

# DA-33 and DA-34 Time & Frequency Distribution

## High Performance Distribution

- **High-quality and low-noise** signal distribution
- **Automatic change-over** for redundancy switching and frequency source backup, in case of signal loss
- **Power supply backup** will operate AC or DC powered for redundancy and reliability
- **Un-interrupted and safe** operation
- **Rack space saver**, only 1U high
- **DA-33:** 14 frequency outputs
- **DA-34:** 10 frequency plus 10 timing outputs



The DA33 and DA34 are high performance and low noise frequency distribution units for an affordable point-to-multipoint distribution of reference frequency. Thanks to the change-over option, they provide source redundancy and thus an uninterrupted frequency and timing sourcing, which is crucial in critical applications.

## Overview

Model DA-33 and DA-34 are low noise distribution amplifiers for reference frequency and 1-pps timing distribution.

They can be equipped with an automatic option to facilitate safe, continuous un-interrupted operation of critical applications like satellite ground station synchronization and digital broadcasting.

When used along with the Pendulum frequency standards model GPS-18 or GPS-19, the DA-33/DA-34 forms a reference frequency and timing system that offer fully redundant operation and automatic reconfiguration in the event of a fault.

Figure 1 illustrates an example of a fully redundant system, featuring both frequency source and power supply redundancy. Each output is individually buffered, and individually monitored for signal failure. In Automatic mode the switchover will occur on loss or significant degradation of input signal level, and (optionally) if there is an alarm from the Pendulum GPS-18 or GPS-19 source-in-use.

Common switching channels are provided for Timing and Frequency signals; that operate together in the event of a changeover.

Interconnection cable sets are available for order with the DA-33 and DA-34 units for use with the unit mounted between a pair of T&F sources in adjacent rack locations.

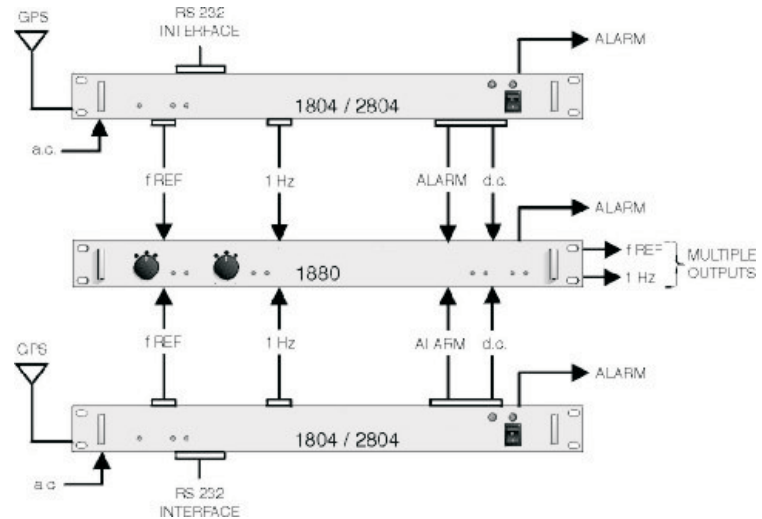


Figure 1

	DA-33	DA-33C	DA-34	DA-34C
Frequency distribution 1MHz – 10MHz sine	X (14 outputs)	X (14 outputs)	X (10 outputs)	X (10 outputs)
1PPS timing distribution			X	X
Auto change-over		X		X
* 2.048MHz distribution - 75W outputs. Option 17/02	X	X	X	X

\* Instead of 1-10MHz sine

# DA-33 and DA-34 Technical Specifications

## Standard Outputs DA-33

### Frequency x 14 (at input frequency)

Connector: BNC  
Output impedance:  
50 Ω  
Insertion gain Input to Output:  
+1dB approx

### Alarm contact

Connector: BNC  
Output level: Contact  
Type: Normally Closed

## Standard Inputs DA-33

### Frequency reference

Connector: BNC  
Frequency: 1MHz to 10MHz  
Input level: +7dBm to +13dBm (0.5 to 1Vrms)  
in 50Ω

### DA-33C:

2 x Frequency reference:  
Master  
Stand-by

### DC Input + Alarm

Connector: DIN8  
DC input levels: 24V - 0V  
Alarm levels: TTL

### AC Input Mains

## Standard Outputs DA-34

### Frequency x 10 (at input frequency)

Connector: BNC  
Output impedance:  
50 Ω  
Insertion gain Input to Output:  
+1dB approx

### IPPS x 10

Connector: BNC  
Output level: TTL, Approx 0V to 2V in 50Ω

### Alarm contact

Connector: BNC  
Output level: Contact  
Type: Normally Closed

## Standard Inputs DA-34

### Frequency reference

Connector: BNC  
Frequency: 1MHz to 10MHz  
Input level: +7dBm to +13dBm (0.5 to 1Vrms)  
in 50Ω

### IPPS reference

Connector: BNC  
Input level: TTL  
Input impedance: 50Ω

### DA-34C:

2 x Frequency reference:  
Master  
Stand-by  
2 x IPPS reference:  
Master  
Stand-by

### DC Input + Alarm

Connector: DIN8  
DC input levels: 24V - 0V  
Alarm levels: TTL

### AC Input Mains

## Additional Inputs

### Change-over option (option 16)

The set of input references will consist in a Master and a Slave sources, with the same characteristics as the standard reference input. These are manually or automatically selectable.

## General Specifications

Cabinet: 1U x 19 inches – rack mount  
Temperature range:  
Operating: +5°C to +45°C  
Storage: -40°C to +71°C  
Humidity: 10% to 85% relative humidity, non condensing  
Size: 483mm (width) x 44mm (height) x 350mm (depth)  
Weight (approx): 3 kg

## Power Supply

115/230V nominal. Switch selectable.  
Tolerance +/- 10% (45 to 66 Hz)

### DC input:

Connector: DIN7  
Type: Power supply backup  
Level: +18V to 32

## Ordering Information

DA-33: Distribution unit: 14 x 10 MHz  
DA-34: Distribution unit: 10 x 10 MHz, 10x 1-pps  
DA-33C: Distribution unit: 14 x 10 MHz with auto changeover switching  
DA-34C: Distribution unit: 10 x 10 MHz, 10x 1-pps with auto changeover switching

### Included with shipment

Mains cable  
User manual on CD  
18 months warranty

### Built in options

Option 17/02: 2.048 MHz distribution instead of 10 MHz, 75 ohm outputs, output levels according to G.703/10

### Other options

Option 18: Power cable to connect the 24V output from a GPS-18 or GPS-19 to the DC power input of DA-33/DA-34  
Option 95/03: Extended warranty from 18 months to 3 years  
Option 95/05: Extended warranty from 18 months to 5 years

Specifications subject to change without notice

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### Pendulum Instruments AB

PO Box 20020, SE-16102 Bromma, Sweden  
Voice: +46 8 598 510 00 Fax: +46 8 598 510 40

[www.pendulum-instruments.com](http://www.pendulum-instruments.com)

- Experts in time & frequency calibration,  
measurement and analysis

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