

APPLICATIONS

The Default Application

The drive is supplied with 6 Applications, Application 0 to Application 5. Each Application recalls a pre-programmed structure of internal links when it is loaded.

DEFAULT

- Application 0 will not control a motor. Loading Application 0 removes all internal links.
- Application 1 is the factory default application, providing for basic speed control
- Application 2 supplies speed control using a manual or auto setpoint
- Application 3 supplies speed control using preset speeds
- Application 4 is a set-up providing speed control with Raise/Lower Trim
- Application 5 supplies speed control with Run Forward/Run Reverse

IMPORTANT: Refer to Chapter 5: The Keypad – Special Menu Features to reset the drive to factory default values which are suitable for most applications.

How to Load an Application

In the **PRF** menu, go to **P I** and press the **M** key twice.

The Applications are stored in this menu.

Use the **▲** **▼** keys to select the appropriate Application by number.

Press the **E** key to load the Application.

Application Description

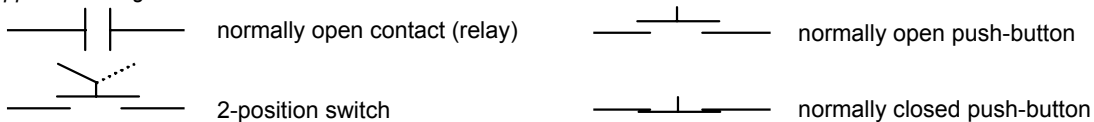
Control Wiring for Applications

The large Application Diagrams on the following pages show the full wiring for push-button starting. The diagrams on the reverse show the full wiring for single wire starting.

For the minimum connections to make the drive run refer to Chapter 3: "Installing the Drive" - Electrical Installation; the remaining connections can be made to suit your system.

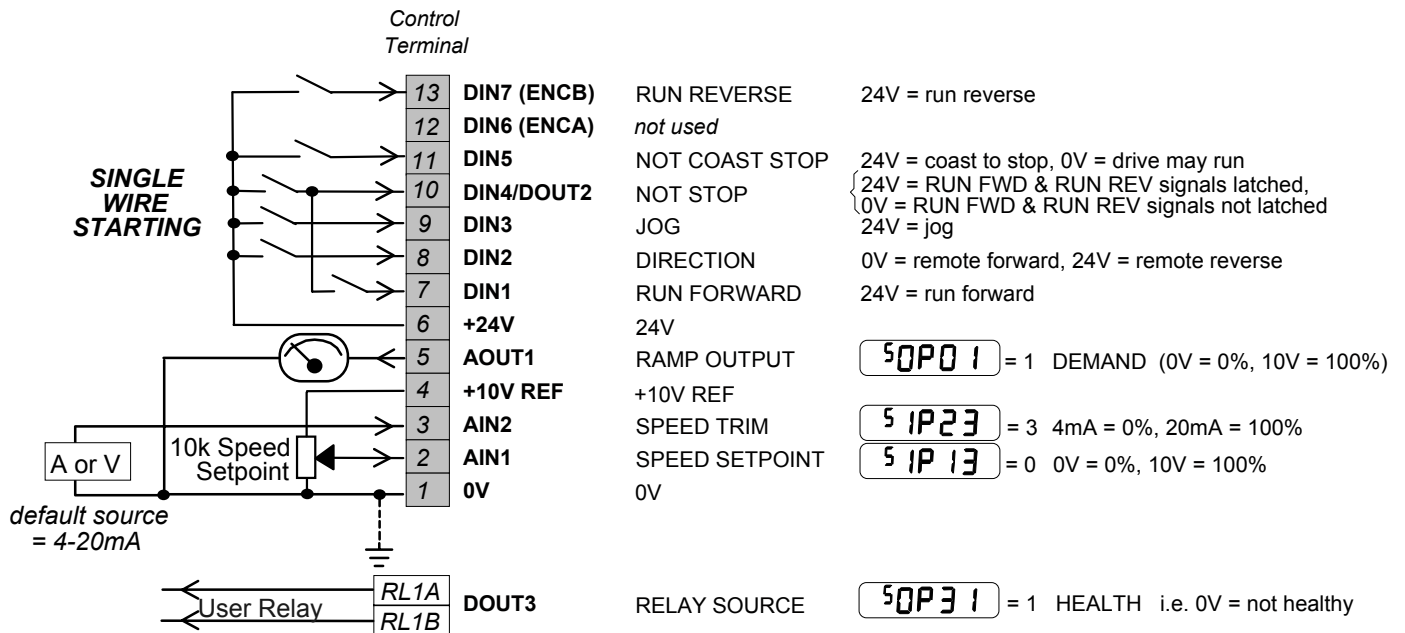
When you load an Application, the input and output parameters shown in these diagrams default to the settings shown. For alternative user-settings refer to the Software Product Manual, Chapter 1 "Programming Your Application".

