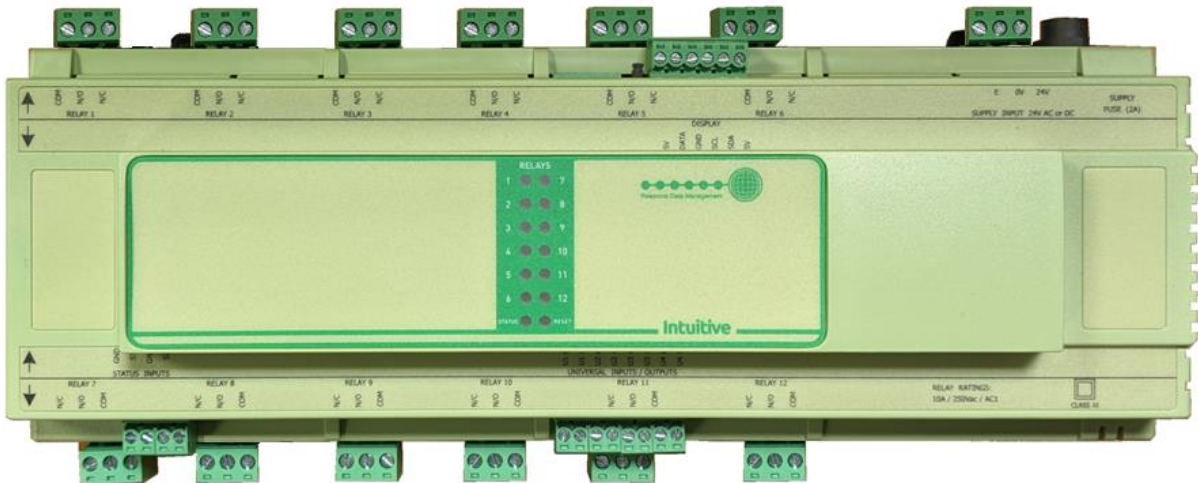


Resource
Data Management

Intuitive V2 Backup Controller

Commissioning/User Guide
Revision 4.0



PR0659

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The Intuitive V2 Backup Controller

From Resource Data Management

This documentation refers to the Intuitive V2 Backup Controllers

Description

The Backup controllers are intended as a backup system for the primary pack/condenser controller. The controllers have built in displays which allow for setup of the units as well as interrogating the controller. There are 12 relay outputs used to operate compressors, loaders, condenser fans or act as a standby relay used to place the primary pack/condenser controller into standby. Relays can also be assigned as Inverter enable relays to activate a variable speed device. There are two analogue Inputs for pressure transducers which can be set either as 0-10Vdc or 4-20mA. There are 2 analogue outputs used to control variable speed devices and either output can be set to 4-20mA or 0-10Vdc. There are 2 digital inputs which are used to return control to the primary pack/condenser controller if the backup controller is enabled. There are a number of software configuration options which can be selected during setup of the controller and they are shown in the Configuration section below.

All relays are volt-free and can be mixed between low and high voltage sources. The controllers require a 24Vac supply or 24Vdc PSU (Available from RDM: - PR0625)

Configuration - Types

The controllers have seven configuration options: -

| Display value | Type |
|---------------|---------------------|
| 1 | LT Pack |
| 2 | HT Pack |
| 3 | HT & LT Pack |
| 4 | Condenser |
| 5 | Dual Condenser |
| 6 | LT Pack & Condenser |
| 7 | HT Pack & Condenser |

