

Wilger Visual Ball Flow Indicators

The Flow Indicator Advantage

See Any Application Accurately



Fittings
Swivel
360°



Clear
Sight
Column



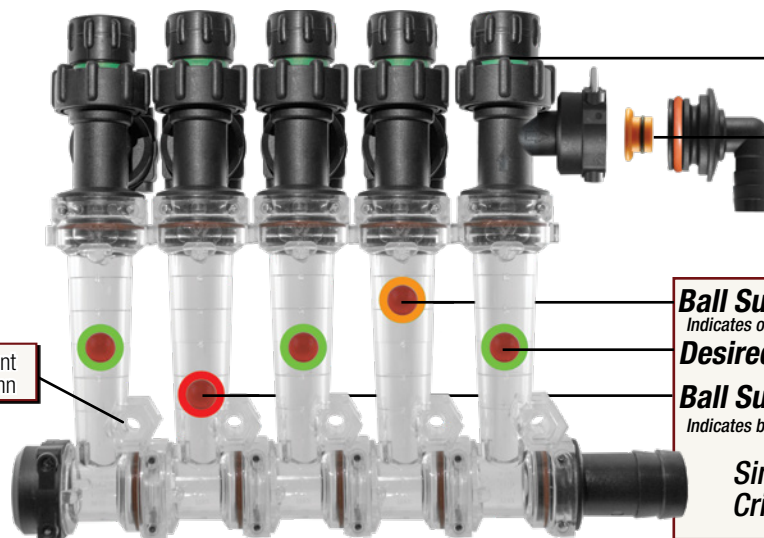
Superior
Chemical
Resistance



Simple,
without
Electronics



No Threads
or Sealant
Required



1/4" Bolt mount
on each column

Example of flow indicator function;
Overlay colors are for visual purposes only

Manual ON/OFF Check Valves
Easy to turn off for maintenance or use
liquid kits on alternate spacing

Larger Metering Orifices
Easier handling & cleaning

**Consistent Metering
& Easy Cleaning**

Ball Suspended Higher
Indicates over flow or leak
Desired Flow

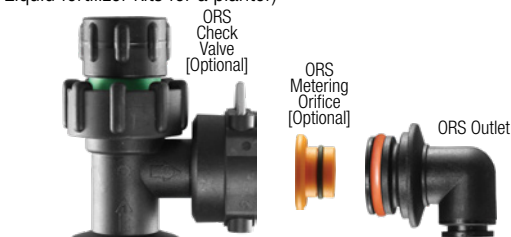
Ball Suspended Lower
Indicates blockage or plug

**Simple Operation.
Critical Feedback.**

Flow Indicators are used on Planting Equipment & Sprayers to indicate relative flow blockage or overage.

Manifold Feed - Ball Flow Indicators

For monitoring many lines from a single feed
(e.g. Liquid fertilizer kits for a planter)



Model	Kit Type*	Part#
Ultra Low Flow [0.037-0.910 L/min]	Bulk Kit	20475-BULK
	Bagged Kit	20475-00
	Body Only	20475-01
Low Flow [0.19-2.46 L/min]	Bulk Kit	20470-BULK
	Bagged Kit	20470-00
	Body Only	20470-01
Standard Flow [0.26-10.22 L/min]	Bulk Kit	20460-BULK
	Bagged Kit	20460-00
	Body Only	20460-01

*MANIFOLD KITS INCLUDE: Indicator Body, Ball Retainer (#20460-02), O-ring (#20460-03), 2x U-clips (#20460-04), Green Ball (#20460-08), Red Plastic Ball (#20460-07), Red Glass Ball (#20460-06), 1/2" SS Ball (#20460-05)

Flow Indicator & O-ring seal (ORS) Connection Specifications*

Max Operating Pressure:
100PSI / 7BAR

Max Metered Flow Rate:
30 L/min per column

Maximum Operating Temp: 85°C

O-ring Seals: FKM (std) / Viton

U-clip: Stainless Steel (302)

ORS Fittings: Glass-reinforced Polypropylene

Flow Column Material:
TPX™ (Polymethylpentene)



Isolated Feed - Ball Flow Indicators

For monitoring single lines from individual feeds
(e.g. Squeeze pump monitoring, chemical injector pumps)

