Universal Auto/Manual Station

AMS400A

The AMS400A is an interface device used between controlling equipment and field devices to allow manual takeover of automatically controlled processes. Typical applications are:

- manual start-up of sensitive processes before handover to automatic control
- manual over-ride in case of controller failure or malfunction.

A fully configured AMS400A can be installed in three I/O configurations, which interface between:

- Analogue control equipment and analogue control devices
- Digital control equipment and analogue control devices
- Digital control equipment and digital control devices

For analogue to analogue operation there are digital outputs available to force a change to automatic or manual mode.
You can also set ramp rates and handover settings to ensure a smooth transfer of control.

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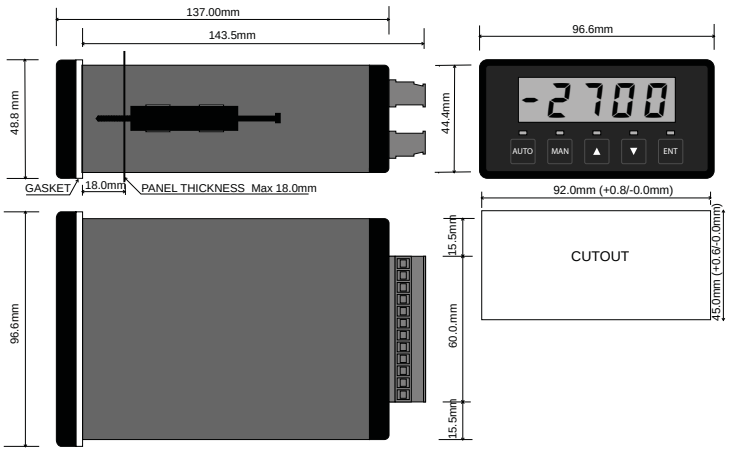
AMS400A Auto/Manual Station

Auto/Manual Station configurations

'dd' - Digital control equipment to digital field device	
Signal	Description
Digital Input	Up/Down signals from PLC/DCS
Analogue Input	Feedback input from field device
Analogue Output	Not used
Relay outputs	Up/Down outputs to field device
Solid state Output	AMS400A Mode signal to PLC/DCS

'dA'-Digital control equipment to analogue field device	
Signal	Description
Digital Input	Up/Down signals from PLC/DCS
Analogue Input	Feedback input from field device
Analogue Output	Proportional output to field device
Relay outputs	Not used
Solid state Output	AMS400A Mode signal to PLC/DCS

'AA'-Analogue control equipment to analogue field device	
Signal	Description
Digital Input	Force shifts between modes
Analogue Input	Automatic signal from PLC/DCS
Analogue Output	Proportional output to field device
Relay outputs	Not used
Solid state Output	AMS400A Mode signal to PLC/DCS



General Technical Data

Display	
Type	Full 4 digit, red 14.2 mm LED
Scaling	To display in % or engineering units
Display range	–9999 to 9999
Status indicators	Operating mode (Automatic or Manual)
Analogue output (optional)	
Type (selected by internal jumper)	Analogue current/voltage
Range (determined by calibration)	Any range inside the limits 0–24 mA / 0–18 V
Current drive	Up to 900Ω load (at 20mA)
Voltage drive	True voltage source (up to 20mA)
Output ripple	Less than 20mV P/P
Analogue input	
Type	Analogue current/voltage (as ordered)
Range	Any range inside the limits ±24mA or ±12 V (determined by calibration)
Input impedance	50Ω (current) or 1MΩ (voltage)
Noise immunity	120dB CMRR (1.5kVrms limit)
Sampling rate	5 samples per second
Digital Inputs	
Type (jumper selectable)	Voltage pulse or volt-free contact
Minimum pulse width	64mS
Status outputs	
Type	2 opto-isolated O/C transistor outputs with common negative return
Rating	200mA on-state current or 50Vdc off state voltage Note: back EMF protection required
Relay outputs	
Type	SPDT relay contacts
Rating (resistive)	3A @ 240Vac or 24Vdc
Isolation	1.5kVrms between channels
Housing	
Type	Panel mount, IP65 rated (from front of panel)
Front bezel	1/8 DIN format
Power supply	
Type	AC or DC powered
AC (selectable)	110Vac (47-63Hz) ±15% 240Vac (47-63Hz) ±15%
DC	24Vdc ±10%
Power usage	AC 6VA or 6W @ 24Vdc

Approvals	Mark	Standard
AM400A Series	c UL us LISTED E256486	CAN/CSA C22.2 No. 1010.1:92 UL61010-1: 2004
AMS400A - DC Powered only	CE LV Directive EMC	EN50178:1998 BS EN 61326:1998 + A2

General	
Accuracy	Typically ±0.1% of span
Linearity	Better than 0.05%
Repeatability	±0.02% of span
Temperature drift	Less than 0.02% span/°C
Long term drift	0.1% per 10,000 hours
Frequency response	–3dB point = 5Hz
Response time	300 mS for 10–90% output change
Insulation Co-ordination	
Ports	Input / Output / Case
Rated Insulation Voltage	300Veff
Overvoltage Category	III
Impulse Withstand	4kV (1.2 / 50)
Isolation	2 kV (between ports)
Environmental Conditions	
Operating temperature	0 to 60 °C
Storage temperature	–25 to +70 °C
Pollution Degree	2
Relative humidity	10–90% (non–condensing)

Ordering information

Type (Model 1/2/3/4 - See key below)	**Cat. No.**
AMS400A 4-20mA/CC/24Vdc/AO	7940011895
AMS400A 4-20mA/CC/24Vdc/AORO	7940015937

For other ranges please specify AMS400A 1/2/3/4 where:
1 = Analogue input format
2 = Digital input type (VP for voltage pulse or CC for contact closure)
3 = Power supply voltage
4 = Output type (AO for analogue output, RO for relay outputs or AORO for both types)

Connections

Terminal	Signal	
1	Neutral / –	Power supply
2	Live / +	
3	Signal +	Analogue output
4	Signal –	
5	0V	Status Outputs
6	AUTO/MAN	
7	Handover Status	
8	Common	Digital Input
9	Increment	
10	Decrement	

Terminal	Signal	
11	Signal +	Analogue Input
12	Signal –	
13	Normally Closed	Increment Relay Output
14	Common	
15	Normally Open	
16	Normally Closed	Decrement Relay Output
17	Common	
18	Normally Open	

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