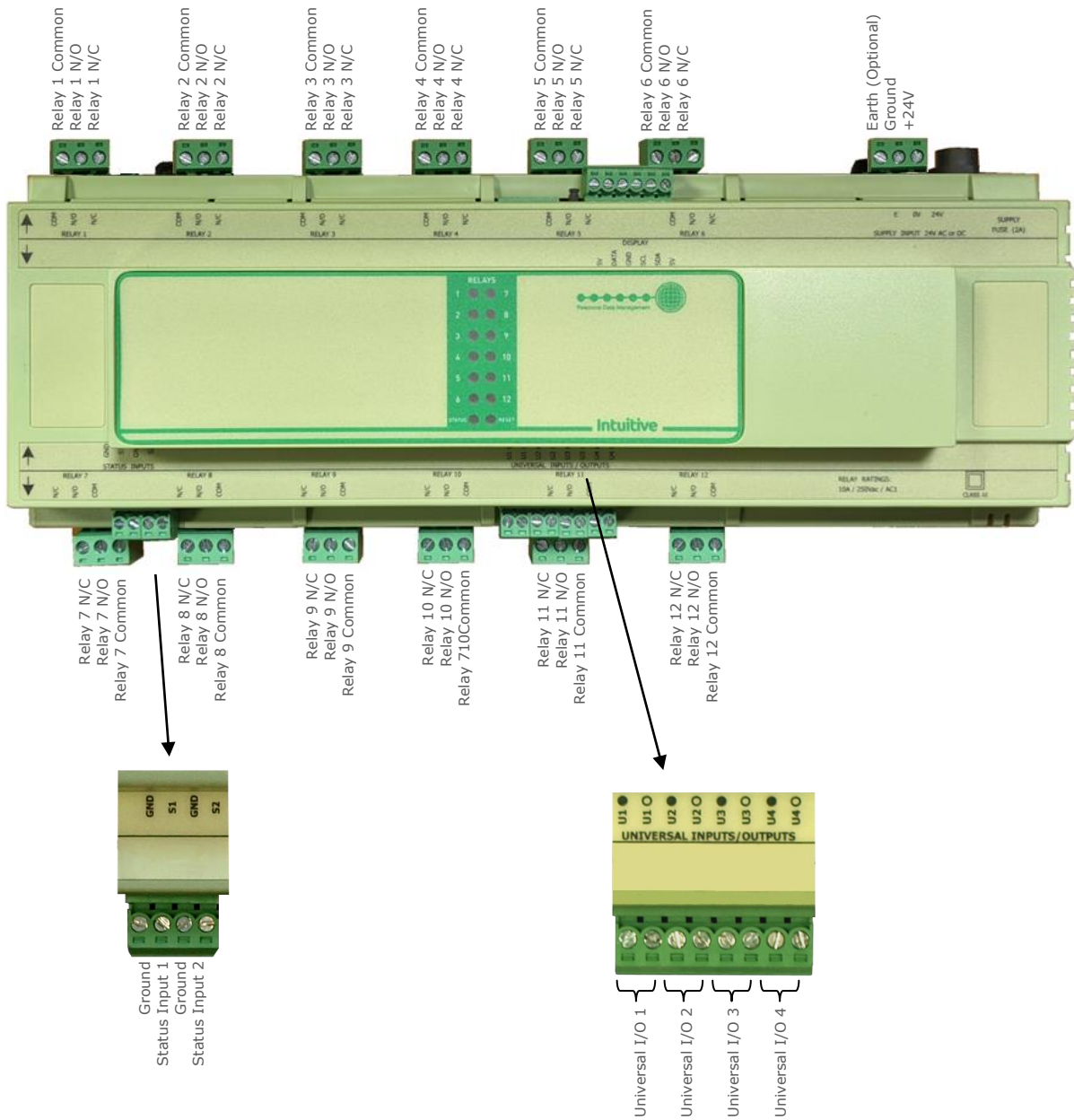
The controllers are delivered pre-configured as an LT Pack Controller (Type 1)

See: [Set-up](#) to change the controller type.



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Intuitive Backup Controller I/O Connections



Universal Inputs/Outputs

| 0-10V or 4 -20mA Input/Outputs | |
|--------------------------------|---|
| U1-U2 ● | 4-20mA Loop Input or 0-10V / 5V Ground |
| U1-U2 ○ | 12v Transducer Feed or 0-10V / 5V Input |
| U3-U4 ● | Ground |
| U3-U4 ○ | 4-20mA Output or 0-10V / 5V Output |

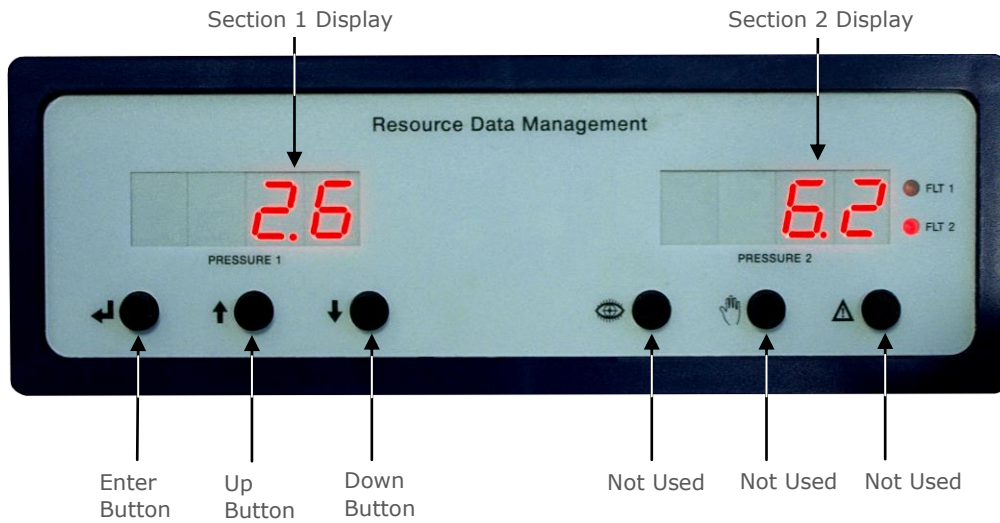


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Setting up the controller

Set-up access to the controller can be achieved through a remote display connected to the controller.

