M300-SC Single Conveyor 3,200 Lbs Capacity

Automatic Guided Vehicles

The M300-SC is a powered conveyor deck vehicle with high value features for today's demanding material handling solutions.

FEATURES

Conveyor Deck: 3,200 lbs (1,450 kg) load capacity. Allows pallet movement to/from conveyors, with a transfer time in as little as 10 seconds.

Safe: The M300-SC offers a 16-pattern laser to detect obstructions and personnel.

Efficient: The M300-SC operates on battery power, while also automatically charging, yielding up to 24/7 fully automatic operation.

Integration: Can integrate with Plant Control Systems via Wi-fi communications and System Automation Manager™ (SAM) software providing traffic control.

Affordable: Many applications can demonstrate Return On Investment in three months or less.

Simple: CartTools[™] and AGV Tools software provide a user-friendly interface to implement/make changes.



NAVIGATION AND GUIDANCE OPTIONS

Natural Feature Navigation (NFN): Environmental feature data is collected by on-vehicle sensors and used by the vehicle computer to determine location.

Laser Navigation: Field of reflective targets seen by on-vehicle sensors and used by vehicle computer to determine location.

Magnetic Tape/Bar Guidance:Magnetic path is followed using sensors.

NAVIGATION ENHANCEMENTS

Enhanced Navigation: Additional sensors can be added to augment the vehicle's navigation technology.

Co-Navigation Technology: Multiple navigation packages may be used on a vehicle in challenging environments.

FEATURES AND OPTIONS

- Wi-fi Communications 802.11 a/b/g
- Automatic Shut Off
- Sleep/Auto-wake
- Automatic Charging

- Wheel Brushes
- Side Swipe Optics
- Warning Light/Horn
- Cab Side Covers

This product is available with Magnetic Guidance Technology



"The Best Magnetic Guidance on the Market."



