

Final Control Elements

ANALOG BACKUP STATION

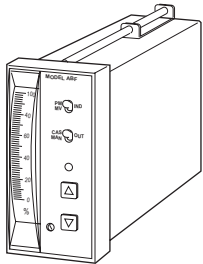
(with indicator)

Functions & Features

- Holding and manipulating control signals in case of computer or DCS failure
- Indicating PV/MV selectable
- Smooth transition from MAN to CAS mode
- External contact closure for switching operation modes
- Cascade control signals can be bypassed the ABF with current output even when the power is removed
- DIN size

Typical Applications

- Computer and DCS backup applications
- Used as manual-auto controller



MODEL: ABF-[1][2]A-R

ORDERING INFORMATION

- Code number: ABF-[1][2]A-R
Specify a code from below for each [1], [2].
(e.g. ABF-6AA-R)
- For an optional scale range:
- Scale (e.g. 0 - 5 m)

[1] PV INPUT

Current

blank: 4 - 20 mA DC (Input resistance 30 Ω)

Voltage

6: 1 - 5 V DC (Input resistance 1 MΩ min.)

[2] CAS INPUT

Current

A: 4 - 20 mA DC (non-isolated) (Input resistance 50 Ω)

Voltage

6: 1 - 5 V DC (isolated) (Input resistance 1 MΩ min.)

MV OUTPUT

A: 4 - 20 mA DC

(Refer to the output specifications for Load Resistance)

POWER INPUT

DC Power

R: 24 V DC

(Operational voltage range 24 V ±10 %, ripple 10 %p-p max.)

GENERAL SPECIFICATIONS

Construction: Panel flush mounting

Connection: M3.5 screw terminals (torque 0.8 N·m)

Screw terminal: Nickel-plated steel

Housing material: SECC

Coating: Gray; black front section

Manual status contact: Turns on when manual operation is available

Manual operation ramp rate: Approx. 5 - 30 sec./100 % adjustable (front)

Isolation: PV input to CAS input to MAN status contact to MV output to remote output switching or power; CAS input - MV output non isolated with 4 - 20 mA CAS input

Indicator: Moving coil type

Scale: 0 - 100 % standard, engineering unit optional

Scaleplate: Aluminium; white scale and characters on black (black on white when optional scale is chosen)

Scale length: 66 mm

Number of divisions: 50

Indicator switching: By PV (process variable) - MV (manipulated variable) selector

Manual output switching: By CAS (cascade) - MAN (manual) selector

Remote output switching: External contact closure switches the ABF to manual mode regardless of the CAS-MAN selector position

Manual status indicator: Red LED turns on in manual

INPUT SPECIFICATIONS

• Remote Output Switching Contact

Sensing: 24 V DC @ 40 mA

ON/OFF level: ≥ 100 kΩ for OFF; ≤ 100 Ω for ON

OUTPUT SPECIFICATIONS

• MV Output: 4 - 20 mA DC

Operational range: Approx. -10 - +110 %

Load resistance

MAN mode: 750Ω max.

CAS mode: [input load capacity - 50 Ω] for 4 - 20 mA; 750 Ω max. for 1 - 5 V

• **Manual Status Contact:** 110 V AC or 30 V DC @ 1 A
(resistive load)

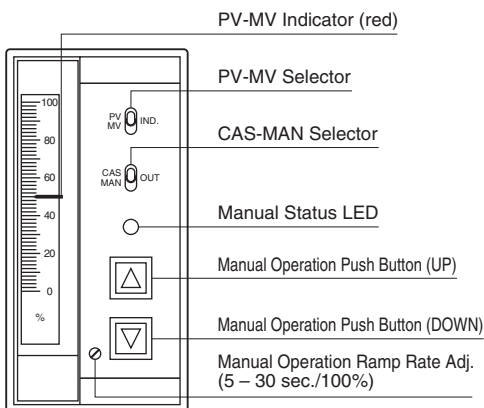
INSTALLATION

Power consumption: approx. 120 mA
Operating temperature: -5 to +55°C (23 to 131°F)
Operating humidity: 30 to 90 %RH (non-condensing)
Mounting: Panel flush mounting (high-density mounting in horizontal direction)
Weight: 700 g (1.5 lbs)