Remote Display (PR0620)



If the Type selected has two sections then the Plant Display will show the Section 1 pressure on the left hand display and Section 2 pressure on the right hand display.

Front Panel Remote Display Buttons

- Enter Button** Used along with down button to enter menu items.
- Up/Down Button** Used to scroll up and down

Remote Display (PR0725)



- Enter Button: - Used to confirm settings or enter software menus.
- Up/Down Button: - Used to scroll up/down through menu options

If the Type selected has 2 sections then the plant controller display alternates between section 1 pressure and section 2 pressure. The bar on the left hand side of the display indicates which section is currently being displayed. When section 1 pressure is displayed the bar is at the top. When section 2 pressure is displayed the bar is at the bottom of the display.

Section 1 Pressure



Section 2 Pressure



Note: If "Ft" is displayed in either display, this indicates a transducer fault. "Ft" in the left hand display indicates section 1 transducer is faulty, "Ft" in right hand display indicates section 2 transducer is faulty.



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Inputs & Outputs

| All Types | Description | Comments |
|------------------------------|---------------------|---|
| Status Input 1 & 2 | 0V return or 24 Vac | Section 1 & 2 Reset Note 1 |
| Universal Input/Output 1 & 2 | 4-20mA or 0-10Vdc | Section 1 & 2 Suction / Discharge Transducer |
| Universal Input/Output 3 & 4 | 4-20mA or 0-10Vdc | Section 1 & 2 Inverter output |
| Relay 1 to 12 | N/O, N/C and Common | Comp or Fan or Inverter Enable or Standby Relay : |

Note 1:

The Intuitive V2 Backup controller will remain inactive should the corresponding reset input be present or the relevant pressure transducer is faulty.

24 Vac must have the same 24 Vac return as the supply voltage. If using the Intuitive controller 24V power supply only the 24Vac signal from the supply is required for the digital input.

Note 2:

All relay outputs for compressors, fans, inverter enable and standby are wired to the normally open contacts.

Set-up Mode

To enter set-up mode, hold the Enter and Down buttons together for approximately 3 seconds until the message "Ent" appears on the display. Now press the Enter button again to enter the function menu. IO will be displayed. Scroll up or down to go through the list

Set-up Function Menu

| Display | Option | Explained in Paragraph |
|---------|--------------------------|---|
| IO | View Input/Output States | View Input/Output States |
| PArA | Set/view Parameters | Set/view Parameters |
| tyPE | Set/View Controller Type | Set/view Configuration Type |
| SoFt | View software version | |
| ESC | Exit set-up mode | |

Recommended set-up method

type. Set/view controller type

1. From the function menu scroll to "type", press enter
2. Use the up/down buttons to scroll through the type values. (See [configuration](#) on page 3)
3. Press enter.

The controller will reset with the selected type now programmed.

NOTE: When changing controller types from one type to another always check the parameters and the controller configuration to ensure they are appropriate for the application selected.



Please ensure all power is switched off before installing or maintaining this product.

PArA. Set/view parameters

1. From the function menu scroll to PArA
2. Pressing Enter while PArA is displayed will enter the parameter menu.

The first parameter option will be displayed as P-01. Pressing the Up or Down button will present the other parameter options P-02, P-03 etc. See the parameter list below to find what parameter number corresponds to which actual parameter.

Pressing the Enter button will show the current value of the selected parameter. Press Up or Down to modify the value and press Enter again to save the value. The parameter list number will be displayed again.

Two other options are present in the parameter menu – dFLt and ESC. Selecting ESC will exit the parameter set-up mode. Selecting dFLt will reset all parameters back to the default values for the current controller type.

