

- ✂ **Pre-start alarm generation**
- ✂ **Pre-start alarm confirmation**
- ✂ **Attention tone generation**
- ✂ **Call exchange tone generation**
- ✂ **Control of voice communications**
- ✂ **IECEx certified (PSACS1)**



DESCRIPTION

The intrinsically safe pre-start alarm controller type APSA2 is part of the Austdac Pre-Start Alarm and Communications System type PSACS1 that provides two-way voice communications and pre-start alarm facilities along distributed plant such as conveyor belts, crushers, stacker-reclaimers and longwalls.

The pre-start alarm controller is responsible for initiating pre-start alarms, confirming pre-start alarms, tone generation and control of voice communications along the belt as well as to the surface or control room.

The APSA2 controller has two pre-start alarm request inputs, one for intrinsically safe circuits and one for non-intrinsically circuits. Pre-start alarm confirmation is provided by two sets of voltage free replay changeover contact sets.

The pre-start alarm controller can be configured with three different pre-start alarm tone sets to allow plant staff to easily determine which conveyor is starting when conveyors are in close proximity to each other e.g. longwall AFC and BSL or belt transfer stations.

The APSA2 controller also distributes all power (12 volts DC) to the pre-start alarm and communications system.

The pre-start alarm controller also provides the necessary switching for voice communications, signalling tones and pre-start alarm tones to prevent pre-start alarm tones from entering the surface pair and control room.

CERTIFICATION

The pre-start controller type APSA2 is IECEx certified for use in group I hazardous areas as part of the PSACS1 system certification

IECEx TSA 07.0021X Ex ia I

This system type certification eliminates the need for individual entity parameter and cable parameter assessments for all the PSACS1 system components.

The PSACS1 system has also been awarded ATEX system approval under Nemko 07ATEX1129X and MSHA system approval under 18-ISA060002-0.



SPECIFICATION

GENERAL	
Name	Pre-start alarm controller
Type	APSA2
Mounting	DIN rail TS35
Size	70mm (H) x 180mm (W) x 210mm (D) (2.75" (H) x 7.08" (W) x 8.26" (D))
Mass	730g (1.6lbs)
Electrical connections	Cage clamp terminals
Maximum conductor size	2.5mm ²
Ingress protection	IP54 (NEMA 3S)

POWER SUPPLY	
Max output voltage U _o	≤12.6Vdc
Max output current I _o	≤2.35A
Min output resistance R _o	≤5.35Ω
Min output capacitance C _o	≤12uF
Min output L/R L _o /R _o	60uH/Ω

TONES	
PSA set 1	1800Hz
	1500Hz
	0.4s cadence Approx 95dB
PSA set 2	1700Hz
	1400Hz
	0.2s cadence Approx 95dB
PSA set 3	1900Hz
	1300Hz
	0.8s cadence Approx 95dB
Local call (attention)	1200Hz
	Approx 95dB
Call exchange	400Hz for 4s
	Approx 95dB

SYSTEM	
Powered segment length	4000m max
Intercoms per segment	40 max
Number of segments	4 max

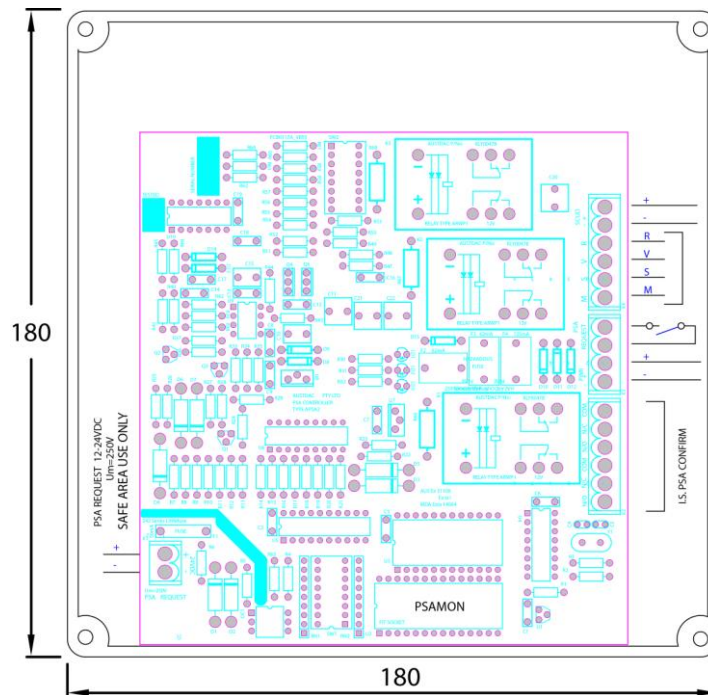
SYSTEM CABLE REQUIREMENTS	
Max length	4500m
Max cable capacitance C _c	220pF/m
Max cable L/R L _c /R _c	60uH/Ω

SURFACE CABLE	
Max length	10,000m
Max cable capacitance	50nF/m
Max cable L/R L _c /R _c	40uH/Ω





DIMENSIONS



CONNECTION DETAILS

PRE-START ALARM CONTROLLER TYPE APSA2 TERMINATION DETAILS		
PIN	NAME	FUNCTION – TERMINATION DETAIL
1	SCUD+	Balanced twisted surface pair VF communications port. Must be connected to the surface pair via a coupler type ASCU.
2	SCUD-	
3	R	Positive power connection intercom string and tail end unit
4	V	Voice line connection intercom string and tail end unit
5	S	Signal line connection intercom string and tail end unit
6	M	Negative power connection intercom string and tail end unit
7	I.S. PSA REQUEST	Intrinsically safe pre-start alarm request input. Requires a voltage free contact closure to initiate a pre-start alarm.
8	I.S. PSA REQUEST	
9	PWR +	Positive power input for system from power supply
10	PWR -	Negative power input for system from power supply
11	CONFIRM COM	Confirm relay changeover contact set 1. Relay is energised on valid confirmation of pre-start alarm.
12	CONFIRM N/C	
13	CONFIRM N/O	
14	CONFIRM COM	
15	CONFIRM N/C	Confirm relay changeover contact set 2. Relay is energised on valid confirmation of pre-start alarm.
16	CONFIRM N/O	
17	PSA REQUEST +24V	
18	PSA REQUEST -24V	Non-intrinsically safe pre-start alarm request input. Requires application of 24 volts to initiate pre-start alarm. Um = 250V

ORDERING DETAILS

DESCRIPTION	ORDER CODE
PRE-START ALARM CONTROLLER	PSA12



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