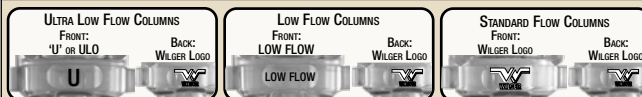


Model	Kit Type**	Part#
Low Flow [0.19-2.46 L/min]	Bulk Kit	20490-BULK
	Bagged Kit	20490-00
	Body Only	20490-01
Standard Flow [0.26-10.22 L/min]	Bulk Kit	20480-BULK
	Bagged Kit	20480-00
	Body Only	20480-01

**ISOLATED KITS INCLUDE: Flow Indicator Body, Ball Retainer (#20460-02), U-clip (#20460-04), Green Ball (#20460-08), Red Plastic Ball (#20460-07), Red Glass Ball (#20460-06), 1/2" Stainless Ball (#20460-05)

Inlet feed uses Combo-Jet cap.
Refer to COMBO-JET caps & adapters.

How to Tell Columns Apart? Check the top of the column.



Required Storage for Flow Indicator Columns

Wilger Flow Indicator columns are made of a specialty UV-stabilized compound (TPX™) that maximizes chemical resistance, providing compatibility for a huge range of chemical applications. As with any plastic, UV exposure degrades the flow indicator columns.

To maximize flow indicator column clarity & longevity, completely cover the flow indicator columns from UV exposure (sun/etc.) when not in use.

PRO TIP: Using two balls simultaneously helps adapt to cover changes in rate & speed

If a lighter ball is suspended too high, using the next heavier ball below can help cover changes in application rates or speeds.

Red Celcon Ball	Lower Rate/Speed
Red Glass Ball	Higher Rate/Speed



Wilger Visual Ball Flow Indicators - Balls & Setup Guide

Flow Indicator Balls & Selection Chart

Weighted balls are used inside flow indicator columns and within the operational flow range, will suspend within the column, showing relative flow rate to other flow columns.

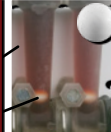
Ball Description & Color	Part #	Flow Indicator Columns & Flow Ranges*		
		Ultra Low Flow	Low Flow	Standard Flow
 Orange Polypropylene Ball*	20460-13	0.037-0.151 L/min	0.19-0.45 L/min	0.26-0.95 L/min
 Green Polypropylene Ball*	20460-08	0.037-0.151 L/min	0.19-0.45 L/min	0.26-0.95 L/min
 Red Celcon Ball*	20460-07	0.075-0.23 L/min	0.23-0.61 L/min	0.38-1.32 L/min
 White Celcon Ball*	20460-18	0.075-0.23 L/min	0.23-0.61 L/min	0.38-1.32 L/min
 Pink Celcon Ball*	20460-14	0.075-0.23 L/min	0.23-0.61 L/min	0.38-1.32 L/min
 Red Glass Ball	20460-06	0.23-0.49 L/min	0.45-0.98 L/min	0.79-2.73 L/min
 1/2" Stainless Steel (302) Ball	20460-05	0.49-0.91 L/min	0.68-2.46 L/min	1.51-6.44 L/min
 7/16" Stainless Steel (302) Ball	20460-10	n/a	n/a	3.78-10.22 L/min

*Density/Viscosity of liquid used can effect operating range. In very dense liquids, balls may float.

Applying Dark Fertilizers & Variable Rate Applications

With some liquid fertilizers and products being darker (e.g. humic acid content), consider a few tips that may help visual representation of flow.

For Red Liquids
(e.g. Paralign Fertilizer)
White backboard for improved visibility.
White celcon ball for red liquids.



For Dark Liquids
(e.g. Humic Acid)
Pink celcon ball for black & dark liquids.



For Variable Rate
Considering using two balls to better illustrate changes in flow rate.
Select a lighter ball for the lower rate, and heavier for the higher rate.



