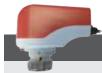
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PA24-27 — Submittal/Technical Data

04/05/20

27 lb-force — Non-Fail Safe — On/Off and Floating

Specifications: For Simple Set PIC Valve sizes 1/2" to 1-1/4"

Power Supply Operating Voltage 22 to 26 AC/DC

Power Consumption 5 VA

Control Signal/Input Signal Digital, 2 positions or 3 point floating

Input Impedance 4.7 K

Run Time 120 Seconds

Direction Reversible. Default - Up to Open

Stall Protection Auto Shutoff for end of travel and jammed/stuck

Enclosure Rating IP54 (Equivalent to NEMA 3R) - Not intended for outdoor use without additional protection.

Manual Override Yes

Ambient Conditions Ambient Temperature

Operating 36°F to 122°F (2°C to 50°C)

Media Temperature 36°F to 248°F (2°C to 120°C)

Storage -22 to 122°F (-30 to 50°C)

Humidity Rating 5 to 95% RH Non Condensing

Connection 3-wire halogen free cable 18 AWG (0.8 mm2), 3.2 feet (1M) long)

Life Cycle 30,000 Audible Noise Rating >35 dBA

Agency Certification cULus, cCSAus, CE

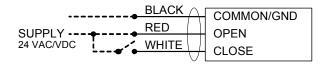
Dimensions (L) 4.09"x (W) 2.08"x (H) 3.62

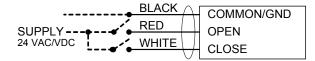
Weight 0.9 lb. (0.4 kg)

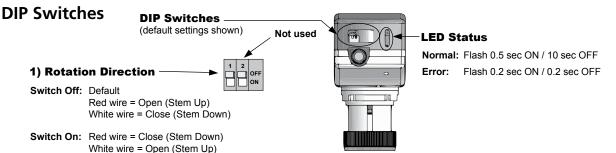
Wiring: (Cable)

PA24-27 On/Off, Non-Failsafe

PA24-27 Floating, Non-Failsafe







NOTE: For additional operating information consult PA24-27 Operation Manual. The performance specifications are nominal and conform to acceptable industry standards. For application at conditions beyond these specifications, consult the nearest Bray office. Bray controls shall not be liable for damages resulting from misapplication or misuse of its products.

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PA24-27-FS — Submittal/Technical Data

04/05/20

27 lb-force — Fail Safe — On/Off and Floating

Specifications: For Simple Set PIC Valve sizes 1/2" to 1-1/4"

Power Supply Operating Voltage 22 to 26 AC/DC

Power Consumption 10 VA

Control Signal/Input Signal Digital, 2 positions or 3 point floating

Input Impedance 4.7 K
Run Time 120 Seconds
Fail Safe Runtime 60 Seconds

Fail Safe Function Electronic - Enerdrive¹

Direction Reversible. Default - Up to Open

Stall Protection Auto Shutoff for end of travel and jammed/stuck

Enclosure Rating IP54 (Equivalent to NEMA 3R) - Not intended for outdoor use without additional protection.

Manual Override Yes

Ambient Conditions Ambient Temperature

Operating 36°F to 122°F (2°C to 50°C)

Media Temperature 36°F to 248°F (2°C to 120°C)

Storage -22 to 122°F (-30 to 50°C)

Humidity Rating 5 to 95% RH Non Condensing

Connection 4-wire halogen free cable 18 AWG (0.8 mm2), 3.2 feet (1M) long)

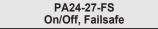
Life Cycle 30,000 Audible Noise Rating >35 dBA

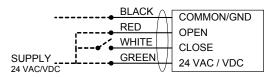
Agency Certification cULus, cCSAus, CE

Dimensions (L) 4.09"x (W) 2.08"x (H) 3.62

Weight 0.9 lb. (0.4 kg)

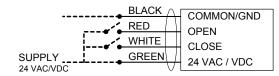
Wiring: (Cable)





OFF

PA24-27-FS Floating, Failsafe



DIP Switches

DIP Switches (default settings shown)

2) Failsafe Direction

2) Falisale Direction

Switch Off: Valve Normally Open (Stem Up)

Switch On: Valve Normally Closed (Stem Down)

ed O

LED Status

Normal: Flash 0.5 sec ON / 10 sec OFF Error: Flash 0.2 sec ON / 0.2 sec OFF

Failsafe Operation: OFF

1) Rotation Direction

Switch Off: Default

Red wire = Open (Stem Up) White wire = Close (Stem Down)

Switch On: Red wire = Close (Stem Down)

White wire = Open (Stem Up)

NOTE:

1 The Enerdrive system is a patented method of storing energy (using super capacitors) that is later used to drive the actuator to it failsafe position during a power failure.