Key to Application Diagrams



Application 1: Basic Speed Control (default)

This Application is ideal for general purpose applications. It provides push-button or switched start/stop control. The setpoint is the sum of the two analogue inputs AIN1 and AIN2, providing Speed Setpoint + Speed Trim capability.



Application 2: Auto/Manual

IDEAL FOR AUTOMATIC CONTROL APPLICATIONS WITH LIMIT SWITCHES OR PROXIMITY TRANSDUCERS

P 1 = 2

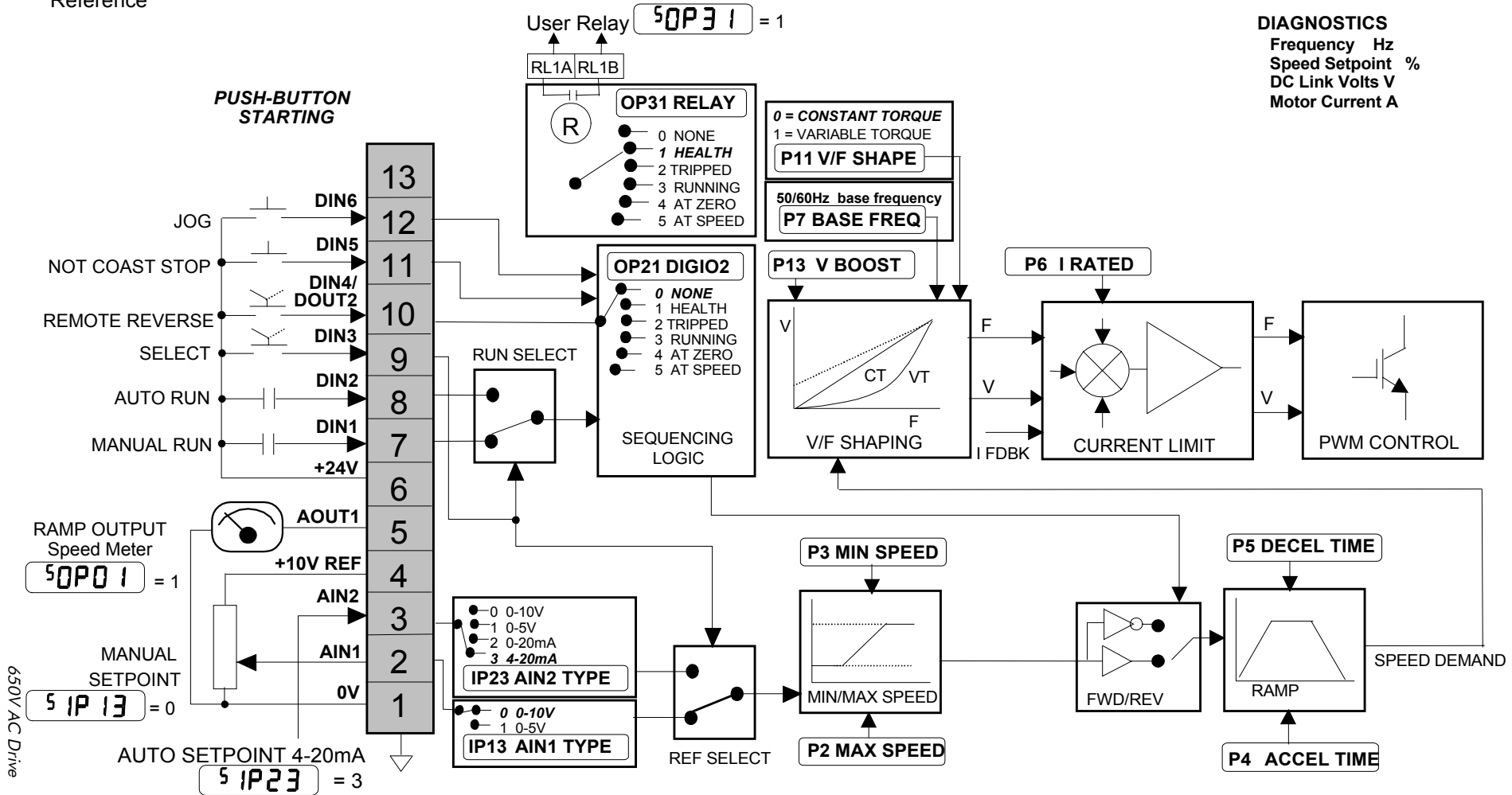
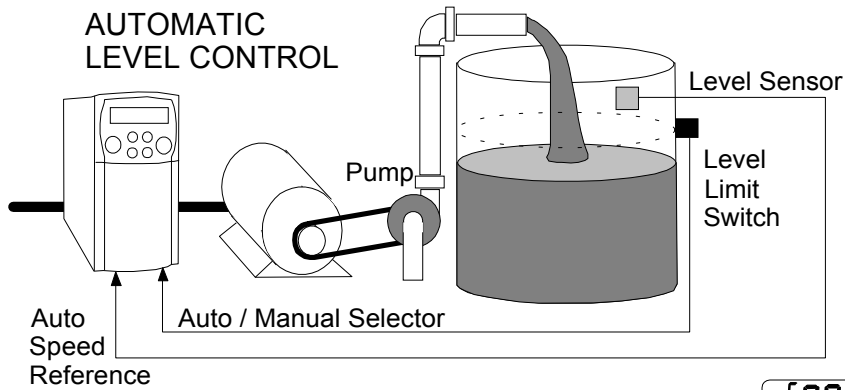
Italic text indicates Default