SMART HANDLING AGV SOLUTIONS

General Specifications	SMART HANDLING AGV SOLUTIONS
Weight / with batteries	2,360 lbs (1070 kg) / 2,600 lbs (1180 kg)
Dimensions	W: 57" (1450 mm) L: 91" (2310 mm) H: 51" (1300 mm)
Maximum Load	3,200 lbs (1450 kg) Minimum 40" X 40" distributed load
Maximum Pallet	48" X 48"
Roller Conveyor	2.5" dia., 11 GA wall 3.25" on center
Effective Widths	41", 43", 46", 49" - width of pallet in direction of transfer
Top of Roll	18" to 32" in one inch increments
Transfer Speed	45 to 10 FPM, soft start
Load Sensing	Yes, using cross conveyor optic
Transfer	Left and Right side
Transfer Interface	Optical with emitter and receiver pair on each side
Safety – Front	ANSI B56.5 compliant bumper
Speed – Laser Bumper	15 to 240 FPM, (240 FPM with laser guidance) 6 speeds, 1 FPM increment
Battery Options	AGM 210 AH 24VDC battery pack
, , , , , , ,	AGM/TPPL 204 AH 24VDC battery pack
Automatic Charge	80 amp charge rate (if equipped)
Fast Automatic Charge	140 amp charge rate (if equipped)
Manual Charge	Up to 25 amp charge rate
Environment	The second secon
Environment – Atmosphere	0 to 40° C, 25% to 95% non-condensing humidity
Dust/Water-proof	No
Floor Specs – Edges/Debris	1/4" abrupt elevation change maximum, smoothed
Expansion Joints	½" maximum
Grade Rating	0%
Flatness	1% and ¼" variation in 5' or less
Friction	0.6 coefficient of friction between wheels and floor, minimum
Floor Conductivity	Static dissipative, less than $3.5 \times 10^7 \Omega$
Radio Communication	IEEE 802.11a/b/g, plus security encryption (if equipped)
Detailed Specifications	7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7
Drive Direction – Automatic	Forward and Reverse (if equipped)
Duty Cycle	95% @ Maximum Load Rating
Drive Unit – Wheel	Vulkolan 210 mm diameter x 70 mm wide
Drive Type	Gear driven steerable turntable
Motor	1000 watts 24VAC
Steering	24 VDC motor
Brake	10Nm, spring actuated (fail-safe)
Caster Wheels	
Navigation	Polyurethane on cast iron 6" diameter x 3" wide
Steer Angle Sensor Encoder	Polyurethane on cast iron 6" diameter x 3" wide Daifuku AGV – Natural Feature and Laser
	Daifuku AGV – Natural Feature and Laser
Steering /Stopping Accuracy	Daifuku AGV – Natural Feature and Laser Yes
-	Daifuku AGV – Natural Feature and Laser Yes
Steering /Stopping Accuracy Location	Daifuku AGV – Natural Feature and Laser Yes +/- ½"
Steering /Stopping Accuracy Location	Daifuku AGV – Natural Feature and Laser Yes +/- ½" Virtual
Steering /Stopping Accuracy Location Guidance – Magnetic Tape/Bar	Daifuku AGV – Natural Feature and Laser Yes +/- ½" Virtual SmartCart AGV
Steering /Stopping Accuracy Location Guidance – Magnetic Tape/Bar Steer Angle Sensor	Daifuku AGV – Natural Feature and Laser Yes +/- ½" Virtual SmartCart AGV Analog 10 turn potentiometer
Steering /Stopping Accuracy Location Guidance – Magnetic Tape/Bar Steer Angle Sensor Steering Accuracy	Daifuku AGV – Natural Feature and Laser Yes +/- ½" Virtual SmartCart AGV Analog 10 turn potentiometer +/- 1" from physical path
Steering /Stopping Accuracy Location Guidance – Magnetic Tape/Bar Steer Angle Sensor Steering Accuracy Guide Loss Error	Daifuku AGV – Natural Feature and Laser Yes +/- ½" Virtual SmartCart AGV Analog 10 turn potentiometer +/- 1" from physical path Error generated within 6" of path loss Not offered, violates ANSI B56.5
Steering /Stopping Accuracy Location Guidance – Magnetic Tape/Bar Steer Angle Sensor Steering Accuracy Guide Loss Error Hunt for Path	Daifuku AGV – Natural Feature and Laser Yes +/- ½" Virtual SmartCart AGV Analog 10 turn potentiometer +/- 1" from physical path Error generated within 6" of path loss
Steering /Stopping Accuracy Location Guidance – Magnetic Tape/Bar Steer Angle Sensor Steering Accuracy Guide Loss Error Hunt for Path Sensor SmartSteer Accuracy	Daifuku AGV – Natural Feature and Laser Yes +/- ½" Virtual SmartCart AGV Analog 10 turn potentiometer +/- 1" from physical path Error generated within 6" of path loss Not offered, violates ANSI B56.5 16 millisecond data rate, 50 updates per second +/- 3" @ 10'
Steering /Stopping Accuracy Location Guidance – Magnetic Tape/Bar Steer Angle Sensor Steering Accuracy Guide Loss Error Hunt for Path Sensor	Daifuku AGV – Natural Feature and Laser Yes +/- ½" Virtual SmartCart AGV Analog 10 turn potentiometer +/- 1" from physical path Error generated within 6" of path loss Not offered, violates ANSI B56.5 16 millisecond data rate, 50 updates per second +/- 3" @ 10' ½" proximity sensor, 1-½" transponder reader @ 30 fpm