Ball Selection Example

Liquid Density: 1.278 kg/L
Speed: 8 kph
Outlet Spacing: 76cm



Ultra-Low Flow
Rate: 40L/Ha
Flow Rate: 0.458 L/min
Ball: Red Glass



Low Flow
Rate: 100L/Ha
Flow Rate: 1.146 L/min
Ball: 1/2" Stainless



Standard Flow
Rate: 200L/Ha
Flow Rate: 2.292 L/min
Ball: Red Glass

Guide to Building a Liquid Kit with Flow Indicator Manifolds

STEP 1 Select: Manifold-Feed or Isolated-Feed Style Flow Columns

Choose the style of flow column that suits the application equipment being monitored

STEP 2 Determine Flow Indicator Column Size (e.g. Ultra Low Flow, Low Flow, Standard Flow)

Depending on the flow rates required, select the flow column that would provide the best fit to the required flow rate or range. Usually this is accomplished by finding a column size that has your flow rate towards the middle of the range or higher.

STEP 3 Select: Flow Indicator Balls to use

Consult the ball flow chart to determine which balls should be used. It can be optional to use two balls to illustrate a flow rate range.

STEP 4 ORS Check Valves [Optional]

A variety of check valves are available. Typically an ORS to ORS check valve would be used unless adapting a manifold to combo-jet caps. One check valve is required per flow indicator.

STEP 5 ORS Inlet Feeds, Tees, & Strainers

Determine how many manifolds are required, whether the manifolds are fed with a Tee fitting, as well as whether an in-line strainer will be added to each manifold. Determine the size & type of inlet fitting. One set of inlet/tee/strainer is required per manifold.

STEP 6 ORS Metering Orifices [Optional]

Any metering manifold should have a means to meter the flow for each row to keep rows consistent. Without a metering orifice, the flow rates between rows can vary greatly. One metering orifice would be required per flow indicator column.

STEP 7 ORS Outlet

Select the size, and style of outlet to be used for each row of product. Consider applying a small bit of lubricant (e.g. liquid silicone) on the o-ring to aid in easy installation of outlets and other ORS fittings. The outlet would hold the ORS metering orifice, if used.

STEP 8 ORS End Caps & Adapters

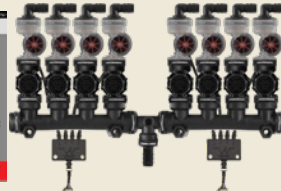
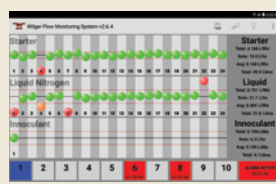
A variety of end caps are available as adapters which can be used for many situations, but typical an ORS end cap would be used. Two end caps are required per manifold if a Tee fitting is used.

Do you plant at night or in low visibility? Take a look at Wilger's Electronic Flow Monitoring (EFM) System

Wilger's row-by-row flowmeter uses the same ORS parts and manifolds, and can be simply added in-line for existing manifolds.

Simply add a flowmeter for each row, and connect the electronic harness to see actual flow rate on each row (up to 196 rows), for flow rates of 0.15-5.8 L/min.

Flowmeter can also be installed on flow indicators to provide greater accuracy



Wilger Electronic Flow Monitoring System

The Electronic Flow Monitoring Advantage

See Any Application with Row-by-Row Accuracy

The Wilger electronic flowmeter (EFM) is a serviceable flowmeter designed & built specifically for agricultural chemical & liquid applications.