STANDARD PARAMETERS

- p1 Application
- p2 Max speed
- p3 Min speed
- p4 Accel time
- p5 Decel time
- p6 Motor current
- p7 Base frequency
- p8 Jog setpoint
- p9 Run stop mode
- p11 V/F shape
- p12 Normal duty
- p13 Fixed boost, (VF only)
- p99 Password

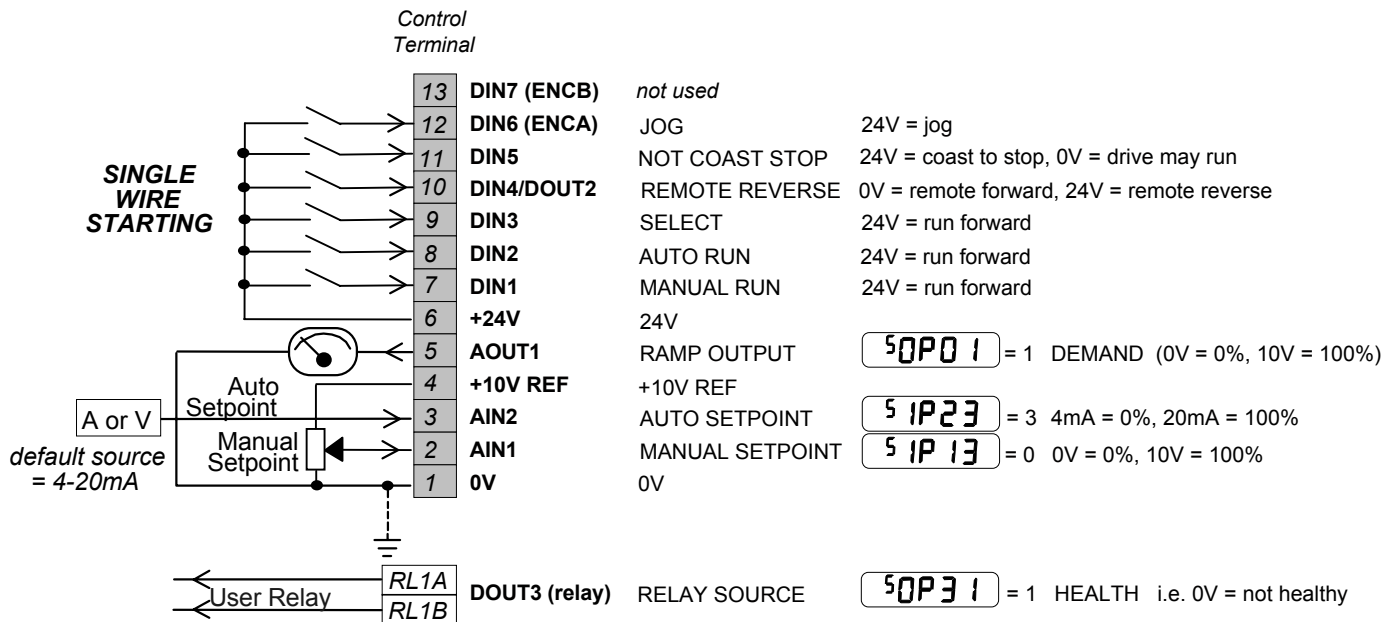
DIAGNOSTICS

- Frequency Hz
- Speed Setpoint %
- DC Link Volts V
- Motor Current A



Application 2: Auto/Manual Control

Two Run inputs and two Setpoint inputs are provided. The Auto/Manual switch selects which pair of inputs is active. The Application is sometimes referred to as Local/Remote.



