



# ART 1D

## Instrument Description & System Specifications

### General Description

The Art<sup>®</sup> Instrument is designed to be used only in conjunction with Ronin's Aims<sup>®</sup> inventory management software. The Art<sup>®</sup> instrument consist of an Art<sup>®</sup> Laser Rangefinder instrument, its mounting system, control cable and ART<sup>®</sup> control cabinet.

Art<sup>®</sup> is a single point laser distance measuring device with a range of 50m (>80% reflectivity).

The single point distance measurement, as well as historical data, is used by Aims<sup>®</sup> to create an accurate profile of the product being stored in the silo bin.

The instrument has an IP65, or better, rating and has a 24v±10% DC power requirement, with communication from the controller to the device being RS232 and from the controller to the network being TCP/IP V4. Alternatively, a RS485/24VDC buss, connecting all devices to the local network interface, can be utilized.

The ART<sup>®</sup> control cabinet is the communication and power interface to the Art<sup>®</sup> instrument, and contains a LAN interface module and DIN rail mounted terminals for power and data. The 24VDC supply is protected by suitably rated fuses with a breaking capacity of 1500A (1.5kA).

The ART<sup>®</sup> Control cabinet receives power from a 24VDC power buss.  
The ART<sup>®</sup> Control cabinet can be supplied with either a separate 5 GHz Ethernet radio or a fibre optic switch option, both of which connect to the LAN Interface module situated in the Control Cabinet.

Art<sup>®</sup> is designed for use in silo bins with single, centrally located, fill and discharge points, where the floor is self-emptying and silo bin diameter is less than 7 meters.

The Art<sup>®</sup> is recommended to be used for medium to high reflectivity products, that are not exposed to direct sunlight and where the measuring range does not exceed 50m.

Several Art<sup>®</sup> instruments can be deployed as part of a network where they can operate in a bin or silo. The scan times are dependent upon product reflectivity.

The accuracy of the single point laser distance measuring device is 1-3mm. The accuracy of the measurement system can vary slightly due to the laser beams angle of incidence on the product surface, as well as by longer distances.



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Art<sup>®</sup> can be mounted either overhead or alongside the product profile, however placement depends upon the field of view that a position provides. It is always preferable to position Art<sup>®</sup> as close to the centre of the silo bin as possible.

The maximum distance that the ART<sup>®</sup> cabinet can be installed from the Art<sup>®</sup> instrument is 20m using RS232 communications or 1000m when using RS485 communications. Both the control cabinet and the instrument should be installed in a position where they are accessible for maintenance purposes.

AIMS<sup>®</sup> maintains a diagnostic schedule which notifies the user to any system faults and where possible the cause thereof, many of these faults can be either diagnosed and resolved remotely and this service can be remotely provided by Ronin.

Art<sup>®</sup> does not require any preventative maintenance nor servicing, although dust can build up on the inside of the dust tube and this may require the dust tube to be cleaned on an annual or bi-annual basis. This can be simply done by maintenance personnel in-situ. Do not use high pressure or compressed air to blow away dust or dirt build-up.

In order to maintain its certification any repairs to the Art<sup>®</sup> instrument must be carried out by qualified personnel at a certified facility. However if a customer operates several Art<sup>®</sup> systems then we recommend that the customer maintains a service exchange stock as the Art<sup>®</sup> instrument can be replaced by maintenance personnel.

### Models

	Power Source	Network Connection
Art <sup>®</sup> M	Buss	LAN
Art <sup>®</sup> J	Buss	LAN
Art <sup>®</sup> ATEX	Buss	LAN