

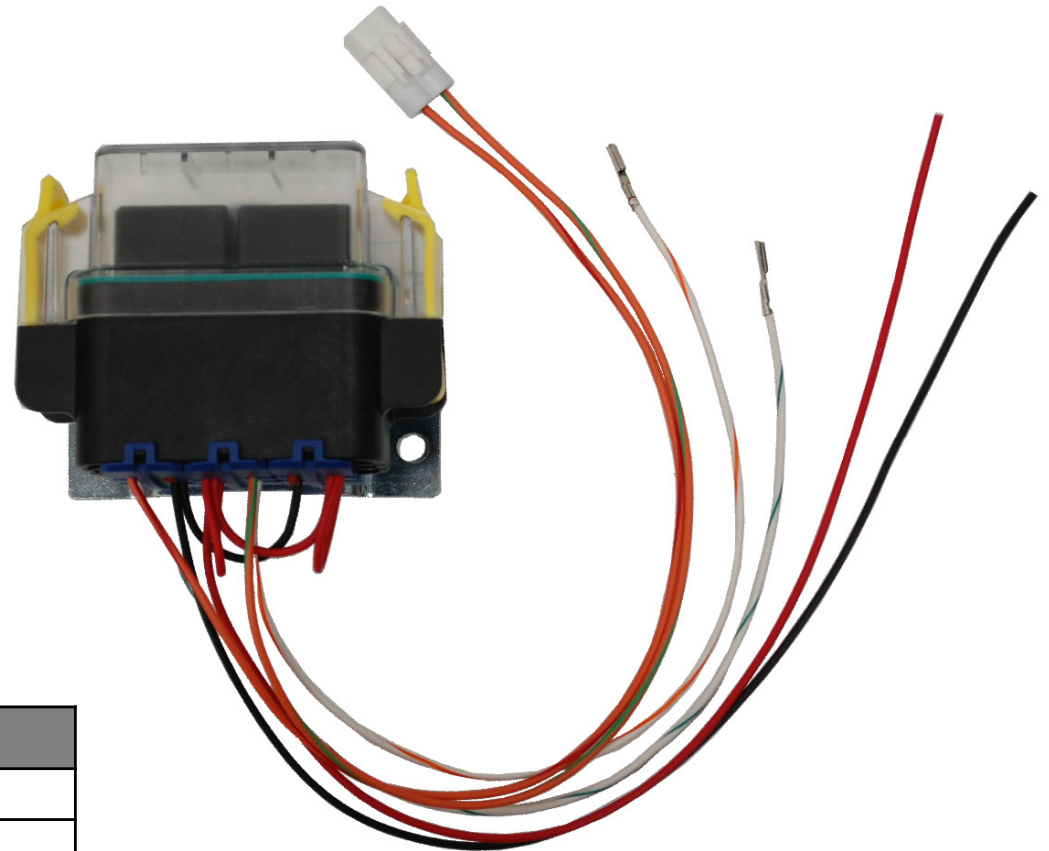
Microprint Moveable Stack Relay Kit & Harness

Description:

The Microprint Moveable Stack Relay Kit is a pre-wired relay center to be used with the PE3 ECU series. This kit is designed to work with the GUHL Yamaha and Stackzuki Throttle Body Injection Systems acting as an H-Bridge to reverse polarity for Up and Down velocity stack movement.

Uses:

This Kit is used to move the velocity stacks up and down based on user adjustable RPM values. The relay center is controlled with two digital outputs from the PE3.



Wire Color

Connection Details

| Wire Color | Connection Details |
|--------------------------|--|
| Red 20ga | Switched +12v |
| Black 20ga | Battery Ground |
| White/Green 20ga | Digital Output #5 (JAE Sockets Populated) |
| White/Orange 20ga | Digital Output #6 (JAE Sockets Populated) |
| Orange/Red 20ga | White 2-pin Sumitomo connector plugs into Guhl stack motor |
| Orange/Green 20ga | |

For Technical assistance, please email PE at Support@pe-ltd.com



AN506– Application Note

Microsprint Moveable Stack Relay Kit & Harness P/N 99002016-00

Release Date 4/26/2019

PE3-8400 ECU SETUP Using PWM Tables

Digital Output PWM #5 (Stacks Up) Setup in the 'Set Point' Tab

| State | Offline |
|----------------|---------|
| Time | -- |
| RPM | -- |
| PWM Duty Cycle | -- |
| PWM Frequency | -- |

| Y Axis (RPM) | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|--------------|-------|-------|-------|-------|-------|-------|-------|-----|
| 13000 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 0.0 |
| 12714 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 0.0 |
| 12429 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 0.0 |
| 12143 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 0.0 |
| 11857 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 0.0 |
| 11571 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 0.0 |
| 11286 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 0.0 |
| 11000 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 0.0 |

| X Axis (Time) | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---------------|------|------|------|------|------|------|------|---|
| 0.00 | 0.16 | 0.33 | 0.50 | 0.66 | 0.83 | 0.99 | 1.00 | |

When Stacks are activated Up or Down, this configuration only applies power for a period of 1 second.

Digital Output PWM #6 (Stacks Down) Setup in the 'Set Point' Tab

| State | Offline |
|----------------|---------|
| Time | -- |
| RPM | -- |
| PWM Duty Cycle | -- |
| PWM Frequency | -- |

| Y Axis (RPM) | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|--------------|-------|-------|-------|-------|-------|-------|-------|-----|
| 13000 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 0.0 |
| 12714 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 0.0 |
| 12429 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 0.0 |
| 12143 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 0.0 |
| 11857 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 0.0 |
| 11571 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 0.0 |
| 11286 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 0.0 |
| 11000 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 0.0 |

| X Axis (Time) | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---------------|------|------|------|------|------|------|------|---|
| 0.00 | 0.16 | 0.33 | 0.50 | 0.66 | 0.83 | 0.99 | 1.00 | |



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PE3-8400 ECU SETUP Using PWM Tables

Digital Output PWM #5
(Stacks Up) Setup in the
'Advanced' Tab

Digital Output #5 (Stack UP) - PWM Table

Enable

| State | Offline |
|----------------|---------|
| Time | -- |
| RPM | -- |
| PWM Duty Cycle | -- |
| PWM Frequency | -- |
| | |
| | |
| | |
| | |

Configure PWM Frequency In:
- Tuning
- Digital Outputs
- On/Off Control

Set Point | **Advanced** | Closed Loop

Some PWM outputs require arm/start conditions. (i.e. Nitrous Control)

Arm Condition: Ignore

Start Condition: RPM Greater Than 12000.0

Disable PWM Value: 0.0

Digital Output PWM #6
(Stacks Down) Setup in
the 'Advanced' Tab

Digital Output #6 (Stack DN) - PWM Table

Enable

| State | Offline |
|----------------|---------|
| Time | -- |
| RPM | -- |
| PWM Duty Cycle | -- |
| PWM Frequency | -- |
| | |
| | |
| | |
| | |

Configure PWM Frequency In:
- Tuning
- Digital Outputs
- On/Off Control

Set Point | **Advanced** | Closed Loop

Some PWM outputs require arm/start conditions. (i.e. Nitrous Control)

Arm Condition: Ignore

Start Condition: RPM Less Than 11900

Disable PWM Value: 0.0

With this configuration,
stacks will move up at
12,000rpm. Stacks will
move down at
11,900rpm. The user
can adjust these values
to change when the
stacks move up or
down.