Application 3: Preset Speeds

IDEAL FOR APPLICATIONS REQUIRING MULTIPLE DISCRETE SPEED LEVELS

$$P \quad | \quad = 3$$

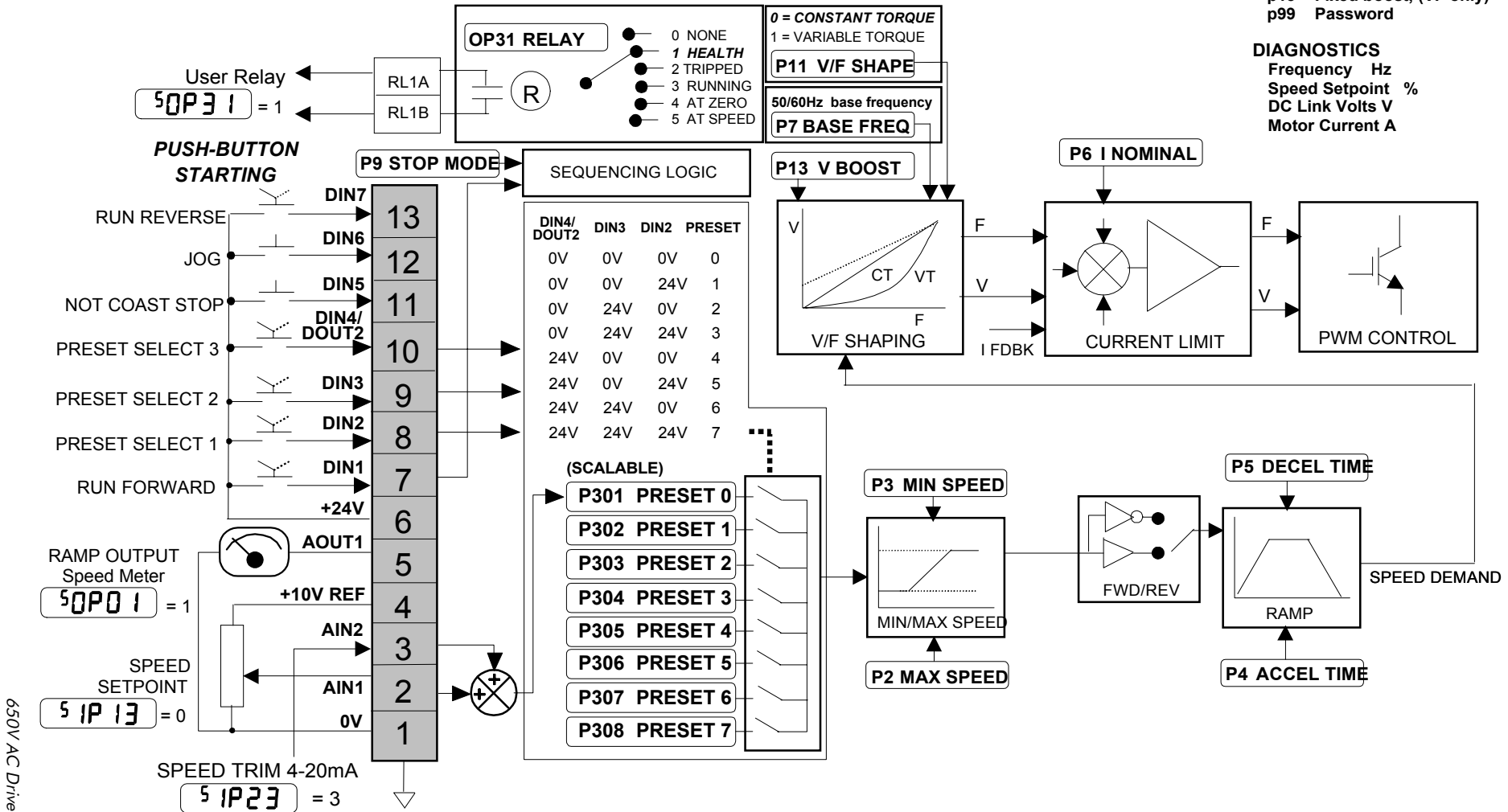
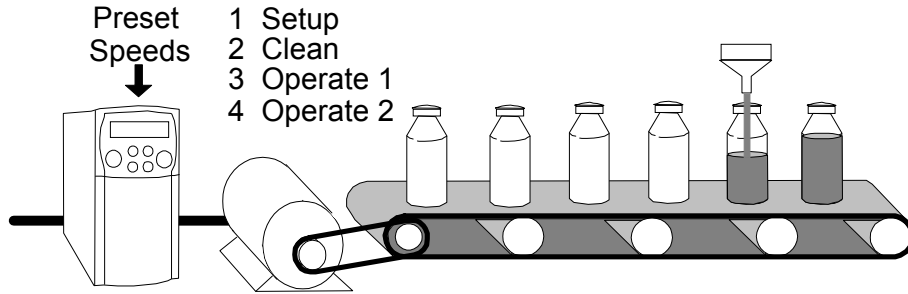
Italic text indicates Default

