

Substance Spreader Integration

GoFleet offers two substance spreader controllers. Typically, they both provide the amount of material spread (granular and liquid), the distance while spreading, time while spreading, and spread rate. While these controllers can be used for multiple purposes they are primarily targeted at winter vehicles in order to gain greater awareness of their operations during winter snow events. Data is captured through the IOX and transmitted to MyGeotab where exceptions can be created and quantities spread determined.

The two spreader controllers supported are:

- **DICKEY-john Control Point Control System (IOX-DJ)**
- **Rexroth Compu-Spread CS440 and CS550 controllers (IOX-COMSPREAD)**
-



Spreader Controller Monitoring Hardware

DICKEY-john Salt Report

Created Jun 12, 2015
From Feb 03, 2015
To Feb 07, 2015

Vehicle Name (All) ▾

| Vehicle | Total Distance | Total Volume | Total Hours | Total Spread Rate (volume/distance) |
|--------------------|----------------|----------------|-------------|-------------------------------------|
| 162 | 26.50 | 4100.00 | 1.09 | 154.72 |
| Grand Total | 26.50 | 4100.00 | 1.09 | 154.72 |

Geotab Substance Spreader Report

What are the features and benefits of substance spreader monitoring?

- View on a map which roads have been salted or sanded or had other material applied
- View areas on a map where blasting occurred
- Track distance, quantity, and time spent sanding, salting, blasting or applying other materials
- Compare application rates to ensure some drivers are not over or under applying material

Are there additional monthly fees for substance spreader monitoring?

Devices using either IOX-DJ or IOX-COMSPREAD require, or will activate, the ProPlus rate plan.

Products

IOX-DJ

What DICKEY-john controller units are supported?

The IOX-DJ supports the Control Point Control Systems from DICKEY-john. These systems have a DB9 connector that the IOX-DJ plugs into. DICKEY-john ICS2000 and FLEX4 systems are NOT supported.



IOX-COMSPREAD

What Compu-Spread controller units are supported?

The IOX-COMSPREAD supports the CS-440 and CS-550 spreaders. These systems have a DB9 connector that the IOX-COMSPREAD plugs into. The IOX-COMSPREAD will only provide a female DB9 connector and special consideration will be needed for connection with the Compu-Spread unit. Please refer to the Support Document for more information.

Much like the DICKEY-john unit, the CS-440 and CS-550 will report data for the solid and liquid channels but will report for a third channel used for Pre-wet materials.

What kind of data is transmitted?

The GO device transmits two different types of Material Spreader information:

- 1) status changes of the material being spread and when application of material begins and ends
- 2) accumulation of distance travelled, amount spread, and time spent spreading or blasting a material

All data is transmitted as Engine Diagnostic data and can be reviewed in Engine Measurements

Reports.

Status changes

When a given material has begun spreading, the value of one of the “MAC select substance X” values will change from “0” to “1”. When the material stops being spread the value changes back to 0. The GO device looks for changes in distance reported by the substance spreader to determine if the unit is applying a given material.

Because of the infrequent changes reported by the third party spreader units to the GO device, there can be as much as a 100m distance variance from the time the driver makes the change to the time the GO device receives a notice from the spreader unit.



Rules can be created by first finding which “MAC select substance X - auto” or “MAC select substance X - blast” is being transmitted from the unit based on the Engine Measurements Report. Once you determine what material matches the “substance” being triggered you can create the rule.

The following engine diagnostic codes may be seen in MyGeotab. The first column is the Engine Status pid and corresponding description while the second column and description is what material the “substance” is triggered by. Please note that for REXROTH, you will also have diagnostics for substances 9 to 12 and will refer to Pre-wet.

