 seconds)

**Alarm Delay – if applicable**

(enter the delay value required – 0 to 250 minutes)

**Enable Source**

(enter a source to enable/disable the alarm)

### 5.10 Alarm B3

**Type** (✓ the alarm type required)

Off	
High Process	
Low Process	
High Output	
Low Output	
High Deviation	
Low Deviation	
Fast Rate	
Slow Rate	
Delayed High Process	
Delayed Low Process	

**Trip Level** (enter the trip point value required)

**Hysteresis** (enter the hysteresis value required)

**Time Hysteresis**

(enter the time hysteresis value required – 0 to 9999 seconds)

**Alarm Delay – if applicable**

(enter the delay value required – 0 to 250 minutes)

**Enable Source**

(enter a source to enable/disable the alarm)

### 5.11 Alarm C3

**Type** (✓ the alarm type required)

Off	
High Process	
Low Process	
High Output	
Low Output	
High Deviation	
Low Deviation	
Fast Rate	
Slow Rate	
Delayed High Process	
Delayed Low Process	

**Trip Level** (enter the trip point value required)

**Hysteresis** (enter the hysteresis value required)

**Time Hysteresis**

(enter the time hysteresis value required – 0 to 9999 seconds)

**Alarm Delay** – *if applicable*

(enter the delay value required – 0 to 250 minutes)

**Enable Source**

(enter a source to enable/disable the alarm)

### 5.12 Alarm D3

**Type** (✓ the alarm type required)

Off	
High Process	
Low Process	
High Output	
Low Output	
High Deviation	
Low Deviation	
Fast Rate	
Slow Rate	
Delayed High Process	
Delayed Low Process	

**Trip Level** (enter the trip point value required)

**Hysteresis** (enter the hysteresis value required)

**Time Hysteresis**

(enter the time hysteresis value required – 0 to 9999 seconds)

**Alarm Delay** – *if applicable*

(enter the delay value required – 0 to 250 minutes)

**Enable Source**

(enter a source to enable/disable the alarm)

### 5.13 Alarm A4

**Type** (✓ the alarm type required)

Off	
High Process	
Low Process	
High Output	
Low Output	
High Deviation	
Low Deviation	
Fast Rate	
Slow Rate	
Delayed High Process	
Delayed Low Process	

**Trip Level** (enter the trip point value required)

**Hysteresis** (enter the hysteresis value required)

**Time Hysteresis**

(enter the time hysteresis value required – 0 to 9999 seconds)

**Alarm Delay – if applicable**

(enter the delay value required – 0 to 250 minutes)

**Enable Source**

(enter a source to enable/disable the alarm)

### 5.14 Alarm B4

**Type** (✓ the alarm type required)

Off	
High Process	
Low Process	
High Output	
Low Output	
High Deviation	
Low Deviation	
Fast Rate	
Slow Rate	
Delayed High Process	
Delayed Low Process	

**Trip Level** (enter the trip point value required)

**Hysteresis** (enter the hysteresis value required)

**Time Hysteresis**

(enter the time hysteresis value required – 0 to 9999 seconds)

**Alarm Delay – if applicable**

(enter the delay value required – 0 to 250 minutes)

**Enable Source**

(enter a source to enable/disable the alarm)

### 5.15 Alarm C4

**Type** (✓ the alarm type required)

Off	
High Process	
Low Process	
High Output	
Low Output	
High Deviation	
Low Deviation	
Fast Rate	
Slow Rate	
Delayed High Process	
Delayed Low Process	

**Trip Level** (enter the trip point value required)

**Hysteresis** (enter the hysteresis value required)

**Time Hysteresis**

(enter the time hysteresis value required – 0 to 9999 seconds)

**Alarm Delay – if applicable**

(enter the delay value required – 0 to 250 minutes)

**Enable Source**

(enter a source to enable/disable the alarm)

### 5.16 Alarm D4

**Type** (✓ the alarm type required)

Off	
High Process	
Low Process	
High Output	
Low Output	
High Deviation	
Low Deviation	
Fast Rate	
Slow Rate	
Delayed High Process	
Delayed Low Process	

**Trip Level** (enter the trip point value required)

**Hysteresis** (enter the hysteresis value required)

**Time Hysteresis**

(enter the time hysteresis value required – 0 to 9999 seconds)

**Alarm Delay – if applicable**

(enter the delay value required – 0 to 250 minutes)

**Enable Source**

(enter a source to enable/disable the alarm)

## 6 Set Up Relay Output

Referring to Section 3.5 of the Programming Guide (IM/C1900–PGC), enter the settings required for each of the relays.

**Relay 1.1 (Input 1) Source** (enter the source required)

--

**Relay 1.1 (Input 1) Polarity** (✓ the polarity required)

Positive	
Negative	

**Relay 2.1 (Input 2) Source** (enter the source required)

--

**Relay 2.1 (Input 2) Polarity** (✓ the polarity required)

Positive	
Negative	

**Relay 3.1 (Input 3) Source** (enter the source required)

--

**Relay 3.1 (Input 3) Polarity** (✓ the polarity required)

Positive	
Negative	

**Relay 4.1 (Input 4) Source** (enter the source required)

--

**Relay 4.1 (Input 4) Polarity** (✓ the polarity required)

Positive	
Negative	

**Relay Module Type 3 in Position 4 (if fitted)**

(for each relay, enter the source and ✓ the polarity required)

**Relay 4.1**

Source				
Polarity	Positive		Negative	

**Relay 4.2**

Source				
Polarity	Positive		Negative	

**Relay 4.3**

Source				
Polarity	Positive		Negative	

**Relay 4.4**

Source				
Polarity	Positive		Negative	

**Relay Module Type 3 in Position 5 (if fitted)**

(for each relay, enter the source and ✓ the polarity required)

**Relay 5.1**

Source				
Polarity	Positive		Negative	

**Relay 5.2**

Source				
Polarity	Positive		Negative	

**Relay 5.3**

Source				
Polarity	Positive		Negative	

**Relay 5.4**

Source				
Polarity	Positive		Negative	

## 7 Set Up Analog Output

Referring to Section 3.7 of the Programming Guide (IM/C1900–PGC), enter the settings required for each of the analog outputs.