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- p13 Fixed boost, (VF only)
- p99 Password

DIAGNOSTICS

- Frequency Hz
- Speed Setpoint %
- DC Link Volts V
- Motor Current A

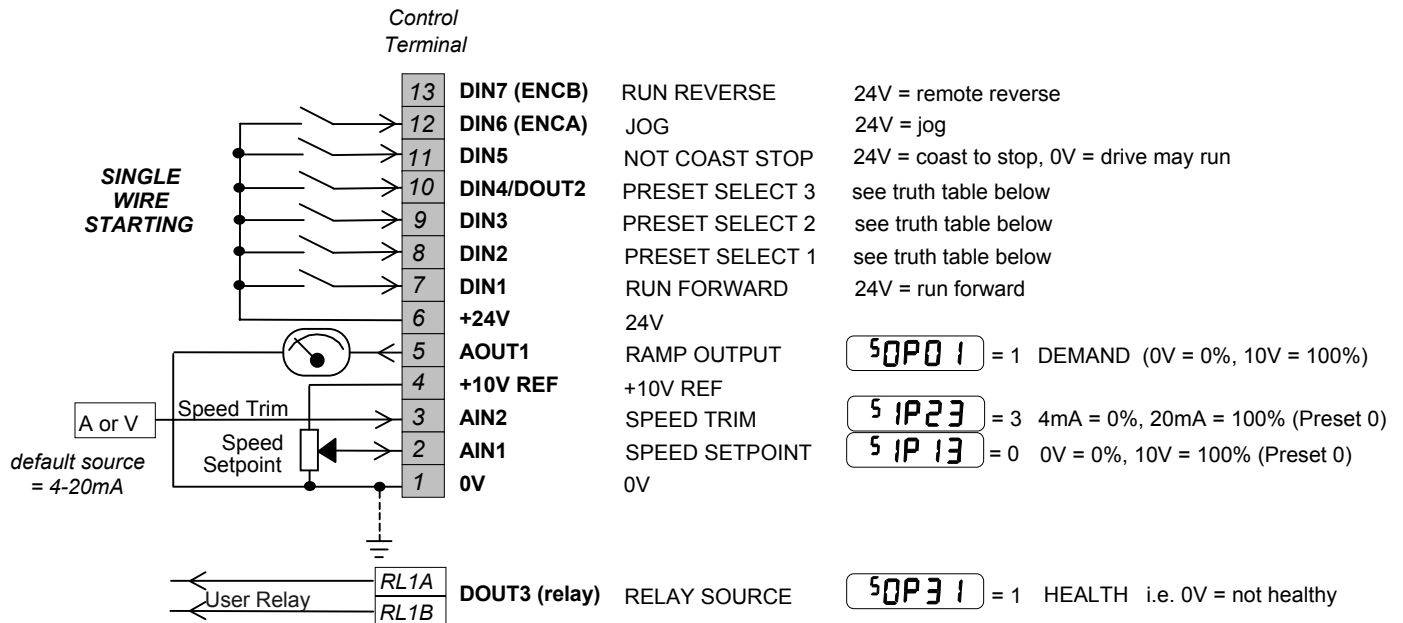


Application 3: Preset Speeds

This is ideal for applications requiring multiple discrete speed levels.

The setpoint is selected from either the sum of the analogue inputs, (as in Application 1 and known here as PRESET 0), or as one of up to seven other pre-defined speed levels. These are selected using DIN2, DIN3 and DIN4, refer to the Truth Table below.