Parameter Tables

| No. | Parameter | Range | Step | Unit | LT Pack (Type 1) | HT Pack (Type 2) | HT & LT Pack (Type 3) | Condenser (Type 4) | Dual Cond (Type 5) | LT Pack & Cond (Type 6) | HT Pack & Cond (Type 7) |
|------|--------------------------------|----------------|-------|------|------------------|------------------|-----------------------|--------------------|--------------------|-------------------------|-------------------------|
| | | | | | Default | | | | | | |
| P-01 | Sect 1 Suction Setpoint | -3.4 to 180 | 0.1 | Bar | 0.7 | 3.4 | 3.4 | | | 0.7 | 3.4 |
| P-02 | Sect 1 Suction Diff | -3.4 to 180 | 0.1 | Bar | 0.2 | 0.7 | 0.7 | | | 0.2 | 0.7 |
| P-05 | Sect 1 Low Suction Setpoint | -3.4 to 180 | 0.1 | Bar | 0.2 | 2.0 | 2.0 | | | 0.2 | 2.0 |
| P-06 | Sect 1 Low Suction Delay | 00:00 to 99:00 | 01:00 | mm: | 20:0 | 20:0 | 20:0 | | | 20:0 | 20:0 |
| P-09 | Sect 1 High Suction | -3.4 to 180 | 0.1 | Bar | 2.0 | 5.0 | 5.0 | | | 2.0 | 5.0 |
| P-10 | Sect 1 High Suction Delay | 00:00 to 99:00 | 01:00 | mm: | 20:0 | 20:0 | 20:0 | | | 20:0 | 20:0 |
| P-03 | Sect 2 Suction Setpoint | -3.4 to 180 | 0.1 | Bar | | | 0.7 | | | | |
| P-04 | Sect 2 Suction Diff | -3.4 to 180 | 0.1 | Bar | | | 0.2 | | | | |
| P-07 | Sect 2 Low Suction Setpoint | -3.4 to 180 | 0.1 | Bar | | | 0.2 | | | | |
| P-08 | Sect 2 Low Suction Delay | 00:00 to 99:00 | 01:00 | mm: | | | 20:0 | | | | |
| P-11 | Sect 2 High Suction | -3.4 to 180 | 0.1 | Bar | | | 2.0 | | | | |
| P-12 | Sect 2 High Suction Delay | 00:00 to 99:00 | 01:00 | mm: | | | 20:0 | | | | |
| P-20 | Sect 1 Discharge Setpoint | -3.4 to 180 | 0.1 | Bar | | | | 12 | 12 | | |
| P-21 | Sect 1 Discharge Diff | -3.4 to 180 | 0.1 | Bar | | | | 0.2 | 0.2 | | |
| P-22 | Sect 2 Discharge Setpoint | -3.4 to 180 | 0.1 | Bar | | | | | 12 | 12 | 12 |
| P-23 | Sect 2 Discharge Diff | -3.4 to 180 | 0.1 | Bar | | | | | 0.2 | 0.2 | 0.2 |
| P-24 | Sect 1 High Discharge Setpoint | -3.4 to 180 | 0.1 | Bar | | | | 19.5 | 19.5 | | |
| P-25 | Sect 2 High Discharge Setpoint | -3.4 to 180 | 0.1 | Bar | | | | | 19.5 | 19.5 | 19.5 |
| P-30 | Sect 1 On Delay | 00:00 to 60:00 | 00:01 | mm: | 01:0 | 01:0 | 01:0 | 01:0 | 01:0 | 01:0 | 01:0 |
| P-31 | Sect 1 Off Delay | 00:00 to 60:00 | 00:01 | mm: | 01:0 | 01:0 | 01:0 | 01:0 | 01:0 | 01:0 | 01:0 |
| P-32 | Sect 2 On Delay | 00:00 to 60:00 | 00:01 | mm: | | | 01:0 | | 01:0 | 01:0 | 01:0 |
| P-33 | Sect 2 Off Delay | 00:00 to 60:00 | 00:01 | mm: | | | 01:0 | | 01:0 | 01:0 | 01:0 |
| P-40 | Sect 1 Number of Relays | 2 to 12 | 1 | - | 12 | 12 | 6 | 12 | 6 | 12 | 6 |
| P-41 | Sect 2 Number of Relays | 2 to 12 | 1 | - | | | 6 | | 6 | 6 | 6 |



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| | | | | | | | | | | | |
|------|---|-----------------------|-----|-----|------|------|------|------|------|------|------|
| P-50 | Sect 1 Control Test. See Test | 0 = Off. 1 = On | 1 | - | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| P-51 | Sect 2 Control Test. See Test | 0 = Off. 1 = On | 1 | - | | | 0 | | 0 | 0 | 0 |
| P-60 | Sect 1 Transducer Span * | -3.4 to 180 | 0.1 | Bar | 9.0 | 9.0 | 9.0 | 30.0 | 30.0 | 9.0 | 9.0 |
| P-61 | Sect 1 Transducer Offset | -3.4 to 180 | 0.1 | Bar | -1.0 | -1.0 | -1.0 | 0.0 | 0.0 | -1.0 | -1.0 |
| P-62 | Sect 1 Transducer Calibration | -3.4 to 180 | 0.1 | Bar | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| P-63 | Sect 2 Transducer Span | -3.4 to 180 | 0.1 | Bar | | | 9.0 | | 30.0 | 30.0 | 30.0 |
| P-64 | Sect 2 Transducer Offset | -3.4 to 180 | 0.1 | Bar | | | -1.0 | | 0.0 | 0.0 | 0.0 |
| P-65 | Sect 2 Transducer Calibration | -3.4 to 180 | 0.1 | Bar | | | 0.0 | | 0.0 | 0.0 | 0.0 |
| P-70 | Sect 1 Inverter Output Enable | 0 = Off. 1 = On | 1 | - | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| P-71 | Sect 1 Inverter response | 0 to 100 | 1 | - | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| P-72 | Sect 2 Inverter Output Enable | 0 = Off. 1 = On | 1 | - | | | 0 | | 0 | 0 | 0 |
| P-73 | Sect 2 Inverter response | 0 to 100 | 1 | - | | | 5 | | 5 | 5 | 5 |
| P-80 | Sect 1 Transducer Type | 0 = 4-20mA. 1 = 0-10V | 1 | - | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| P-81 | Sect 2 Transducer Type | 0 = 4-20mA. 1 = 0-10V | 1 | - | | | 0 | | 0 | 0 | 0 |
| P-82 | Sect 1 Inverter Output Type | 0 = 4-20mA. 1 = 0-10V | 1 | - | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| P-83 | Sect 2 Inverter Output Type | 0 = 4-20mA. 1 = 0-10V | 1 | - | | | 0 | | 0 | 0 | 0 |
| dFLt | Restore Default Settings (Front panel Only) | | | | | | | | | | |