Fittings Swivel 360°



Crystal Clear Flowmeter



Superior Chemical Resistance



Perfect for Low Visibility



High Accuracy Flowmeter



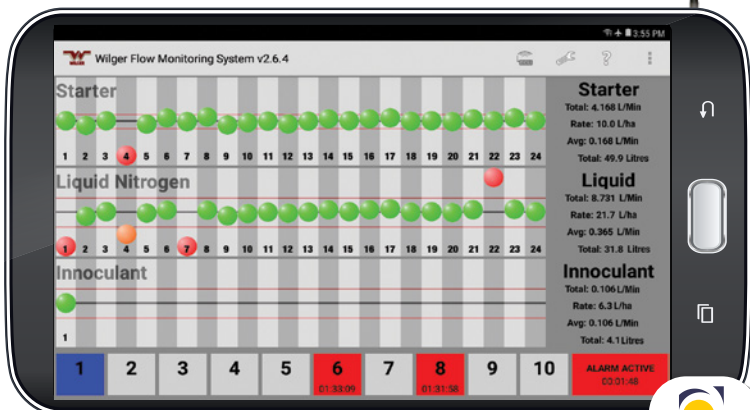
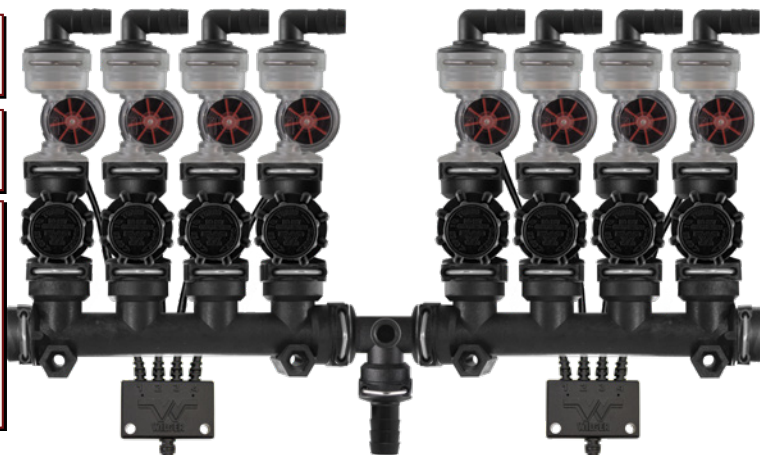
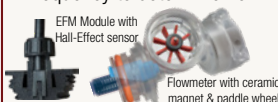
Patented Flowmeter Jets
Canadian Patent No. 2951789
AUS Patent No. 2017376849
U.S. Patent No. 10,845,228

Crystal Clear Flowmeters
Enables easy system troubleshooting & verification

Monitors Huge Flow Range
Accurately measures flow rates of 0.15-5.8 L/min per row

How It Works

High Resolution Hall-Effect Sensor & Ceramic Magnet combo provide accurate pulse frequency to determine flow



FREE EFM APP POWERED BY AGTRON

The Electronic Flow Monitoring system (powered by Agtron) requires an Android 10 OS Tablet or newer.

Trouble-free Connectors
Keyed Deutsch connectors ensure weather-sealed wiring

Monitor up to 3 Products
Simultaneously monitor up to 3 products within the same system

Monitor Any Sized Equip.
Monitor up to 200 rows or outlets on any equipment

Custom High/Low Alarms
Customize threshold alarms

Custom Screen Layouts
Customize screen layouts between products, sections, or any other way

Chemical Resistance
Clear TPX material provides visual & non-stick surface

Easy Retrofit
Easily retrofits to any existing ORS or Flow Indicator Fittings

Simple Harnessing
Composed of an ECU with dairy-chained product nodes & sensors

WIFI communication
ECU generates WIFI straight into the cab

Build your Electronic Flow Monitoring System with help from www.wilger.net



Use the new EFM system parts kit builder available at www.wilger.net. Simply input your implement size and layout and receive a parts list & quote. It just takes a minute.

Need help with EFM system SETUP, USE & Troubleshooting? Check www.wilger.net



EFM System Manual

The manual is accessible online (wilger.net) and within the EFM app via the (?) button. It contains Setup, Troubleshooting, Considerations, Maintenance and more.



Video Setup Guide

The video describes in detail considerations and how to reference sensor locations properly and usage in the EFM system app.



Online Troubleshooting

The dedicated page on the website has the most common recent fixes, guides, and troubleshooting information. Check it for quick troubleshooting to save time.

Wilger Electronic Flow Monitoring System Components

Electronic Flowmeters & Jets

A clear flowmeter that connects to any ORS outlets, with an accurate flow range of 0.15-5.8 L/min, using patented flow stabilizing jets.