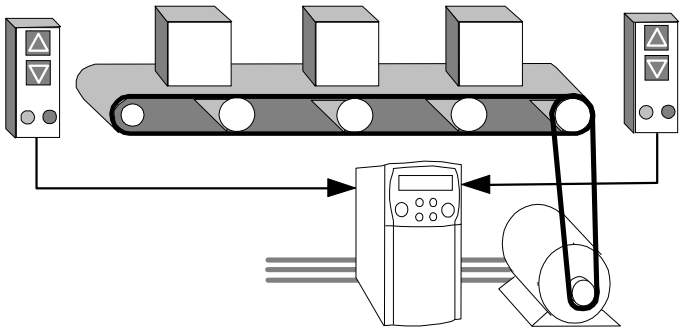
Edit parameters P_{302} to P_{308} on the keypad to re-define the speed levels of PRESET 1 to PRESET 7. Reverse direction is achieved by entering a negative speed setpoint.



Preset Speed Truth Table

| DIN4/DOU2 | DIN3 | DIN2 | Preset |
|-----------|------|------|----------|
| 0V | 0V | 0V | 0 |
| 0V | 0V | 24V | 1 |
| 0V | 24V | 0V | 2 |
| 0V | 24V | 24V | 3 |
| 24V | 0V | 0V | 4 |
| 24V | 0V | 24V | 5 |
| 24V | 24V | 0V | 6 |
| 24V | 24V | 24V | 7 |

