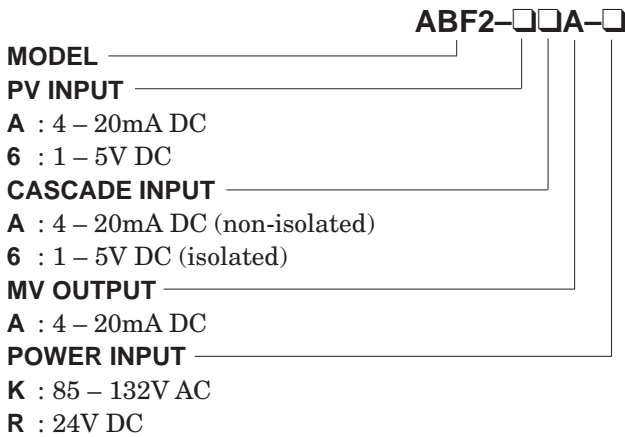


Final Control Elements	
ANALOG BACKUP STATION (with bargraph/digital indicators)	MODEL ABF2

MODEL & SUFFIX CODE SELECTION



ORDERING INFORMATION

Specify code number and variables. Use Ordering Information Sheet (No. ESU-2613). Default setting will be used if not otherwise specified.

- **Code number** (e.g. ABF2-AAA-R)

For optional specifications:

- **Scale** (e.g. 0 – 5 m)
- **Retroactive time period at switching CAS to MAN** (e.g. 10 sec.)
- **Ramp rate at switching MAN to CAS** (e.g. 15 sec.)
- **Bargraph indicator** (e.g. indicates CAS)

GENERAL SPECIFICATIONS

Construction: panel flush mounting

Connection: M3.5 screw terminals
(nickel-plated steel; torque 0.8 N·m)

Housing material: flame-resistant resin (black)

Bargraph indicator: indicates PV as standard;
Specify when ordering for indicating CAS input or MV output (option)

Number of LED segments: 52 including an overrange indicator

Scale: 0 – 100% standard, engineering unit optional

Scaleplate: aluminium; white scale and characters on black

Scale length: 50 mm

Number of divisions: 20

Digital indicator: indicates PV input, CAS input or MV output

LED: 8 mm (.31") 7-segment, red

Number of display digits: 4

Range: -13.5 – +113.0% (0.5% increments) for PV/CAS
-22.5 – +112.5% (0.1% increments) for MV
1.0 – 30.0 sec. (1.0 sec. increments) for the manual operation ramp rate

DISCONTINUED MODEL

Replaced with Model ABF3

Functions & Features

- Holding and manipulating control signals in case of computer or DCS failure
- Bargraph indicating PV
- Digital display indicating PV/CAS/MV selectable
- External contact closure for switching operation modes
- Cascade control signals can be bypassed the ABF2 with current output even when the power is removed
- DIN size

Typical Applications

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

Digital indicator selector (IND): switches between PV, CAS, MV or the manual operation ramp rate setting; automatically switched to MV in manual mode regardless of setting; returns to the previous setting when the manual mode is cancelled.

Manual output switching: by CAS (cascade) – MAN (manual) selector ("OUT"); the mode selected before power OFF is recovered when the power is turned on.

Remote output switching: external contact closure switches the ABF2 to manual mode when the CAS-MAN selector is at CAS position; Not switched with MAN position.

REMOTE OUTPUT SW	FRONT CAS/MAN SELECTOR	
	CAS	MAN
ON	MAN	MAN
OFF	CAS	MAN

Manual status contact: turns on when manual operation is available

Retroactive time period at switching CAS to MAN: 0 sec. plus response time (up to 10 sec. in 1 sec. increments optional)

Ramp rate at switching MAN to CAS: 1 sec. (up to 30 sec. in 1 sec. increments optional)

Manual operation ramp rate: 15 sec./100%; adjustable up to 30 sec. in 1 sec. increments with front keys

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

INPUT & OUTPUT

■INPUT

•PV Input

4 – 20mA DC: input resistance 30Ω

1 – 5V DC: input resistance 1MΩ minimum

•CAS Input

4 – 20mA DC: equivalent input impedance 50Ω at 20mA

1 – 5V DC: input resistance 1MΩ minimum

•Remote Output Switching Contact

Sensing: 5V DC @5mA

ON/OFF level: ≥1kΩ for OFF; ≤100Ω for ON

■OUTPUT

•MV Output: 4 – 20mA DC

Operational range: 0.4 – 22mA DC

Load resistance

MAN mode: 750Ω maximum

CAS mode: [input load capacity – 50Ω] for 4 – 20mA; 750Ω maximum for 1 – 5V

•Manual Status Contact: 120V AC or 30V DC @1A (resistive load)

INSTALLATION

Power input

AC: operational voltage range 85 – 132V, 50/60 ±2 Hz, approx. 10VA

DC: operational voltage range 24V ±10%, approx. 50mA (ripple 10% p-p max.)

