



Quarterhill Model 4020 SSWIM® Scale

Install a Quarterhill Model 4020 slow-speed Weigh-In-Motion system for accurate, low cost, and durable axle weighing capability.

Quarterhill's Model 4020 Slow Speed Weigh-In-Motion (SSWIM) Scale can accurately weigh moving vehicles at speeds between 0 and 21 kph (0 and 13 mph). Its low operation cost, ease of installation and high accuracy make it the ideal choice for checking truck weights, including axle compliance and bridge formula compliance.

The Model 4020 Scale utilizes ONLY two shear beam load cells installed at optimally designed loading location within the scale structure to provide efficient weight sensing with virtually no relative movement between scale components and hence no lateral forces, as opposed to 4 (corner) load cells based weighing scales. This ensures better accuracy, less wear and tear during weighing and minimal maintenance over the designed life. Only one scale 10' (3m) wide is required per lane. Each scale is mounted flush with the road surface in roads of 7" (175 mm) minimum depth. The Model 4020 Scale functions in all weather conditions.

Applications

- Freight Terminals
- Commercial Fleet Axle Weight Monitoring
- Axle Compliance
- Truck Weigh Stations/Citations
- Border Crossings & Access Control
- Ports
- Weight Enforcement at Toll Operations (WIM@Toll®)
- Automatic Vehicle Classification



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Benefits

The Model 4020 Scale provides a low cost alternative to traditional static weigh scales and 4 corner load cell based systems. The Model 4020 Scale is designed specifically for Weigh-In-Motion and provides axle weighing capabilities at a fraction of the cost of a traditional static scale and with greater durability than 4 load cell systems which require more load sensors to be maintained. Maintenance costs are low and life cycle costs are attractive. A Quarterhill Model 4020 Scale System can typically be installed and maintained for less than the regular maintenance of a traditional static scale.

Common Options

- Static Mode Weighing – i.e. axle-by-axle weighing and compliance checking (GVW Accuracy +/- 0.5%)
- Detection of tire width (single, super single, dual type) and tire anomaly with Quarterhill's VectorSense® Sensor suite included for enhanced safety and compliance of commercial vehicles.
- Web-based real time weighing operations monitoring (Virtual Weigh Stations concept as applied to SSWIM)
- VI2M™ real time data collection and monitoring cloud service (Data As Service-DAS)
- Automatic Vehicle Identification (AVI), License Plate Recognition (LPR), etc.

Note: Optional functionalities may require additional hardware/software or other communication network. Please contact Quarterhill for more details and pricing.

System Operation

The Model 4020 SSWIM Scale can be adapted to various applications through systems that incorporate the scale, in road sensors, a processor unit, traffic control devices, a driver display and/or printer.

The system operates as a slow speed WIM. The operator directs the truck to the scale where it rolls over the scale at a low speed. When the weighing operation is complete, the user can view results on a display or print a ticket for weight verification. Optionally, this data can also be stored in a database if further analysis is desired.

Accuracy

The Model 4020 Scale system meets or exceeds the ASTM E 1318-09 Type IV specification for WIM accuracy. The accuracy of the system increases with a decrease in speed. The WIM site/ramp must also meet construction requirements as identified for ASTM 1318 Type IV System installation.

Speed	Dynamic Accuracy*
1-5 kph (1-3 mph)	Gross wt. ±2.0% of applied
5-10 kph (3-6 mph)	Gross wt. ±3.0% of applied
10-16 kph (6-10 mph)	Gross wt. ±4.0% of applied
17-21 kph (11-13 mph)	Gross wt. ±5.0% of applied

***Dynamic accuracy is specified for a 95% confidence level when installed as per IRD recommendations.**

The system will weigh with an accuracy of +/-0.5% full scale in optional static mode.

Specifications	
Scale Weight	900 kg (2000 lbs)
Dimensions - Sensor	737 x 3127 x 276 mm (29" x 124" x 11")
Maximum Capacity	40,000 kg (88,000 lbs)