Application 4 : Raise/Lower Trim



Application 4: Raise/Lower Trim

IDEAL FOR APPLICATIONS REQUIRING
SPEED CONTROL FROM MULTIPLE LOCATIONS

P 1 = 4

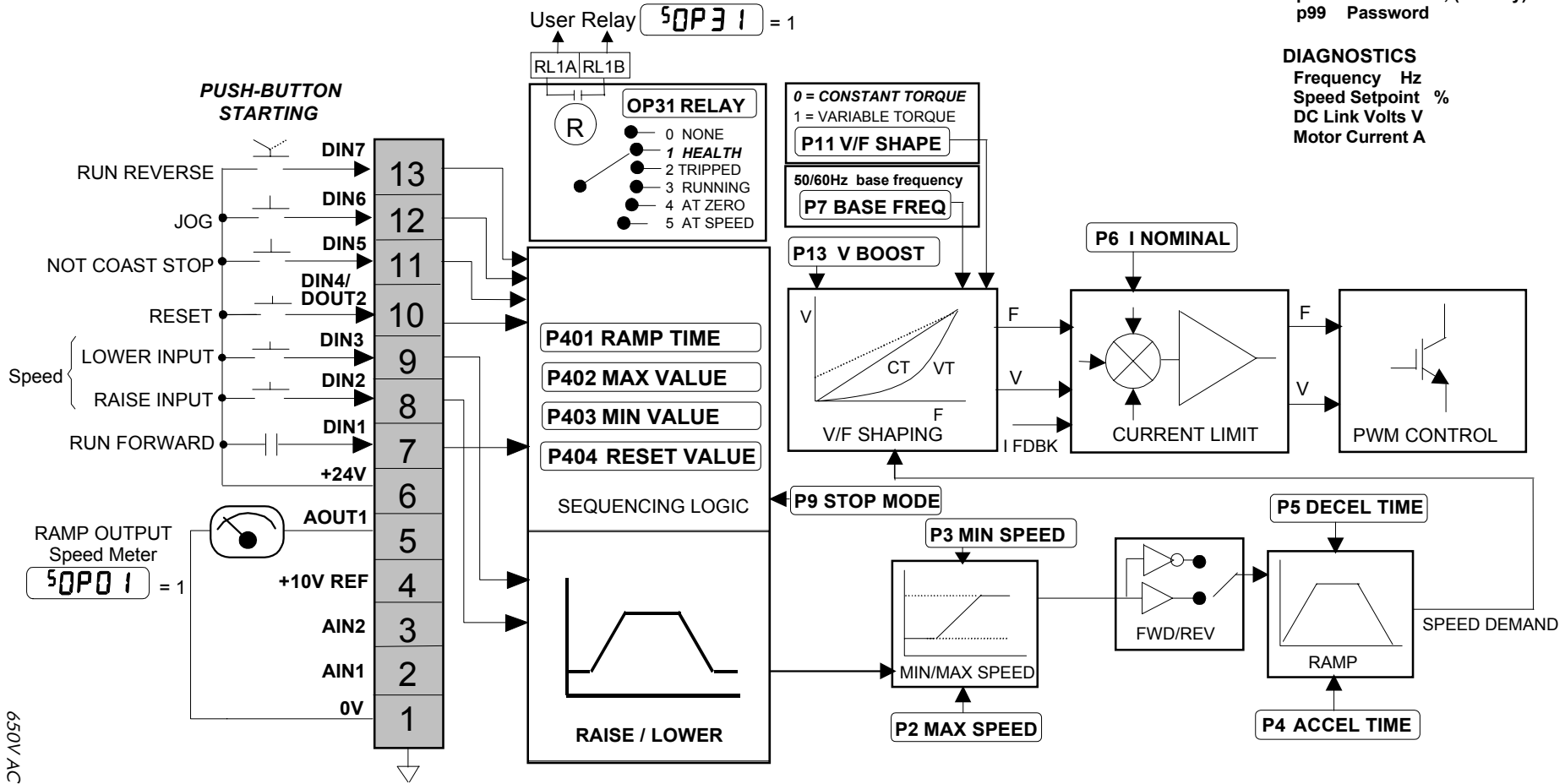
Italic text indicates Default

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DIAGNOSTICS

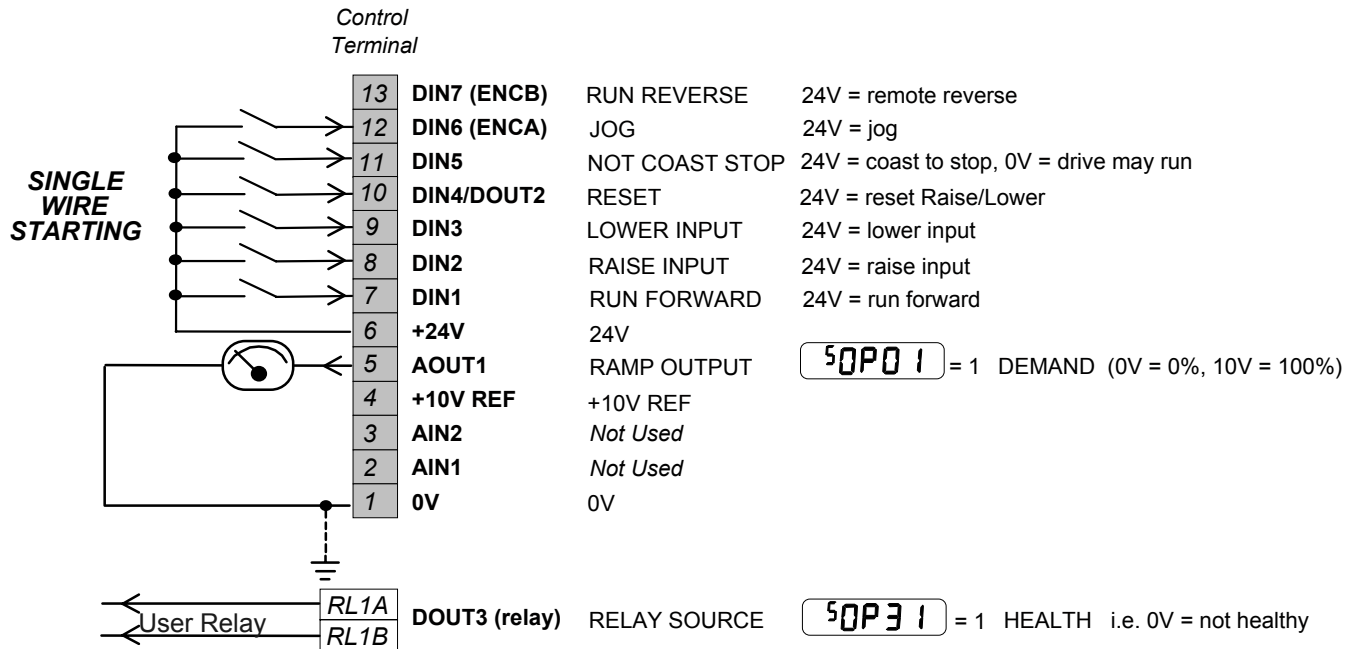
- Frequency Hz
- Speed Setpoint %
- DC Link Volts V
- Motor Current A

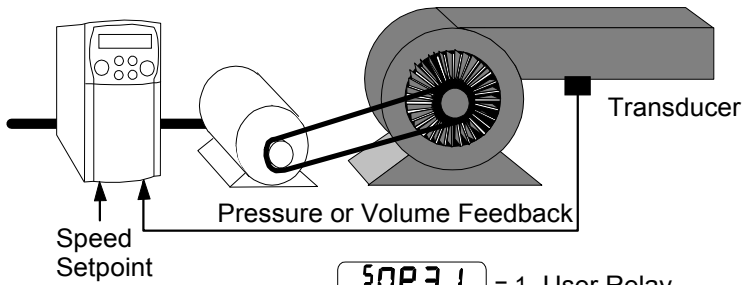


Application 4: Raise/Lower Trim

This Application mimics the operation of a motorised potentiometer. Digital inputs allow the setpoint to be increased and decreased between limits. The limits and ramp rate can be set using the keypad.

