FarmTRX™

FarmTRX ISOBUS / CAN Specification

Yield Monitor

FarmTRX™

Version	Date	Author	Changes
V0.2 - Draft	February 23, 2021	Ary Williams	
V0.3 - Draft	March 17, 2021	Ary Williams	Added connection information. Modified parameter for PGN 61184. - Troo Command ID is now the entire first 2 bytes Updated various examples.
V0.4 - Draft	Oct 27, 2021	Perry Casson/Nick Droogh	External CAN GPS
V0.5 - Draft	Oct 29, 2021	Ary Williams	Expanded supported PGNs to include supported DDIs Updated formatting

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1.0 FarmTRX Yield Monitor CAN Messaging

1.1 General Information

Industry Group	2 – Agricultural and Forestry Equipment
Device Class	7 – Harvester
Function Type	133 (0x85) – Product Flow
Function Instance	0
ECU Instance	0
Manufacturer Code	1144 (0x478) – Troo Corporation
Source Address	0x40

1.2 Connector Pinout

1.2.1 FarmTRX Yield Monitor 1.0

The FarmTRX Yield Monitor 1.0 has very limited CAN support. Only Yield Monitors with version 1.06 hardware and a 11111-2 primary harness installed can communicate with CAN devices. If both requirements are met, there is a 4 Pin Deutsch DTM Series connectors near the DB15 connector on the main harness with the pinout shown in Table 1

Table 1 - 4 Pin CAN

Pin	Colour	Function
1	Red	12V
2	Black	GND
3	Green	CAN H
4	Blue	CAN L

1.2.2 FarmTRX Yield Monitor 2.0

The FarmTRX Yield Monitor 2.0 uses CAN for all wireline communications. There is a 4 PIN Deutsch DTM series connector near the DB15 connector normally used for connecting the FieldView Drive Cable (see Table 1). There is also a 6 Pin Deutsch DTM series connectors used on the primary harness, see Table 2 for pinouts.

Table 2 - YM2 6 Wire Pinout

Pin	Colour	Function
1	Red	12V
2	Black	GND
3	White	Optical
4	Yellow	RESET*
5	Green	CAN H
6	Blue	CAN L

All FarmTRX devices have software settable internal CAN terminators, which can be configured on the "Advanced Settings" page of the Mobile App. They follow the J1939 standard of having only the 2 endpoints on the bus terminated. For devices needing less than 1 amp, pin 1 can be used to power your device. If more that 1A is required, power the device separately. Keep the total bus current below 2.5A; use 200mA as the current budget for the Yield Monitor and 150 mA for a Moisture Sensor, if installed.

1.3 External GPS Support

Yield Monitor firmware version 58.3.1 and later support receiving CAN GPS messages allowing, for higher precision position and speed data to be used for yield calculations. The switch from Internal to External GPS is automatic as soon as valid CAN GPS messages are seen on the CAN bus. The Yield Monitor will switch to parsing the external CAN GPS messages and suppress transmitting its own GPS messages on the BUS. Current supported GPS specific PGN's are limited to 0x1F801, 0x1F802, 0x1F805 please contact support@farmtrx.com if other PGN support is required.

1.4 Yield Monitor Supported PGNs

Priority	PGN Hex	PGN Decimal	DDI	Direction	Description
3	CB00	51968	87	TX	ISO Process Data Command – Mass Per Time Yield
3	CB00	51968	99	RX/TX	ISO Process Data Command – Crop Moisture
3	CB00	51968	141	RX/TX	ISO Process Data Command – Actual Work State
3	CB00	51968	241	RX/TX	ISO Process Data Command – Crop Temperature
6	E800	59392	-	RX/TX	ISO Acknowledgement
6	EE00	60928	-	RX/TX	ISO Address Claim
6	EF00	61184	-	RX/TX	Troo Defined Command
7	1F011	126993	-	RX/TX	Heartbeat
3	1F801	129025	-	RX	NMEA Lat/Long Rapid Update
3	1F802	129026	-	RX/TX	NMEA COG & SOG, Rapid Update
2	1F805	129029	-	RX/TX	NMEA GNSS Position Data