For additional operating information consult PA24-27-FS Operation Manual. The performance specifications are nominal and conform to acceptable industry standards. For application at conditions beyond these specifications, consult the nearest Bray office. Bray controls shall not be liable for damages resulting from misapplication or misuse of its products.



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PAM24-27 — Submittal/Technical Data

04/05/20

27 lb-force — Non-Fail Safe — Modulating

Specifications: For Simple Set PIC Valve sizes 1/2" to 1-1/4"

Power Supply Operating Voltage 22 to 26 AC/DC

> **Power Consumption** 5 VA

Control Signal/Input Signal Analog, 0-10VDC or 2-10VDC; 4-20mA with external 500 Ω resistor

0-10VDC or 2-10VDC Feedback Signal

Input Impedance 10.0 K Run Time 120 Seconds

Direction Reversible. Default - Up to Open

Stall Protection Auto Shutoff for end of travel and jammed/stuck

Auto Stroke

Enclosure Rating IP54 (Equivalent to NEMA 3R) - Not intended for outdoor use without additional protection.

Manual Override Yes

Ambient Conditions **Ambient Temperature**

> 36°F to 122°F (2°C to 50°C) Operating Media Temperature 36°F to 248°F (2°C to 120°C) -22 to 122°F (-30 to 50°C) Storage **Humidity Rating** 5 to 95% RH Non Condensing

Connection 4-wire halogen free cable 18 AWG (0.8 mm2), 3.2 feet (1M) long)

30,000 Life Cycle **Audible Noise Rating** >35 dBA

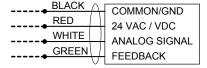
Agency Certification cULus, cCSAus, CE

Dimensions (L) 4.09"x (W) 2.08"x (H) 3.62

Weight 0.9 lb. (0.4 kg)

Wiring: (Cable)

PAM24-27 Modulating, Non-Failsafe



DIP Switches

(default settings shown) 1) Rotation Direction

Switch Off: Default

Valve Open

(Stem Up) - (0 VDC)

Switch On: Valve Closed

(Stem Down) - (0 VDC)

2) Anti-Stick System

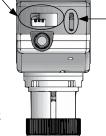
Switch Off: Deactivated Switch On: Activated

3) Input Analog -

DIP Switches

Signal & Feedback

Switch Off: 2-10 VDC Switch On: 0-10 VDC



LED Status

Flash 0.5 sec ON / 10 sec OFF Normal: Error: Flash 0.2 sec ON / 0.2 sec OFF

Auto stroke: Continuous ON

NOTE: For additional operating information consult PAM24-27 Operation Manual. The performance specifications are nominal and conform to acceptable industry standards. For application at conditions beyond these specifications, consult the nearest Bray office. Bray controls shall not be liable for damages resulting from misapplication or misuse of its products.



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04/05/20

27 lb-force — Fail Safe — Modulating

Specifications: For Simple Set PIC Valve sizes 1/2" to 1-1/4"

Power Supply Operating Voltage 22 to 26 AC/DC

Power Consumption 10 VA

Control Signal/Input Signal Analog, 0-10VDC or 2-10VDC; 4-20mA with external 500Ω resistor

Feedback Signal 0-10VDC or 2-10VDC

Input Impedance 100 K
Run Time 120 Seconds
Fail Safe Runtime 60 Seconds

Fail Safe Function Electronic - Enerdrive¹

Direction Reversible. Default - Up to Open

Stall Protection Auto Shutoff for end of travel and jammed/stuck

Auto Stroke Yes

Enclosure Rating IP54 (Equivalent to NEMA 3R) - Not intended for outdoor use without additional protection.

Manual Override Yes

Ambient Conditions Ambient Temperature

Operating 36°F to 122°F (2°C to 50°C)

Media Temperature 36°F to 248°F (2°C to 120°C)

Storage -22 to 122°F (-30 to 50°C)

Humidity Rating 5 to 95% RH Non Condensing

Connection 4-wire halogen free cable 18 AWG (0.8 mm2), 3.2 feet (1M) long)

Life Cycle 30,000 Audible Noise Rating >30dBA

Agency Certification cULus, cCSAus, CE

Dimensions (L) 4.09"x (W) 2.08"x (H) 4.18

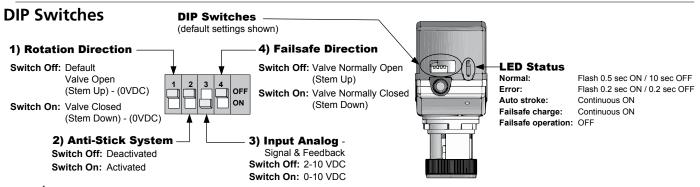
Weight 0.9 lb. (0.4 kg)

Wiring: (Cable)

PAM24-27-FS Modulating, Failsafe

FAILSAFE CONTROLED BY DIP SWITCHES

BLACK COMMON/GND
RED 24 VAC / VDC
WHITE ANALOG SIGNAL
FEEDBACK



NOTE:

The Enerdrive system is a patented method of storing energy (using super capacitors) that is later used to drive the actuator to it failsafe position during a power failure.