The Application is sometimes referred to as Motorised Potentiometer.





Application 5: PI Control

EASY TUNING FOR SETPOINT/FEEDBACK CONTROL
APPLICATIONS REGULATING VOLUME OR PRESSURE,
SUCH AS AIR HANDLING OR PUMPING

P I = 5

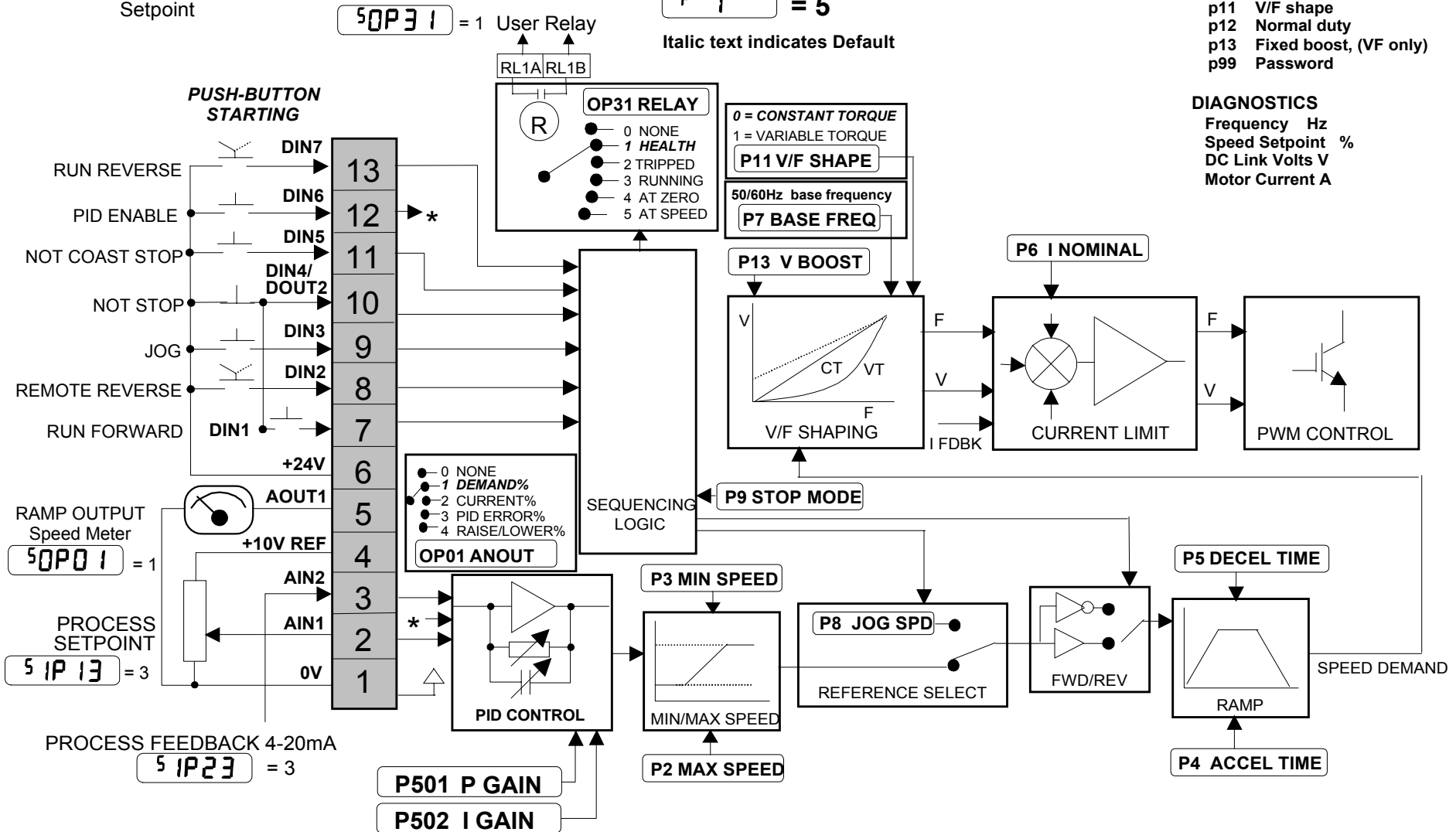
Italic text indicates Default

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Application 5: PID

A simple application using a Proportional-Integral-Derivative 3-term controller. The setpoint is taken from AIN1, with feedback signal from the process on AIN2. The scale and offset features of the analogue input blocks may be used to correctly scale these signals. The difference between these two signals is taken as the PID error. The output of the PID block is then used as the drive setpoint.