Steering /Stopping Accuracy Location Guidance – Magnetic Tape/Bar Steer Angle Sensor Steering Accuracy Guide Loss Error Hunt for Path Sensor SmartSteer Accuracy Stopping Accuracy	Daifuku AGV – Natural Feature and Laser Yes +/- ½" Virtual SmartCart AGV Analog 10 turn potentiometer +/- 1" from physical path Error generated within 6" of path loss Not offered, violates ANSI B56.5 16 millisecond data rate, 50 updates per second +/- 3" @ 10'
Steering /Stopping Accuracy Location Guidance – Magnetic Tape/Bar Steer Angle Sensor Steering Accuracy Guide Loss Error Hunt for Path Sensor SmartSteer Accuracy Stopping Accuracy Location Method	Daifuku AGV – Natural Feature and Laser Yes +/- ½" Virtual SmartCart AGV Analog 10 turn potentiometer +/- 1" from physical path Error generated within 6" of path loss Not offered, violates ANSI B56.5 16 millisecond data rate, 50 updates per second +/- 3" @ 10' ½" proximity sensor, 1-½" transponder reader @ 30 fpm Transponder tags, 5 data bytes including checksum Virtual Locations via distance initiated functions
Steering /Stopping Accuracy Location Guidance – Magnetic Tape/Bar Steer Angle Sensor Steering Accuracy Guide Loss Error Hunt for Path Sensor SmartSteer Accuracy Stopping Accuracy Location Method Program Capacity	Daifuku AGV – Natural Feature and Laser Yes +/- ½" Virtual SmartCart AGV Analog 10 turn potentiometer +/- 1" from physical path Error generated within 6" of path loss Not offered, violates ANSI B56.5 16 millisecond data rate, 50 updates per second +/- 3" @ 10' ½" proximity sensor, 1-½" transponder reader @ 30 fpm Transponder tags, 5 data bytes including checksum
Steering /Stopping Accuracy Location Guidance – Magnetic Tape/Bar Steer Angle Sensor Steering Accuracy Guide Loss Error Hunt for Path Sensor SmartSteer Accuracy Stopping Accuracy Location Method Program Capacity HMI Display	Daifuku AGV – Natural Feature and Laser Yes +/- ½" Virtual SmartCart AGV Analog 10 turn potentiometer +/- 1" from physical path Error generated within 6" of path loss Not offered, violates ANSI B56.5 16 millisecond data rate, 50 updates per second +/- 3" @ 10' ½" proximity sensor, 1-½" transponder reader @ 30 fpm Transponder tags, 5 data bytes including checksum Virtual Locations via distance initiated functions 5000 program steps 5.7" color touch screen – errors & destinations
Steering /Stopping Accuracy Location Guidance – Magnetic Tape/Bar Steer Angle Sensor Steering Accuracy Guide Loss Error Hunt for Path Sensor SmartSteer Accuracy Stopping Accuracy Location Method	Daifuku AGV – Natural Feature and Laser Yes +/- ½" Virtual SmartCart AGV Analog 10 turn potentiometer +/- 1" from physical path Error generated within 6" of path loss Not offered, violates ANSI B56.5 16 millisecond data rate, 50 updates per second +/- 3" @ 10' ½" proximity sensor, 1-½" transponder reader @ 30 fpm Transponder tags, 5 data bytes including checksum Virtual Locations via distance initiated functions 5000 program steps 5.7" color touch screen – errors & destinations Pendant – via pendant plug receptacle, Fork Pockets
Steering /Stopping Accuracy Location Guidance – Magnetic Tape/Bar Steer Angle Sensor Steering Accuracy Guide Loss Error Hunt for Path Sensor SmartSteer Accuracy Stopping Accuracy Location Method Program Capacity HMI Display Manual Movement	Daifuku AGV – Natural Feature and Laser Yes +/- ½" Virtual SmartCart AGV Analog 10 turn potentiometer +/- 1" from physical path Error generated within 6" of path loss Not offered, violates ANSI B56.5 16 millisecond data rate, 50 updates per second +/- 3" @ 10' ½" proximity sensor, 1-½" transponder reader @ 30 fpm Transponder tags, 5 data bytes including checksum Virtual Locations via distance initiated functions 5000 program steps 5.7" color touch screen – errors & destinations
Steering /Stopping Accuracy Location Guidance – Magnetic Tape/Bar Steer Angle Sensor Steering Accuracy Guide Loss Error Hunt for Path Sensor SmartSteer Accuracy Stopping Accuracy Location Method Program Capacity HMI Display Manual Movement Minimum Path Radius Drive Stalled Detection	Daifuku AGV – Natural Feature and Laser Yes +/- ½" Virtual SmartCart AGV Analog 10 turn potentiometer +/- 1" from physical path Error generated within 6" of path loss Not offered, violates ANSI B56.5 16 millisecond data rate, 50 updates per second +/- 3" @ 10' ½" proximity sensor, 1-½" transponder reader @ 30 fpm Transponder tags, 5 data bytes including checksum Virtual Locations via distance initiated functions 5000 program steps 5.7" color touch screen – errors & destinations Pendant – via pendant plug receptacle, Fork Pockets 24" – 90° turn, 60" – 180° turn Yes