### 7.1 Position 1

**Output Source** (enter the source required)

--

**Retransmission Range**

(enter the values required in engineering units)

High	
Low	

**Output Range – 2 to 20 mA** (enter the values required)

High	
Low	

### 7.2 Position 2

**Output Source** (enter the source required)

--

**Retransmission Range**

(enter the values required in engineering units)

High	
Low	

**Output Range – 2 to 20 mA** (enter the values required)

High	
Low	

### 7.3 Position 3

**Output Source** (enter the source required)

--

**Retransmission Range**

(enter the values required in engineering units)

High	
Low	

**Output Range – 2 to 20 mA** (enter the values required)

High	
Low	

### 7.4 Position 4

**Output Source** (enter the source required)

--

**Retransmission Range**

(enter the values required in engineering units)

High	
Low	

**Output Range – 2 to 20 mA** (enter the values required)

High	
Low	

## 8 Control Configuration

### 8.1 Set Up Control

Referring to Section 4.3.4 of the Programming Guide (IM/C1900–PGC), enter the settings required for each of the control modules.

#### 8.1.1 Control Module 1

**Control Type** (✓ the type required)

Standard	
Heat/Cool	
Position/Proportioning	
Boundless	

**Power Failure Mode** (✓ the mode required)

Automatic	
Manual	
Last	

**Offset** (✓ the offset required)

0 %	
50 %	

**Control Action** (✓ the action required)

Direct Acting	
Reverse Acting	

**Output Limits** (enter the values required)

High	
Low	

**Control Action (Heat)** – Heat/Cool only  
 (✓ the action required)

Direct Acting	
Reverse Acting	

**Control Action (Cool)** – Heat/Cool only  
 (✓ the action required)

Direct Acting	
Reverse Acting	

#### 8.1.2 Control Module 2

**Control Type** (✓ the type required)

Standard	
Heat/Cool	
Position/Proportioning	
Boundless	

**Power Failure Mode** (✓ the mode required)

Automatic	
Manual	
Last	

**Offset** (✓ the offset required)

0 %	
50 %	

**Control Action** (✓ the action required)

Direct Acting	
Reverse Acting	

**Output Limits** (enter the values required)

High	
Low	

**Control Action (Heat)** – Heat/Cool only  
 (✓ the action required)

Direct Acting	
Reverse Acting	

**Control Action (Cool)** – Heat/Cool only  
 (✓ the action required)

Direct Acting	
Reverse Acting	

## 8.2 Set Points

Referring to Section 4.1.3 of the Programming Guide (IM/C1900–PGC), enter the settings required for each of the control modules.

### 8.2.1 Control Module 1

**Local Set Point Limits** (enter the values required)

High	
Low	

**Local Set Point Value** (enter the value required)

--

**Set Point Tracking** (✓ the setting required)

On	
Off	

**Second Set Point Type** (✓ the type required)

None	
Dual	
Remote	
Cascade	

**Output Tracking Enable** – *Cascade only*  
 (✓ the setting required)

On	
Off	

**Remote (Cascade) Set Point Tracking**  
 (✓ the setting required)

On	
Off	

**Set Point Limits** – *Dual, Remote and Cascade*  
 (enter the values required)

High	
Low	

**Dual Set Point Value**  
 (enter the value required)

--

**Remote (Cascade) Set Point Ratio**  
 (enter the value required)

--

**Remote (Cascade) Set Point Bias** (enter the value required)

--

### 8.2.2 Control Module 2 (if fitted)

**Local Set Point Limits** (enter the values required)

High	
Low	

**Local Set Point Value** (enter the value required)

--

**Set Point Tracking** (✓ the setting required)

On	
Off	

**Second Set Point Type** (✓ the type required)

None	
Dual	
Remote	
Cascade	

**Output Tracking Enable** – *Cascade only*  
 (✓ the setting required)

On	
Off	

**Remote (Cascade) Set Point Tracking**  
 (✓ the setting required)

On	
Off	

**Set Point Limits** – *Dual, Remote and Cascade*  
 (enter the values required)

High	
Low	

**Dual Set Point Value**  
 (enter the value required)

--

**Remote (Cascade) Set Point Ratio**  
 (enter the value required)

--

**Remote (Cascade) Set Point Bias** (enter the value required)

--

### 8.3 Motorized Valve

Referring to Section 4.2.3 of the Programming Guide (IM/C1900–PGC), enter the settings required for each of the control modules.

#### 8.3.1 Control Module 1

**Ratio** (enter the value required)

**Bias** (enter the value required)

**Deadband** (enter the value required)

**Regulator Travel Time – *Boundless***  
(enter the value required)

**Deadband – *Boundless***  
(enter the value required)

#### 8.3.2 Control Module 2

**Ratio** (enter the value required)

**Bias** (enter the value required)

**Deadband** (enter the value required)

**Regulator Travel Time – *Boundless***  
(enter the value required)

**Deadband – *Boundless***  
(enter the value required)

## Notes

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