* Transducer Span and Offset allows for the full range of the transducer to be used by the controller.

Transducer Span is the full range of the transducer.
 Transducer Offset is the value below zero.

Example: Danfoss AKS 33 with range: -1 bar to 12 bar
 Span would be 13 bar
 Offset would be -1 bar

Transducer Calibration is used to calibrate the Controllers pressure reading to that of calibrated gauges.

Note. The controller uses absolute pressure; if gauge pressure is required, add +1 Bar to the offset value.



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Parameter Description

| Number | Parameter | Description |
|--------|-----------------------------------|---|
| P-01 | Section 1 Suction Setpoint | Pressure target, control will try to maintain this pressure |
| P-02 | Section 1 Suction Diff | Set point below the target. |
| P-05 | Section 1 Low Suction Setpoint | Pressure at which the backup controller becomes active and places the primary controller into standby (After delay expires) |
| P-06 | Section 1 Low Suction Delay | Delay before backup controller takes over after parameter P-05 pressure has been reached. |
| P-09 | Section 1 High Suction Setpoint | Pressure at which the backup controller becomes active and places the primary controller into standby (After delay expires) |
| P-10 | Section 1 High Suction Delay | Delay before backup controller takes over after parameter P-09 pressure has been reached |
| P-03 | Section 2 Suction Setpoint | Pressure target, control will try to maintain this pressure |
| P-04 | Section 2 Suction Diff | Set point below the target. |
| P-07 | Section 2 Low Suction Setpoint | Pressure at which the backup controller becomes active and places the primary controller into standby (After delay expires) |
| P-08 | Section 2 Low Suction Delay | Delay before backup controller takes over after parameter P-07 pressure has been reached. |
| P-11 | Section 2 High Suction Setpoint | Pressure at which the backup controller becomes active and places the primary controller into standby (After delay expires) |
| P-12 | Section 2 High Suction Delay | Delay before backup controller takes over after parameter P-11 pressure has been reached |
| P-20 | Section 1 Discharge Setpoint | Pressure target, control will try to maintain this pressure |
| P-21 | Section 1 Discharge Diff | Set point below the target. |
| P-22 | Section 2 Discharge Setpoint | Pressure target, control will try to maintain this pressure |
| P-23 | Section 2 Discharge Diff | Set point below the target. |
| P-24 | Section 1 High Discharge Setpoint | Pressure at which the backup controller becomes active and places the primary controller into standby (No delay) |
| P-25 | Section 2 High Discharge Setpoint | Pressure at which the backup controller becomes active and places the primary controller into standby (No delay) |
| P-30 | Section 1 On Delay | Delay between stages turning On |
| P-31 | Section 1 Off Delay | Delay between stages turning Off |
| P-32 | Section 2 On Delay | Delay between stages turning On |
| P-33 | Section 2 Off Delay | Delay between stages turning Off |
| P-40 | Section 1 Number of Relays | Number of stages in the system. See: Relay Assignment |
| P-41 | Section 2 Number of Relays | Number of stages in the system. See: Relay Assignment |
| P-50 | Section 1 Control Test | See: Test |
| P-51 | Section 2 Control Test | See : Test |
| P-60 | Section 1 Transducer Span | Range of the transducer |
| P-61 | Section 1 Transducer Offset | Transducer value below zero |
| P-62 | Section 1 Transducer Calibration | Used to calibrate the controllers pressure to that of calibrated gauges |
| P-63 | Section 2 Transducer Span | Range of the transducer |
| P-64 | Section 2 Transducer Offset | Transducer value below zero |
| P-65 | Section 2 Transducer Calibration | Used to calibrate the controllers pressure to that of calibrated gauges |
| P-70 | Section 1 Inverter Output Enable | Enables the inverter analogue output |
| P-71 | Section 1 Inverter response | Speed up/slow down stage On/Off speed |