Steering /Stopping Accuracy Location Guidance – Magnetic Tape/Bar Steer Angle Sensor Steering Accuracy Guide Loss Error Hunt for Path Sensor SmartSteer Accuracy Stopping Accuracy Location Method Program Capacity HMI Display Manual Movement Minimum Path Radius	Daifuku AGV – Natural Feature and Laser Yes +/- ½" Virtual SmartCart AGV Analog 10 turn potentiometer +/- 1" from physical path Error generated within 6" of path loss Not offered, violates ANSI B56.5 16 millisecond data rate, 50 updates per second +/- 3" @ 10' ½" proximity sensor, 1-½" transponder reader @ 30 fpm Transponder tags, 5 data bytes including checksum Virtual Locations via distance initiated functions 5000 program steps 5.7" color touch screen – errors & destinations Pendant – via pendant plug receptacle, Fork Pockets 24" – 90° turn, 60" – 180° turn Yes Yes – in 1" increments
Steering /Stopping Accuracy Location Guidance – Magnetic Tape/Bar Steer Angle Sensor Steering Accuracy Guide Loss Error Hunt for Path Sensor SmartSteer Accuracy Stopping Accuracy Location Method Program Capacity HMI Display Manual Movement Minimum Path Radius Drive Stalled Detection Distance Initiated Functions Obstacle Detection	Daifuku AGV – Natural Feature and Laser Yes +/- ½" Virtual SmartCart AGV Analog 10 turn potentiometer +/- 1" from physical path Error generated within 6" of path loss Not offered, violates ANSI B56.5 16 millisecond data rate, 50 updates per second +/- 3" @ 10' ½" proximity sensor, 1-½" transponder reader @ 30 fpm Transponder tags, 5 data bytes including checksum Virtual Locations via distance initiated functions 5000 program steps 5.7" color touch screen – errors & destinations Pendant – via pendant plug receptacle, Fork Pockets 24" – 90° turn, 60" – 180° turn Yes Yes – in 1" increments Front and rear programmable up to 2.8 meters
Steering /Stopping Accuracy Location Guidance – Magnetic Tape/Bar Steer Angle Sensor Steering Accuracy Guide Loss Error Hunt for Path Sensor SmartSteer Accuracy Stopping Accuracy Location Method Program Capacity HMI Display Manual Movement Minimum Path Radius Drive Stalled Detection Distance Initiated Functions	Daifuku AGV – Natural Feature and Laser Yes +/- ½" Virtual SmartCart AGV Analog 10 turn potentiometer +/- 1" from physical path Error generated within 6" of path loss Not offered, violates ANSI B56.5 16 millisecond data rate, 50 updates per second +/- 3" @ 10' ½" proximity sensor, 1-½" transponder reader @ 30 fpm Transponder tags, 5 data bytes including checksum Virtual Locations via distance initiated functions 5000 program steps 5.7" color touch screen – errors & destinations Pendant – via pendant plug receptacle, Fork Pockets 24" – 90° turn, 60" – 180° turn Yes Yes – in 1" increments

CARTTOOLS SOFTWARE

Simple, standardized toolbox of commands that make configuration



Pendant Control – When manual movement is required, it's as simple as driving the AGV where it needs to go. Wireless Bluetooth (optional)

SmartSteer – CartTools commanding of the AGV to intentionally leave the magnetic path. It allows maneuvers like pivot turns and ignoring floor problems when in full automatic operation

DAIFUKU

30100 Cabot Drive Novi, MI 48377 USA +1-248-553-1000 info@DaifukuNA.com www.Daifuku.com

SAM™, SmartCart®, CartTools™, and SmartSteer™ are trademarks of Jervis B. Webb Company. All other trademarks are the property of their respective owners.

NOTICE: The information, data and specifications in this brochure are subject to change without notice and should not be used for construction purposes. Daifuku does not represent or warrant that selection of components or accessories set forth in this brochure will necessarily result in proper installation, operation and/or maintenance of such equipment or system, and Daifuku disclaims responsibility for any and all damages and injuries resulting from selection, design, installation, operation or maintenance performed by non-Daifuku personnel.

Bulletin # 3156 120121 © 2021

^{*} For any applications greater than these specifications, please contact Engineering.