20580-00 EFM KIT

includes 4 sizes of EFM jet* with a snap-in strainer (#40250-00)



20580-06 Body Assembly EFM BODY ASSY (no jets, wire side showing)



IMPROVED EFM JET DESIGN
Easier removal & insertion
shipping in 2024



Product	Description	Part#
Electronic Flowmeter Body [0.15-5.8 L/min]	Flowmeter Assy Kit	20580-00
	Body Assembly (no jets)	20580-06
	Body Only (clear plastic)	20580-01
Replacement Jets (without 50 mesh snap-in strainer)	Green (up to 0.45 L/min)	20581-01
	Red (0.37 - 1.17 L/min)	20581-03
	Blue (0.68 to 3.71 L/min)	20581-05
	Black (2.2 to 5.8 L/min)	20581-07

*Jets now include a lip for easier insertion and removal without a strainer

Required Storage for Flowmeters

Wilger Flowmeters are made of a specialty UV-stabilized compound (TPX™) that maximizes chemical resistance, providing compatibility for a huge range of chemical applications. As with any plastic, UV exposure degrades the flow indicator columns.

To maximize flowmeter clarity & longevity, completely cover the flowmeters from UV exposure (sun/etc.) whenever possible.

Electronic Flowmeter Manifolds

Pre-assembled manifolds [1-4 Outlets] with a flowmeter and check valve. Simply assemble manifolds, add inlet/outlets, caps and sensor cables.

20644-00 Four Outlet EFM Manifold Kit w/ Check Valve

Kit includes 20574-00, 4x 20580-00, 4x 20556-00



How to Complete a Manifold

- Stack manifold sections to desired size.
 - Add ORS inlet or center-fed tee (#20526-00)
 - Add ORS end-cap (2x if TEE is used)
 - Add ORS outlets & metering orifice (opt.)
- Ensure hose/tube connections minimize strain/weight on manifold parts and joints.

Manifold Outlets	Check Valve*	Part#
1 EFM Outlet	Straight	20641-00
	90°	20631-00
2 EFM Outlet	Straight	20642-00
	90°	20632-00
3 EFM Outlet	Straight	20643-00
	90°	20633-00
4 EFM Outlet	Straight	20644-00
	90°	20634-00

*0.3bar check valves available: change "-00" to "-P4". For ultra-low flow (<0.01 us gpm), 0.3bar may be required.



DEMO ECU & Small Planter Kit (16 or less rows, non-expandable)

The following is a Compact ECU DEMO unit, which can be used for showroom/demonstrations, but also functional for planters with 16 rows or less being monitored. The CAN to POWER/USB adapter can be used where WIFI is not an option (tradeshows, etc.). The unit also broadcasts via WIFI.

Product	Description of DEMO Kit Parts	Part#
DEMO ECU	DEMO ECU with built-in 16CH node. One per Demo unit (requires 12v x 1.25 amp)	20625-01
DEMO 16CH Harness	DEMO ECU Harness, with A/B/C/D for up to 4 quad-sensor cables to be connected	20625-02
DEMO Power Supply Harness	CAN to USB (for wired tablet without WIFI) & 12v Power Cable (2-wire, 2m length). USB-A port is powered to supply tablet power.	20625-03
Quad-Sensor Cable	A normal quad-sensor cable, used in any Wilger EFM systems via 6-pin connector. Connects for the A/B/C/D of 20625-02. Order 4x 20585-00 for full 16 sensors.	4x 20585-00
Antenna (7")	If ECU connection is via WIFI, an antenna should be used to connect to the tablet.	20603-03
EFM Manifolds	1,2,3, or 4-outlet manifolds with check valves and an included EFM flowmeter. Simply order inlet/outlets/tee and end caps to complete manifold.	20644-00 (4-outlet)



Example 16-row manifold for demonstration

EFM DEMO System Parts Checklist

ELECTRONICS Parts	PLUMBING Parts
☐ 1x DEMO ECU (#20625-01)	☐ 4x 4-Outlet Manifolds (#20644-00)
☐ 1x Demo Product Harness (#20625-02)	☐ 1x ORS Tee (#20526-00)
☐ 1x Demo Power/USB Cable (#20625-03)	☐ 1x 90° 1/2" Hose Inlet (#20513-00)
☐ 1x Antenna (#20603-03)	☐ 16x 1/4" Push-in-tube (#20516-00)
☐ 4x Quad-sensor cable (4x #20585-00)	☐ 2x End Cap (#20521-00)
☐ 1x Android Tablet & Mount (non-Wilger) (e.g. Samsung Tab A8)	☐ 16x Metering Orifice (#21500-v03)
	☐ 1x 5GPM Electric pump (non-Wilger)
	Small water tank w/ plumbing