| | | |
|-------|--------------------------------|---|
| 34081 | MAC select substance 1 - blast | MAC blast application short/small (solid) |
| 34082 | MAC select substance 2 - blast | MAC blast application medium (solid) |
| 34083 | MAC select substance 3 - blast | MAC blast application long/large (solid) |
| 34084 | MAC select substance 4 - blast | MAC blast application extra long/large (solid) |
| 34085 | MAC select substance 5 - blast | MAC blast application short/small (liquid) |
| 34086 | MAC select substance 6 - blast | MAC blast application medium (liquid) |
| 34087 | MAC select substance 7 - blast | MAC blast application long/large (liquid) |
| 34088 | MAC select substance 8 - blast | MAC blast application extra long/large (liquid) |
| 34090 | MAC select substance 1 - auto | MAC automatic short/small (solid) |
| 34091 | MAC select substance 2 - auto | MAC automatic application medium (solid) |
| 34092 | MAC select substance 3 - auto | MAC automatic application long/large (solid) |
| 34093 | MAC select substance 4 - auto | MAC automatic application extra long/large (solid) |
| 34094 | MAC select substance 5 - auto | MAC automatic application short/small (liquid) |
| 34095 | MAC select substance 6 - auto | MAC automatic application medium (liquid) |
| 34096 | MAC select substance 7 - auto | MAC automatic application long/large (liquid) |
| 34097 | MAC select substance 8 - auto | MAC automatic application extra long/large (liquid) |

34089 MAC master switch status (0 = off/1 = auto/2 = unload)

To create a rule so you can view on the map where sanding or salting has taken place, under Conditions select “Add Engine”, select “Measurement or Data”, find the appropriate “MAC select substance X” and select it, and specify “Over 0”.

Exception Rule Edit ?

Name Conditions Notifications

CONDITIONS

Add engine Add zone or zone type Add speed Add speed limit More... ↶ ↷ 📄

Engine

Type Active Fault Any Fault **Measurement or Data**

Diagnostic **MAC select substance 1 - auto**

Display All Diagnostics

Value Over Under **0**

Add Cancel

Add a condition...

Distance, Volumes, Time, and Spread rates

The substance spreader units also report distances, times, and volumes of material being spread. The GO device listens or watches for changes to these parameters and as the material is being spread or blasted the values will increment. The GO device captures the increments and transmits them to MyGeotab. When the material is being spread or blasted,

- Distance is measured in kilometers;
- Quantity is measured in kilograms (if a granular material) and Litres (if a liquid);
- Time is measured in hours.

As the material is spread, or applied, the relevant engine measurements data “accumulates”. The DICKY-john units can be set up by the customer with 4 Granular materials (with both regular and “blast” applications) and 4 liquid materials (again with both



regular and "blast" applications). The REXROTH units are set up similarly, but the REXROTH system supports a third channel for Pre-wet applications with 4 material types (again with both regular and "blast" applications).

Because the spreader units are independently configured by the customer, "Granular 1" could be salt, or sand, or a mixture of the two - it depends on how the customer sets up their in-vehicle units. It is common practice that the customer will set up all the vehicles the same within the fleet. "Granular 1" and "Granular 2" are the most common materials chosen with "Granular 1" representing Salt and "Granular 2" representing Sand.

The following engine status codes may be seen in MyGeotab depending on how the units are configured. Only diagnostics relating to the solid materials are shown, but there are identical diagnostics for liquid and pre-wet materials.

| |
|---|
| 34147 MAC application rate - actual (solid) |
| 34148 MAC application rate - set point (solid) |
| 34000 MAC automatic short distance (solid) |
| 34001 MAC automatic application small weight (solid) |
| 34002 MAC automatic application short duration (solid) |
| 34003 MAC blast application short distance (solid) |
| 34004 MAC blast application small weight (solid) |
| 34005 MAC blast application short duration (solid) |
| 34010 MAC automatic application medium distance (solid) |
| 34011 MAC automatic application medium weight (solid) |
| 34012 MAC automatic application medium duration (solid) |
| 34013 MAC blast application medium distance (solid) |
| 34014 MAC blast application medium weight (solid) |
| 34015 MAC blast application medium duration (solid) |
| 34020 MAC automatic application long distance (solid) |
| 34021 MAC automatic application large weight (solid) |
| 34022 MAC automatic application long duration (solid) |
| 34023 MAC blast application long distance (solid) |
| 34024 MAC blast application large weight (solid) |
| 34025 MAC blast application long duration (solid) |
| 34030 MAC automatic application extra long distance (solid) |
| 34031 MAC automatic application extra large weight (solid) |
| 34032 MAC automatic application extra long duration (solid) |
| 34033 MAC blast application extra long distance (solid) |



| |
|---|
| 34034 MAC blast application extra large weight (solid) |
| 34035 MAC blast application extra long duration (solid) |
| 34080 MAC vehicle distance |