For additional operating information consult PAM24-27-FS Operation Manual. The performance specifications are nominal and conform to acceptable industry standards. For application at conditions beyond these specifications, consult the nearest Bray office. Bray controls shall not be liable for damages resulting from misapplication or misuse of its products.



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PAM24-100 — Submittal/Technical Data

04/21/20

100 lb-force — Non-Fail Safe — On/Off, Floating & Modulating

Specifications: For Simple Set PIC Valve sizes 1-1/2" to 2"

Power Supply Operating Voltage 22 to 26VAC / 28 to 32 VDC

Power Consumption 6 VA

Control Signal 2 Position On/Off (Digital-Pulse Width Modulation),

3 Point Floating, Modulating (Analog), 2-10VDC; 4-20mA

Feedback Signal 4 to 20 mA or 2 to 10 VDC adjustable (factory set 2-10 VDC)

Input Impedance 100 K
Run Time 90 Seconds

Force 100 lb. [450 N] at rated voltage Direction Reversible, Up to Open - Default

Stall Protection Auto Shutoff for end of travel and jammed/stuck

Auto Stroke Yes

Enclosure Rating NEMA Type 2 - Not intended for outdoor use without additional protection.

Manual Override Yes

Ambient Conditions Operating 0°F to 122°F (-18°C to 50°C)

Storage -22° to 122°F (-30° to 50°C) Humidity Rating 5 to 95% RH Non Condensing

Connection Terminal Connection. Use 18AWG [0.8mm2] minimum

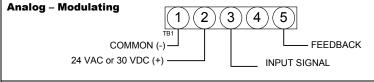
Life Cycle 60,000 Audible Noise Rating <35 dBA

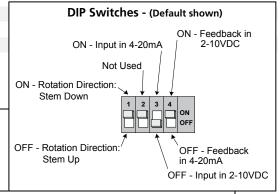
Agency Certification cULus, cCSAus, CE

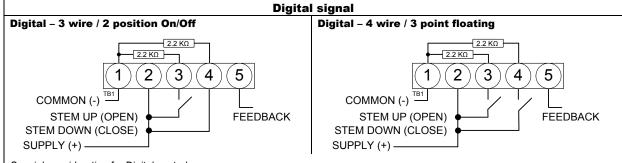
Dimensions (L) 4.80"x (W) 3.60"x (H) 6.93

Weight 2.0 lb. (0.9 kg)

Wiring: (Terminal)







Special consideration for Digital control

In this mode, the actuator is sensitive to induced electrical voltages **from external sources**. To prevent such interference, if the signal on pins 4 and 3 on TB1 are from an **external 24 VAC source**, install a resistor 2.2kohm, 0.5W between pins 4 and 1 and another of 2.2kohms, 0.5W between pins 3 and 1 of TB1. These resistors are included.

NOTE: For additional operating information consult PAM24-100 Operation Manual. The performance specifications are nominal and conform to acceptable industry standards. For application at conditions beyond these specifications, consult the nearest Bray office. Bray controls shall not be liable for damages resulting from misapplication or misuse of its products.



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DIP Switches - (Default shown)

in 4-20mA

OFF - Input in 2-10VDC

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PAM24-100-FS — Submittal/Technical Data

04/21/20

100 lb-force — Fail Safe — On/Off, Floating & Modulating

Specifications: For Simple Set PIC Valve sizes 1-1/2" to 2"

Power Supply	Operating Voltage	ge 22 to 26VAC / 28 to 32 VDC	
	Power Consumption	6VA, 20VA Start Up	
Control Signal		2 Position On/Off (Digital-Puls	

2 Position On/Off (Digital-Pulse Width Modulation), Control Signal

3 Point Floating, Modulating (Analog), 2-10VDC; 4-20mA 4 to 20 mA or 2 to 10 VDC adjustable (factory set 2-10 VDC) Feedback Signal

100 K Input Impedance 90 Seconds Run Time

Failsafe Function Electronic - Enerdrive¹

100 lb. [450 N] at rated voltage Force Reversible, Up to Open - Default Direction

Auto Shutoff for end of travel and jammed/stuck Stall Protection

Auto Stroke

Enclosure Rating NEMA Type 2 - Not intended for outdoor use without additional protection.