Compact ECU *parts not to scale* 20625-01



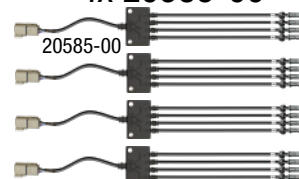
Switch for Wired USB Mode

20625-03 CAN to 12v Power Harness

20625-02 DEMO ECU Product Harness*

*Demo harness is not expandable

Quad-sensor cable Connects to A / B / C / D 4x 20585-00



Want to show what the system looks like, without a pump? Download the app, enter info, and plug in some example sensor information, and run the app in TEST/ DEMO mode. (Simulated info) Contact Wilger for more info.

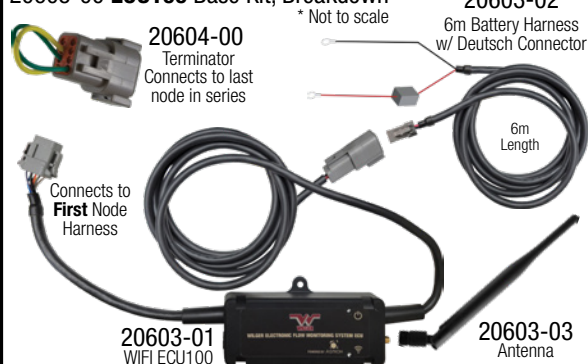
Wilger Electronic Flow Monitoring ECUs & Electronics

Base Electronic ECU & Kits for EFM Systems (expandable up to 196 rows/sensors)

Electronic Control Units (ECU) & components used in EFM systems. ECUs are used to monitor up to 196 outlets, across up to 3 products.

Product	Kit Includes	Part#
ECU100 Base Kit	ECU100, 6m 12v Battery Harness (with fuse), Terminator, Antenna	20603-00
ECU200 Base Kit	ECU200, CAN to 12v Harness, 6m 12v Battery Harness (with fuse), ECU200 Node Harness (#20606-02), Terminator, Antenna, 4x Quad-sensor cables (#20585-00)	20606-00
ECU Splitter Kit	ECU Splitter Cable, Terminator	20605-00
ECU/Node to Node	3.5m Extension Harness (Node to ECU/Node)	20616-12
Extension Harness	7.3m Extension Harness (Node to ECU/Node)	20616-24

20603-00 ECU100 Base Kit, Breakdown*



20603-02

6m Battery Harness w/ Deutsch Connector

NEW ECU100 or ECU200? Whats the difference?

ECU100 and ECU200 share identical function as a controller. Both create their own WIFI signal to the tablet in the cab, sending row-by-row flowmeter information. They differ somewhat in the first node connected, and potentially the use of other components, the harnesses, and cables used. The ECU200 effectively integrates the first 16CH node, as well as provides a CAN plug for future-proofed connections.



