

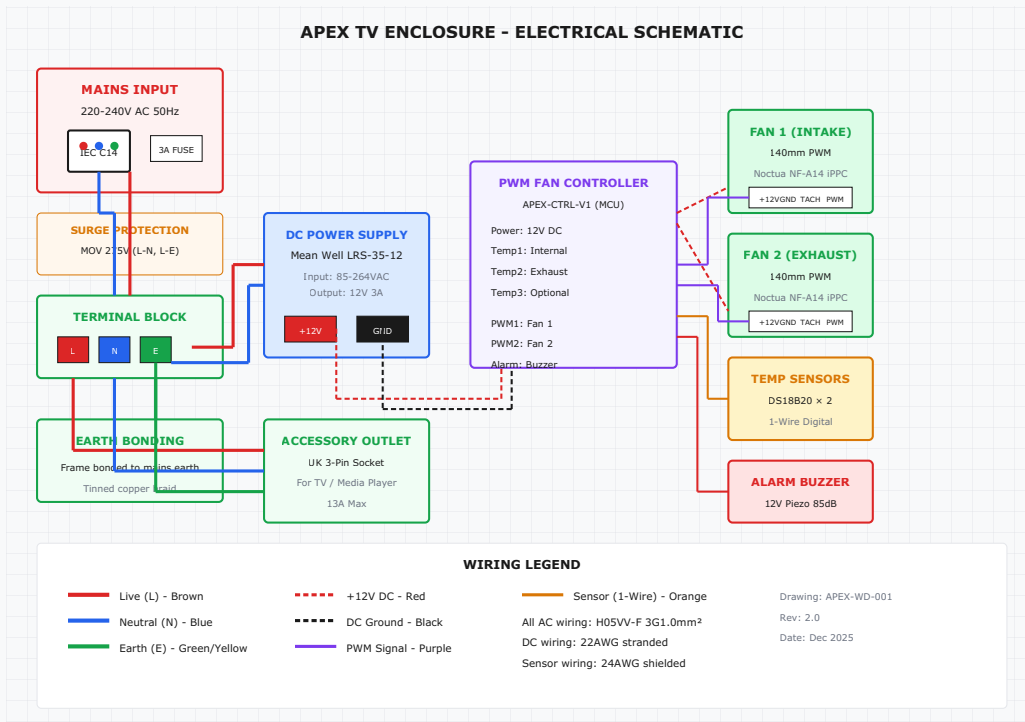
# Electrical Wiring Diagram

Apex TV Enclosures | All Models | Version 2.0

**Safety Warning:** All electrical work must be performed by qualified personnel. Ensure mains power is disconnected before any wiring work. Unit must be properly earthed.

## 1. System Overview Diagram

Figure 1: Complete Electrical System



Wire ID	From	To	Type	Color	Size	Length
AC Mains (220-240V)						
W-AC-L1	IEC Inlet L	Fuse	H05VV-F	Brown	1.0mm²	50mm
W-AC-L2	Fuse	Terminal Block L	H05VV-F	Brown	1.0mm²	100mm
W-AC-N1	IEC Inlet N	Terminal Block N	H05VV-F	Blue	1.0mm²	150mm
W-AC-E1	IEC Inlet E	Terminal Block E	H05VV-F	Green/ Yellow	1.0mm²	150mm
W-AC-L3	Terminal Block L	DC PSU L	H05VV-F	Brown	1.0mm²	200mm
W-AC-N2	Terminal Block N	DC PSU N	H05VV-F	Blue	1.0mm²	200mm
W-AC-L4	Terminal Block L	Accessory Outlet L	H05VV-F	Brown	1.0mm²	300mm
W-AC-N3	Terminal Block N	Accessory Outlet N	H05VV-F	Blue	1.0mm²	300mm
W-AC-E2	Terminal Block E	Accessory Outlet E	H05VV-F	Green/ Yellow	1.0mm²	300mm
W-EB-1	Terminal Block E	Frame Bonding Point	Tinned braid	Bare	10mm	150mm
DC Power (12V)						

Wire ID	From	To	Type	Color	Size	Length
W-DC-P1	DC PSU +12V	Controller VIN+	Stranded	Red	22AWG	250mm
W-DC-G1	DC PSU GND	Controller GND	Stranded	Black	22AWG	250mm
Fan Connections (4-wire PWM)						
W-FAN1	Controller FAN1	Fan 1 (Intake)	4-wire PWM	Mixed	22AWG	400mm
W-FAN2	Controller FAN2	Fan 2 (Exhaust)	4-wire PWM	Mixed	22AWG	500mm
Sensor Connections						
W-TEMP1	Controller TEMP1	Internal Sensor	Shielded 3-wire	Red/ Black/ Yellow	24AWG	300mm
W-TEMP2	Controller TEMP2	Exhaust Sensor	Shielded 3-wire	Red/ Black/ Yellow	24AWG	400mm
Alarm						
W-ALM1	Controller ALARM+	Buzzer +	Stranded	Red	24AWG	200mm
W-ALM2	Controller ALARM-	Buzzer -	Stranded	Black	24AWG	200mm

## 3. Connector Pinouts

### 3.1 PWM Fan Connector (4-pin)

Pin	Signal	Color	Description
1	GND	Black	Ground (0V)
2	+12V	Yellow	Power supply
3	TACH	Green	Tachometer output (RPM)
4	PWM	Blue	PWM control input

### 3.2 DS18B20 Temperature Sensor

Wire	Signal	Color	Description
1	GND	Black	Ground
2	DQ	Yellow	Data (1-Wire)
3	VDD	Red	Power (3.3-5V)

**Note:** DS18B20 sensors can be connected in parallel on the same 1-Wire bus. Each sensor has a unique 64-bit address for identification. Use 4.7kΩ pull-up resistor on data line.

## 4. Safety Requirements

- All mains wiring must use heat-rated cable (105°C minimum)
- Double insulation on all accessible parts
- Earth continuity must be verified before power-on
- Hi-pot test: 1500VAC for 1 minute between L/N and E
- All crimped connections must be pull-tested
- Cable routing must avoid sharp edges

- Minimum 10mm clearance from hot surfaces
- Strain relief required on all external cables

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Drawing: APEX-WD-001 | Rev: 2.0