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| | | |
|------|----------------------------------|--|
| P-72 | Section 2 Inverter Output Enable | Enables the inverter analogue output |
| P-73 | Section 2 Inverter response | Speed up/slow down stage On/Off speed |
| P-80 | Section 1 Transducer Type | Selects Transducer type 4-20mA or 0-10V |
| P-81 | Section 2 Transducer Type | Selects Transducer type 4-20mA or 0-10V |
| P-82 | Section 1 Inverter Output Type | Selects Inverter output type 4-20mA or 0-10V |
| P-83 | Section 2 Inverter Output Type | Selects Inverter output type 4-20mA or 0-10V |
| dFLt | Restore default values | Restores all of the parameters to their default values |

Relay Assignment

The number of relays used by each section is defined by the parameter "Number of relays" (P-40/41). This number includes the inverter enable relay, if used, the total number of compressor/fan stages required and the standby relay. (This differs from the Main RDM controller which does not have a backup relay per section)

Inverter Output Relay

If the parameter "Section 1 Inverter Output Enable" or "Section 2 Inverter Output Enable" is set to on then the first relay for each section will become the Inverter output enable relay. This relay is energised whenever the analogue Inverter output is active.

Standby Relay(s)

The standby relay is always the last relay in the total number of relays configured for each section. For example, if the controller is configured as an HT pack and condenser (type 7) with 3 compressors and a single inverter output on the condenser section then section 1 number of relays (P-40) would be set to 4, relays 1, 2 & 3 are assigned as compressor relays and the 4th relay would be the standby relay for section 1.

Section 2 stages would start on relay 5, which would be allocated as the fan inverter enable relay and relay 6 would be the standby relay for section 2, the number of relays on section 2 would be set to 2 (P-41).

The Standby relay is energised when the High Suction Setpoint or Low Suction Setpoint or Discharge Setpoint is reached and the relevant delay has expired. The Standby relay(s) is de-energised when control is returned to the primary pack/condenser controller.

Operation

Control Enabled

If the controller is set to a two section variant then section 1 and 2 can be enabled independently of each other and are active when the following conditions are met.

For a Pack section the input pressure is compared with the high limit and low limit parameters (P-05/07/09/11) together with the corresponding delay parameter (P-06/08/10/12). If the pressure is out with the high limit or low limit and the delay period has expired then the Intuitive Backup controller will enable the standby relay, placing the primary controller into standby and take control. When the primary pack controller is in standby and the pressure rises above the suction setpoint the first relay will turn on once the section on delay parameter expires (P-30/32). If the pressure remains above the suction setpoint and the section on delay expires for a second time then relay 2 will be turned on. As the pressure falls below the suction setpoint, including any diff, then the backup controller will begin to stage down, this results in relay 2 turning off after the parameter section off delay expires. If the pressure remains below the setpoint, including any diff and the section off delay expires then relay 1 will be turned off.

For a condenser section there is only a high limit with no delay. When the high limit is exceeded the controller takes control as above.

If the Inverter output is in use for a section then the Inverter output enable relay is energised and the analogue output is ramped up from 0 to 100% as soon as the pressure rises above the setpoint. Once the Inverter output reaches 100% then the section on delay timer will be initiated. Once the timer expires relay 2 is energised and the Inverter output resets to 0% where it then begins to ramp up to 100%. Once at 100% the section on delay timer is initiated again and once it expires relay 3 is energised and so forth. Once the pressure drops below setpoint, including any diff, the Inverter output begins to ramp down to 0%. Once at 0% the section off delay timer is initiated and when it expires relay 3 is turned off. The Inverter output then begins to ramp down from 100% and the process continues. The speed at which the Inverter output ramps up or down is governed by parameters P-71 and P-73.



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Control Disabled

The Intuitive backup controller is disabled and control returned to the primary controller when one of the following two conditions are met.

- i) The appropriate digital input Section 1 Reset or Section 2 Reset is activated and the pressure is within the predefined limits.

Or

- ii) The Intuitive Backup test feature has been enabled and the relevant conditions satisfied. Please see Test section for further details.

Test

When the Intuitive Backup controller is enabled and the primary pack/condenser controller is in standby the Intuitive Backup controller can be configured to test the primary controller after one hour. If this test is successful then the Intuitive Backup controller would bring the primary controller out of standby and return control to the primary controller.