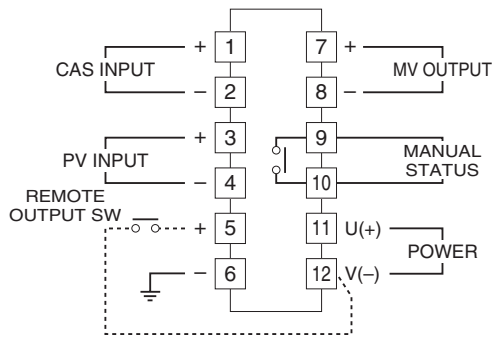
PERFORMANCE in percentage of span

Indicator accuracy: $\pm 2\%$
Output conversion accuracy at 1 - 5 V input: $\pm 0.5\%$
CAS to MAN switching accuracy: $\pm 0.5\%$
Temp. coefficient: $\pm 0.025\%/^{\circ}\text{C}$ ($\pm 0.014\%/^{\circ}\text{F}$)
Manual output resolution: Approx. 0.1 %
Response time at 1 - 5 V input: ≤ 0.5 sec. (0 - 90 %)
Output memory time at power OFF: Approx. 10 min.
Line voltage effect: $\pm 0.25\%$ over voltage range
Insulation resistance: $\geq 100\ \text{M}\Omega$ with 500 V DC
Dielectric strength: 500 V AC @ 1 minute
 (PV input to CAS input to MV output to MAN status contact to remote output switching or power)
 1500 V AC @ 1 minute (PV input or CAS input or MV output or MAN status contact or remote output switching or power to ground)

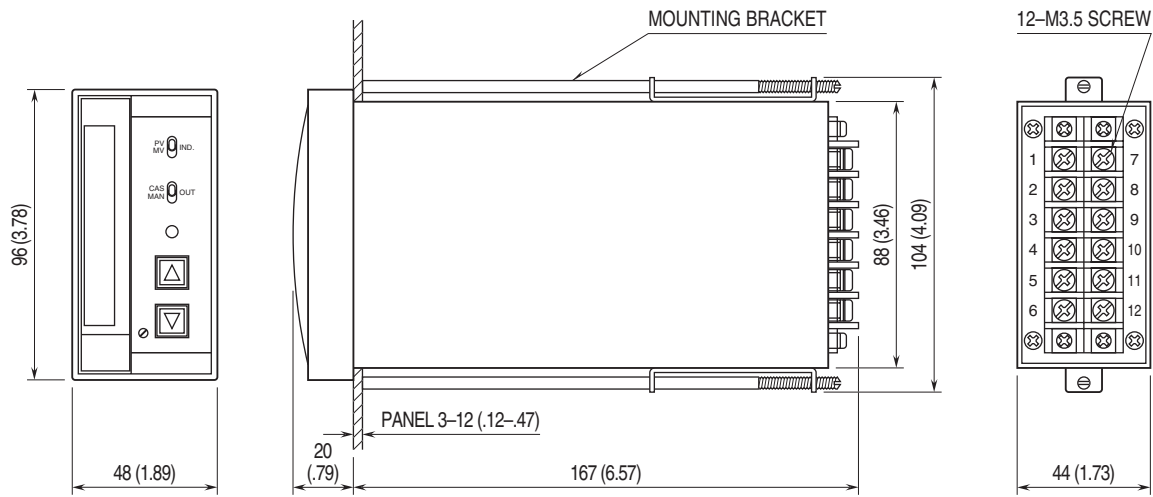
EXTERNAL VIEW



CONNECTION DIAGRAM



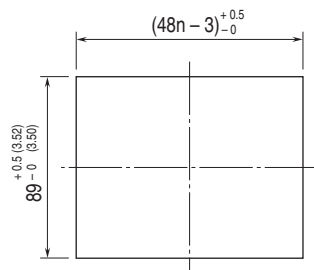
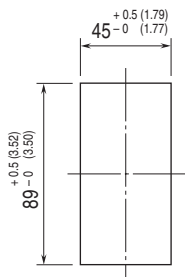
EXTERNAL DIMENSIONS & TERMINAL ASSIGNMENTS unit: mm (inch)



PANEL CUTOUT unit: mm (inch)

• SINGLE MOUNTING

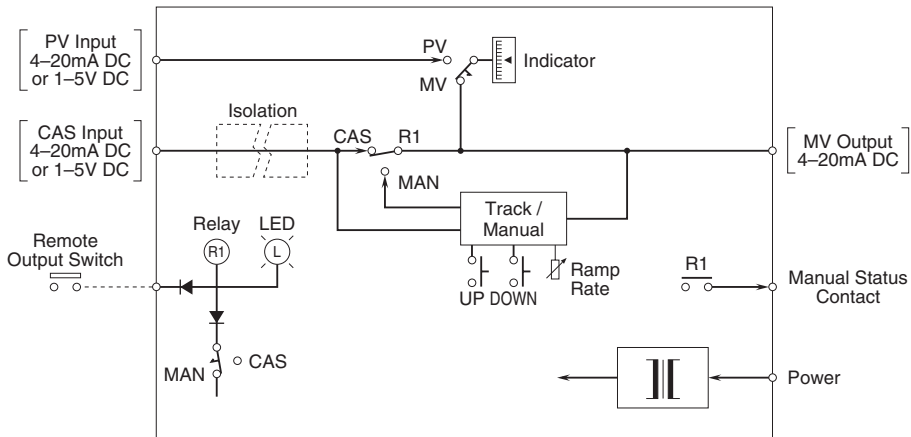
• CLUSTERED MOUNTING



n: number of units

Panel thickness: 3 - 12 mm (0.12" - 0.47")

SCHEMATIC CIRCUITRY



Specifications are subject to change without notice.