Manual Override

Ambient Conditions Operating 0°F to 122°F (-18°C to 50°C)

Storage -22° to 122°F (-30° to 50°C) **Humidity Rating** 5 to 95% RH Non Condensing

Connection Terminal Connection. Use 18AWG [0.8mm2] minimum

Life Cycle 60,000

Audible Noise Rating <35 dBA

Agency Certification cULus, cCSAus, CE

Dimensions (L) 4.80"x (W) 3.60"x (H) 6.93

Weight

24 VAC or 30 VDC (+)

ON - Input in 4-20mA ON - Feedback in 2.0 lb. (0.9 kg) 2-10VDC ON - Fail Safe Seturn: Stem Up ON - Rotation Direction Stem Down Analog - Modulating 2 (5) OFF - Rotation Direction: COMMON (-) - FEEDBACK OFF - Feedback Stem Up

Digital signal Digital - 3 wire / 2 position On/Off 2.2 ΚΩ 2 3 5 COMMON (-) STEM UP (OPEN) **FEEDBACK** STEM DOWN (CLOSE) SUPPLY (+)

Digital - 4 wire / 3 point floating 2.2 ΚΩ 2 3 5 COMMON (-) STEM UP (OPEN) **FEEDBACK** STEM DOWN (CLOSE) SUPPLY (+)

OFF - Stem Down

Special consideration for Digital control

Wiring: (Terminal)

In this mode, the actuator is sensitive to induced electrical voltages from external sources. To prevent such interference, if the signal on pins 4 and 3 on TB1 are from an external 24 VAC source, install a resistor 2.2kohm, 0.5W between pins 4 and 1 and another of 2.2kohms, 0.5W between pins 3 and 1 of TB1. These resistors are included.

INPUT SIGNAL

NOTE: 1 The Enerdrive system is a patented method of storing energy (using super capacitors) that is later used to drive the actuator to it failsafe position during a power failure For additional operating information consult PAM24-100-FS Operation Manual. The performance specifications are nominal and conform to acceptable industry standards. For application at conditions beyond these specifications, consult the nearest Bray office. Bray controls shall not be liable for damages resulting from misapplication or misuse of its products.



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PAM24-112 — Submittal/Technical Data

04/05/20

112 lb-force — Non-Fail Safe — On-Off, Floating & Modulating

Specifications: For Simple Set Max PIC Valve sizes 2-1/2" to 3"

Power Supply	Operating Voltage	24 VAC (+/-20%) at 50/60 Hz or 24 VDC (+20%, -10%	₀)

Power Consumption 3.5 W, 6.6 VA

Control Signal Input Signal On/Off, Floating and Modulating - 0 to 10 V, Ri> 100kΩ

Position Feedback Signal 0 to 10 V, Load> 10 $k\Omega$

 $\begin{array}{lll} \text{Starting Point U}_0 & 0 \text{ or } 10 \text{ V} \\ \text{Control Span } \Delta \text{U} & 10 \text{ V} \\ \text{Switching Range Xsh} & 200 \text{ mV} \end{array}$

Action Direct or Reverse Acting
Stroke 0.31 to .78 inches (8 to 20mm)

Run Time 112.5 Seconds default¹ at full stroke for SS-150 & 2

Response Time 200 ms Manual Override Yes

Enclosure Rating IP54 (NEMA 3S Equivalent); Flame Retardent Plastic -

Not intended for outdoor use without additional protection.

Maximum Media Temperature 212°F (100°C)

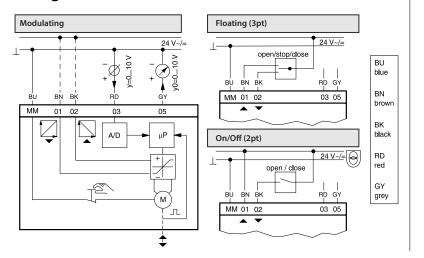
Ambient Temperature 14° to 131°F (-10° to 55°C)
Humidity Rating 5 to 85% RH Non Condensing
Connection 5 x 20 AWG (0.20 mm²)

Life Cycle 80,000 Agency Certification CE

Dimensions 5.73"L x 2.76"W x 7.13"H (145.5 x 70 x 181.2mm)

Weight 2.2 lb. (1 kg)

Wiring: (Cable)



DIP Switches

Running Time per mm	Swith Coding	Running Time for 8 mm of Stroke	Running Time for 20 mm of Stroke
7.5 S Default Setting for SS PIC Valve	1 2 3 ON OFF	60 s ± 2	150 s ±5
	Run Time - Switch (1) Characteristic - Switches (2) & (3)		
15 s	1 2 3 ON OFF	120 s ± 4	300 s ±10
	Characteristic - Switches (2) & (3)		

NOTE: For additional operating information consult PAM24-112 Operation Manual. The performance specifications are nominal and conform to acceptable industry standards. For application at conditions beyond these specifications, consult the nearest Bray office. Bray controls shall not be liable for damages resulting from misapplication or misuse of its products.



¹Dip switch adjustable