Setting the Test Control parameter (P-50/51) to "On" will enable this feature. The Intuitive Backup controller will bring the primary pack/condenser controller out of standby and return control after 1 hour. At this point the Intuitive Backup controller will start checking for standby conditions. The test operation can be utilised again should the primary controller run normally for 12 hours after leaving standby. If standby conditions are encountered within 12 hours the Intuitive Backup controller will place the primary controller into standby and retake control. The test operation will not be repeated and the only way to return control to the primary controller is when the appropriate Section 1 Reset or Section 2 Reset is activated and the pressure is within the predefined limits. The test operation can be utilised again should once the reset input has been activated.



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Viewing Inputs and Outputs

The controller display can be used to view the status of the inputs and outputs.

1. From the function menu, select "IO", press enter
2. You can now scroll through the IO tables as set out below. The tables you view will depend on the controller type configuration.

Input/Output Tables

| Number | IO | Range | Units | LT Pack (Type 1) | HT Pack (Type 2) | HT & LT Pack (Type 3) | Condenser (Type 4) | Dual Condenser (Type 5) | LT Pack & Cond (Type 6) | HT Pack & Cond (Type 7) |
|-------------------|---------------------------|-----------------|-------|------------------|------------------|-----------------------|--------------------|-------------------------|-------------------------|-------------------------|
| I-01 | Section 1 4-20mA or 0-10V | -3.4 to 180 | Bar | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| I-02 | Section 2 4-20mA or 0-10V | -3.4 to 180 | Bar | | | ✓ | | ✓ | ✓ | ✓ |
| I-10 | Section 1 Reset input | 0 = Off, 1 = On | - | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| I-11 | Section 2 Reset input | 0 = Off, 1 = On | - | | | ✓ | | ✓ | ✓ | ✓ |
| O-01 ↓ O-12 | Relay 1 ↓ Relay 12 | 0 = Off, 1 = On | - | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| O-20 | Section 1 Variable output | 0 to 100 | % | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| O-21 | Section 2 Variable output | 0 to 100 | % | | | ✓ | | ✓ | ✓ | ✓ |
| S-01 | Section 1 Control state | 0 = Normal | - | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| S-02 | Section 2 Control state | 0 = Normal | - | | | ✓ | | ✓ | ✓ | ✓ |



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Specification

Power requirements

| | |
|------------------------|---|
| Supply Voltage Range | 24 Vac $\pm 10\%$ or 24 Vdc $\pm 10\%$ |
| Supply Frequency | 50 - 60 Hz $\pm 10\%$ |
| Maximum supply current | <1 Amp |
| Typical supply current | <1 Amp |
| Class 2 Insulation | No protective Earth is required. A functional earth can be connected if the equipment is located in an electrically noisy environment. |

Note : The use of centre tapped to earth transformers is not allowed. This is to prevent damage to the transformer and/or controller.

The host equipment must provide adequate protection against contact to hazardous live parts.

Warranty may be invalidated due to excess current being unlimited if there are no fuses/circuit breakers installed

General

| | |
|-----------------------------|---|
| Operating temperature range | -10°C to +60°C |
| Operating Humidity | 80% maximum |
| Storage temperature range | -20°C to +65°C |
| Environmental | Indoor use at altitudes up to 2000m, Pollution Degree 1, Installation Category II. Voltage fluctuations not to exceed $\pm 10\%$ of nominal voltage |
| Dimensions | Intuitive Plant Controller 280mm (L) x 122mm (W) x 67mm (H) |
| Weight | Intuitive Plant Controller 750 Grams |
| Safety | EN 61010-1:2010 |
| EMC | EN 61326-1:2013 |
| Ventilation | There is no requirement for forced cooling ventilation |

Inputs / Outputs

| | |
|--------------------|--|
| Digital Input type | |
| Status Input type | The preferred option is a 0 volt return through a volt free relay or 24 Vac referenced to the supply voltage. If a 24Vac signal is being sourced from the Intuitive controller power supply then do not ground the Status Input common rail, this is grounded internally. |
| 4-20mA | 4-20mA current loop, use the 12 Vdc output to feed the device (28mA Maximum) |
| Analogue Outputs | 0 to 10 Volts DC or 0/4-20mA, Selected in the Front Panel Menu. A 50mA fuse is recommended for each Analogue output. The 4-20mA output will not operate correctly if the target device input impedance is $> 75\Omega$ The 0-10v output will not operate correctly if the target device input impedance is $< 10K\Omega$ |