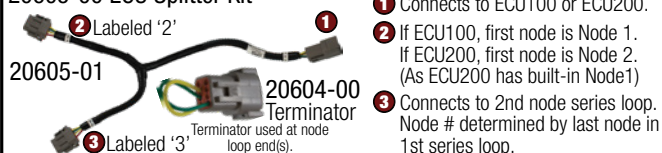
ECU100



ECU200

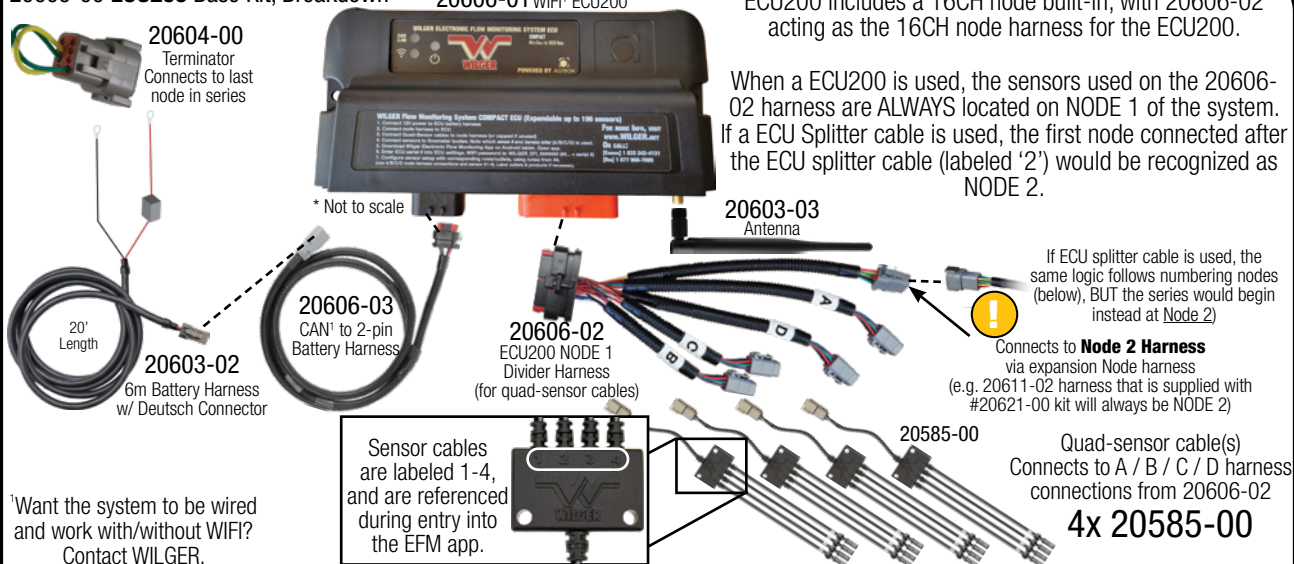
ECU Type	ECU100	ECU200
Combined Node?	No integrated 16CH node	First 16CH node built-in
Expandable Size?	Yes, up to 196 sensors	Yes, up to 196 sensors
Power Cable	2-pin 12v PWR harness	CAN to 2-pin 12v PWR harness
Compatibility	Both are compatible to all EFM system components	

20605-00 ECU Splitter Kit



- 1 Connects to ECU100 or ECU200.
- 2 If ECU100, first node is Node 1. If ECU200, first node is Node 2. (As ECU200 has built-in Node1)
- 3 Connects to 2nd node series loop. Node # determined by last node in 1st series loop.

20606-00 ECU200 Base Kit, Breakdown*



ECU200 includes a 16CH node built-in, with 20606-02 acting as the 16CH node harness for the ECU200.

When a ECU200 is used, the sensors used on the 20606-02 harness are ALWAYS located on NODE 1 of the system. If a ECU Splitter cable is used, the first node connected after the ECU splitter cable (labeled '2') would be recognized as NODE 2.

If ECU splitter cable is used, the same logic follows numbering nodes (below), BUT the series would begin instead at Node 2)

Connects to **Node 2 Harness** via expansion Node harness (e.g. 20611-02 harness that is supplied with #20621-00 kit will always be NODE 2)

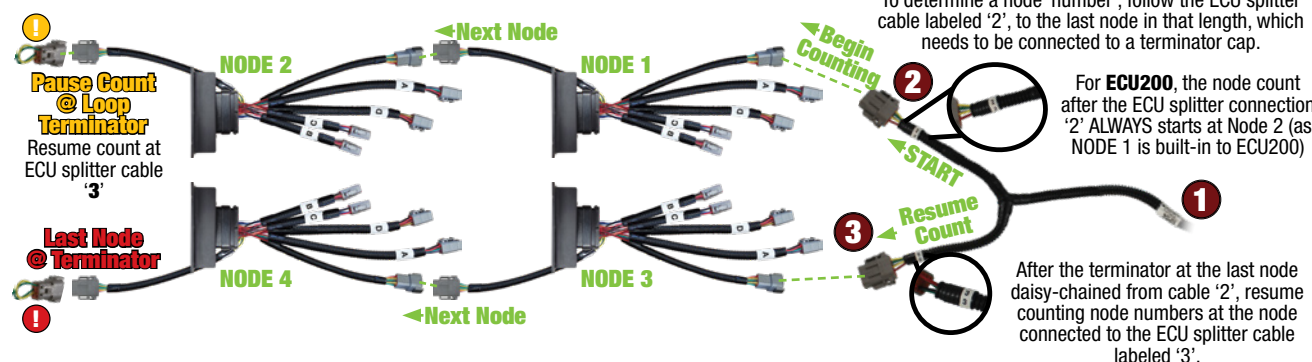
Quad-sensor cable(s) Connects to A / B / C / D harness connections from 20606-02
4x 20585-00

*Want the system to be wired and work with/without WIFI? Contact WILGER.

