

AVS Arc Video Systems Technical Specification Data Sheet



AMET is pleased to present our line of arc video systems for the welding industry. AMET offers our customers two models, the AVS-1 and AVS-2. We can provide each of these models with NTSC or PAL output format. We offer the AVS-1 with several optional features to better meet your weld viewing requirements.



AVS-1 shown in "bore cladding" configuration

Purpose:

The AVS-1 and AVS-2 were developed to allow the operator to view the weld zone remotely. Both models allow the operator to view the weld zone during welding. In most applications the camera is set up to view the leading edge of weld. In this configuration, the operator can clearly see the electrode relative to the weld joint, some surrounding area about the weld joint and the leading edge of the weld puddle. Some customers add a second camera to allow the operator to also view the backside of the weld to verify weld quality issues.

In most applications, a camera system is used for the following reasons:

- Hazardous welding condition for the operator. The operator cannot be near the weld head for safety issues.
- Access difficulties for the operator. The operators would have problems locating themselves in a position to clearly see the weld.

- Reduce operator stress and fatigue. Some mechanized welds can last for several hours.
- Most operators have trouble overseeing a weld of this duration without some form assistance.
- Magnified view of the weld zone. The operator has a 2 to 6 times magnified view of the weld, which allows the operator to better locate the weld in relationship to the weld joint.
- Operator needs to view and control multiple arcs from one location.

Features:

AMET's AVS-1 product line includes the following features and capabilities:

- Color camera assembly with motorized focus and iris adjustment.
- Camera controller – offered in rack mount or control box configuration.
- Light to enhance view of weld zone before welding, includes ability to adjust light intensity and mounting assembly.
- Air/Water cooled capability included
- Flexible mounting arm included
- Camera cable assembly - 40 ft. (12 M)
- 12" Color monitor
- Magnified view of the weld zone. Typically 2 to 6 times.
- Optional 90 degree viewing lens available
- Various filters available, with different darkness density and spot sizes in order to obtain the highest picture quality.
- Video can be captured on tape or digital recorder

Note: Camera cable is also available in 20 M (65 ft) length for an additional charge. Special custom cables lengths are also available, built to specific requirements and take 2 weeks to deliver.

Standard CCU



Rack Mount CCU



AVS-1 Camera assembly



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Operating Principle:

The AVS system uses a color CCD micro camera. A spot filter assembly is placed in front of the camera. The spot filter greatly reduces the direct, high intensity light from the welding arc. However, light from the surrounding weld zone is allowed to pass around the spot filter. Thus the operator can locate the camera view so the spot is located over the weld arc. The arc and weld puddle can be viewed as well as the surrounding area by the arc.

Filters are interchangeable and stackable to provide the customer with the best opportunity to obtain a desired view of the weld. Front lens is a replaceable spatter shield to protect the filter lens and camera.

The visual size of the dot can be controlled through the motorized Iris adjustment on the AVS-1 camera. On the AVS-2, the operator must manually set the iris adjustment as required by the weld arc.

On the AVS-1, focus adjustment is motorized. On the AVS-2, focus is manually adjusted once the camera position is determined and fixed.

The video image is passed to the CCU control assembly. The CCU converts the image into a NISTC analog video composite signal. PAL format is available for small additional cost.

The AVS units are good for all arc welding processes. However, on GMAW and FCAW, spatter and fumes will result in a less than perfect picture.

Specifications:

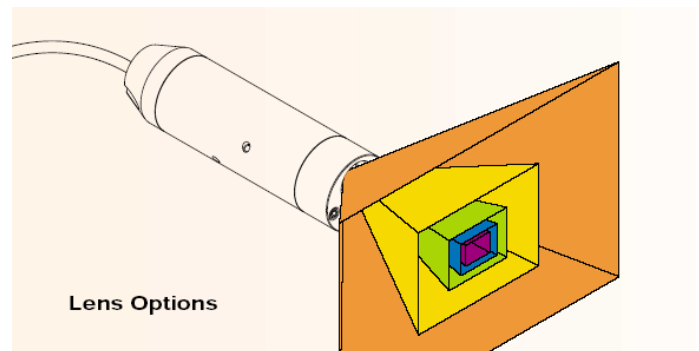
AMET is pleased to provide the following technical specification for the AVS Arc Video Systems. The AVS system supplied to the customer will adhere to these specifications, unless modified in the proposal offered to the customer.

AVS-1 system:

Camera M/N:	Weld View 1125
Image Sensor:	1/2" IT CCD
Resolution (htv):	470-plus TV lines
Pixels:	Hor. = 768, Vert. = 494
Min. Illumination:	5 lux

Camera Control M/N:	CC431E
Scanning System:	2:1 Interlace
Scan Frequency:	Hor. = 15.734 kHz, Vert. = 59.94 Hz
S/N Ratio:	46 dB or greater
Video Output:	VBS 1.0V (p-p); NTSC via BNC connector, Y/C via S terminal
Output impedance:	75 ohms, unbalanced
White balance:	automatic/set/manual
Gain switch (AGC):	sens up (+6 dB)/on/off
Electronic Shutter:	auto, 1/60 sec, 1/100 sec, 1/250 sec, 1/500 sec, 1/1000 sec, 1/2000 sec, 1/4000 sec, 1/10,000 sec.

Camera Housing:	Aluminum
Camera Cooling:	Air or Water capability, included
Focus:	Motorized
Iris:	Motorized



Lens Options

focal length	max aperture ratio	FOV (vert. x hor.)	object distance
36 mm	1:4.5	7.7 x 10.2 deg	520 mm - infinity
24 mm	1:3.1	11.5 x 15.3 deg	250 mm - infinity
15 mm	1:2.0	18.4 x 24.4 deg	90 mm - infinity
7.5 mm	1:1.6	36.4 x 48.2 deg	20 mm - infinity
4 mm	1:2.0	69.1 x 92.1 deg	10 mm - infinity

Service Requirements:

Power Requirements: 120 or 220 volts, 50/60 hz, 1 ph (350 watts maximum)