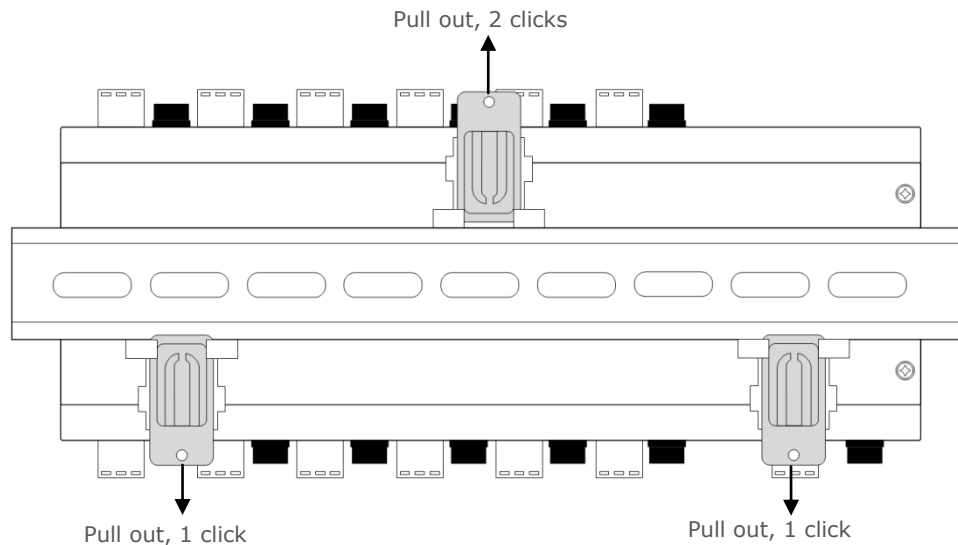
Please ensure all power is switched off before installing or maintaining this product.

Relay Ratings

| | |
|--------|--|
| Relays | 10A/250 Vac/AC1 (Resistive load) 10A/30 Vdc (Resistive load) 5A/250 Vac $\cos\phi=0.4$ |
| Fuses | Relay Fuses 10A Antisurge HRC, 32 x 6.3mm Supply Fuse 2A Antisurge HRC, 32 x 6.3mm |

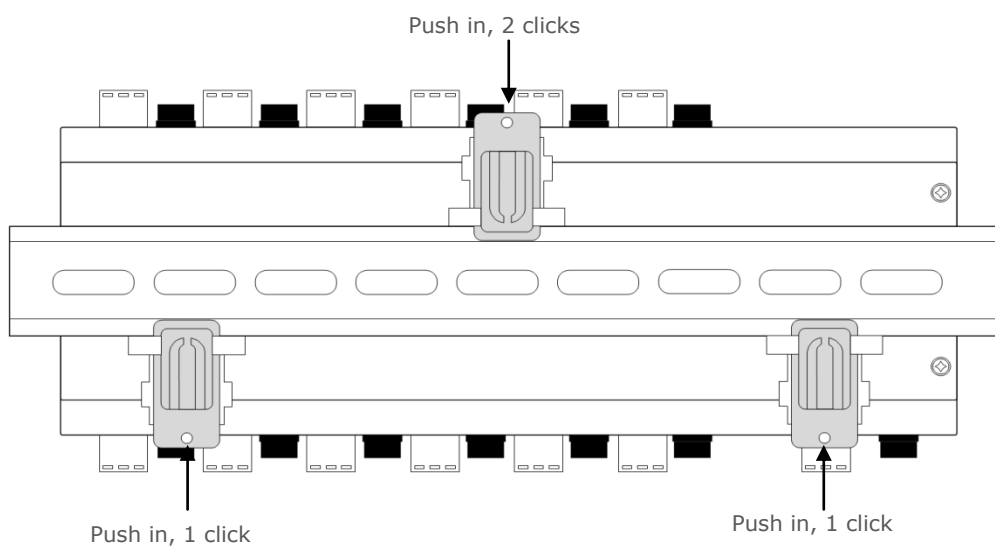
Installation

Mounting on to a DIN rail, Intuitive Plant Controller



The Intuitive plant controller has three DIN rail mounting feet which can slide in and out to three different positions, sliding into each position is accompanied by a “click” which locks the foot into that position.

To install the controller onto a DIN mounting rail, from the fully pushed in position slide the top mounting foot out by 2 clicks so that the foot is clear of the DIN rail channel. Slide the bottom two feet out by one click so that they are protruding slightly into the DIN rail channel. The controller can now be inserted onto the DIN rail by inserting the bottom lip of the DIN rail behind the two bottom mounting feet



The controller can now be pushed flat onto the DIN rail and the top foot pushed in 2 clicks to hold the controller in place. Finally, push the bottom two feet in by one click to secure the controller.

The mounting feet also have M3 holes for direct mounting where DIN rail is not being used.



Please ensure all power is switched off before installing or maintaining this product.

Clearances

The controller must have 10mm clearance above the top and 15mm clearance from the sides. Clearance at the front and rear is dependent on the site wiring.

There is no requirement for forced cooling ventilation

Cleaning

Do not wet the controller when cleaning. Clean the front by wiping with a slightly dampened lint free cloth.

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Revision History

| Revision | Date | Changes |
|----------|------------|--------------|
| 4.0 | 11/05/2021 | New Hardware |



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