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)

Dimensions: W48×H96×D148 mm (1.89"×3.78"×5.83")

Weight: 800 g (1.76 lbs)

PERFORMANCE in percentage of span

Accuracy: ±2% for bargraph;

±0.5% for digital display

Output conversion accuracy at 1 – 5V input: ±0.5%

Manual output resolution: approx. 0.1%

Temp. coefficient: ±0.025%/°C (±0.014%/°F)

Response time in CAS mode: ≤0.5 seconds (0 – 90%)

Line voltage effect: ±0.25% over voltage range

Output memory time at power OFF: 1000 hours (in manual operation mode only)

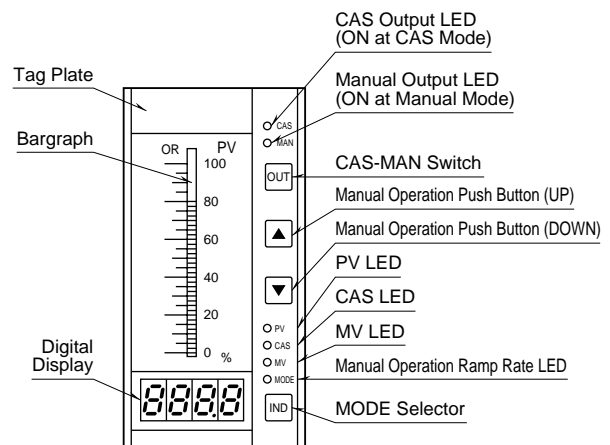
Insulation resistance: ≥100MΩ with 500V DC

Dielectric strength: (CAS – MV output non-isoated with 4 – 20mA CAS input)

1500V AC @1 minute (500V AC with 24V power) (PV input to CAS input to MV output or remote output switching to power to ground)

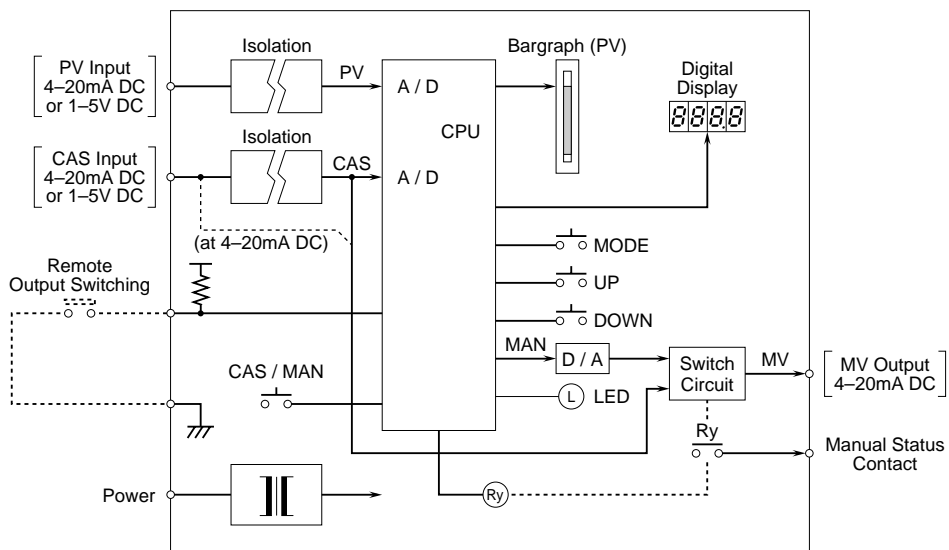
1000V AC @1 minute (500V AC with 24V power) (MAN status contact to each terminal)

FRONT PANEL CONFIGURATION

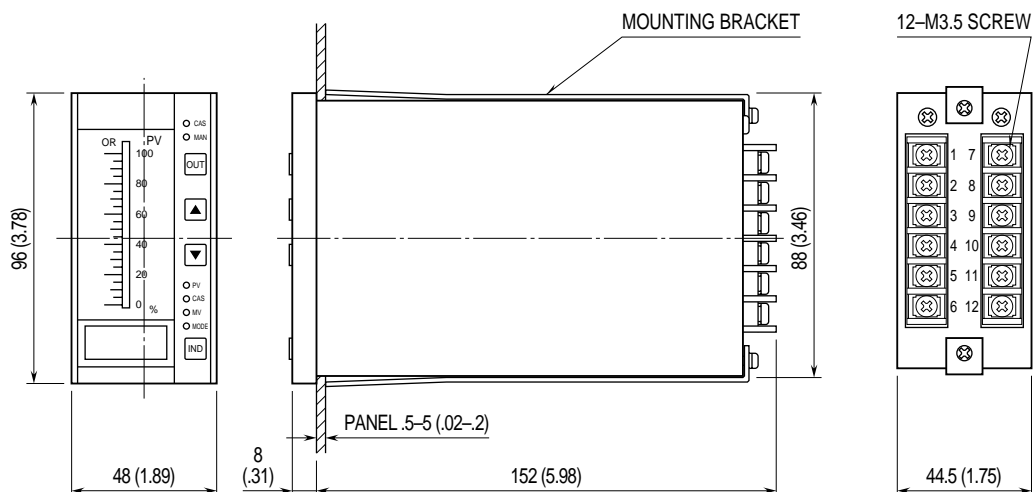


Specifications subject to change without notice.

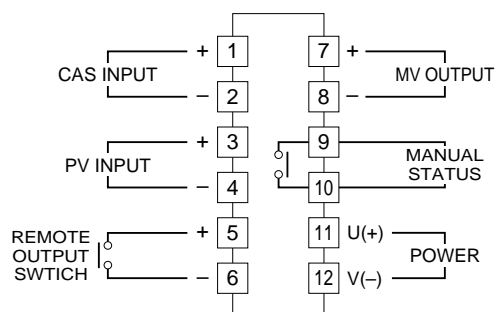
SCHEMATIC CIRCUITRY



EXTERNAL DIMENSIONS & TERMINAL ASSIGNMENT mm (inch)



CONNECTION DIAGRAM



PANEL CUTOUT unit: mm