Sensor cables are labeled 1-4, and are referenced during entry into the EFM app.

Using an ECU Splitter Cable with ECU100 - Navigating 'Node Numbers' & Locations

Example: NODE 3 was designated #3 by position, due to NODE 2 closing the series with a terminator. Terminators are required for the end of each node daisy-chained loop.



To determine a node 'number', follow the ECU splitter cable labeled '2', to the last node in that length, which needs to be connected to a terminator cap.

For ECU200, the node count after the ECU splitter connection '2' ALWAYS starts at Node 2 (as NODE 1 is built-in to ECU200)

After the terminator at the last node daisy-chained from cable '2', resume counting node numbers at the node connected to the ECU splitter cable labeled '3'.

Wilger Electronic Flow Monitoring System Components

16 Channel (16CH) Product Node Kits & Components

16CH Product nodes provide communication between sensors and ECU.

Product	Description	Part#
16CH Node Kit	incl. 16CH Node, 16CH Harness, 4x Quad-sensor cables	20621-00
Quad-Sensor Cable	4-Sensor Cable (55cm long) for 16CH Node	20585-00
16CH Node/Harness	incl. 16CH Product Node, 16CH Node Harness	20611-00
16CH Harness Cap	16CH Harness Cover Cap	20612-00
Sensor Cover Cap	Covers a single sensor on a quad-sensor cable	20585-01
Node to Quad-Sensor Extensions	1.8m Extension Cable (16CH Harness to quad-sensor cable)	20615-06
	3.6m Extension Cable (16CH Harness to quad-sensor cable)	20615-12

Capping Unused Connections & Sensors

For proper function of your EFM system, each unused connection must be sealed with a node harness cover cap, sensor cap, or terminator. Unsealed Connections have increased chance of shorts, electrical shock, or damage to the system or equipment.

Unused Node Connections

Cap unused A/B/C/D with 16CH node harness
#20612-00

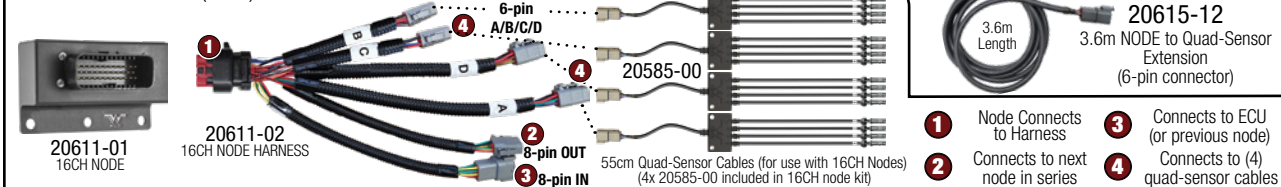
Terminators

Cap all 'last node' connections
#20604-00

Unused Sensors

Cap unused sensors with rubber cap
#20585-01

20621-00 16 CHANNEL (16CH) NODE KIT BREAKDOWN



Limited Stock

4 Channel (4CH) Product Node Kits & Components

4 Channel Product Nodes & kits provide communication between sensors and ECU. Sensor cables cannot be interchanged between 16CH and 4CH node harnesses. 4CH nodes and sensors are available in limited stock, as Wilger is transitioning to using the 16CH node and components as standard.

Product	Description	Part#
4CH Node Kit	incl. 4CH Node, 4CH Harness, 4x 6" single-sensor cables	20620-00
4CH Node/Harness	incl. 4CH Product Node, 4CH Node Harness	20608-00
4CH Harness Cap	4CH Harness Cover Cap	20609-00
Single-Sensor Cables (lim. qty)	15cm single-sensor Cable for 4CH Node harness	20584-00
	300cm single-sensor Cable for 4CH Node harness	20584-10

Capping Unused Connections

For proper function of your EFM system, each unused connection must be sealed with a 4CH node harness/sensor cover cap, or terminator.

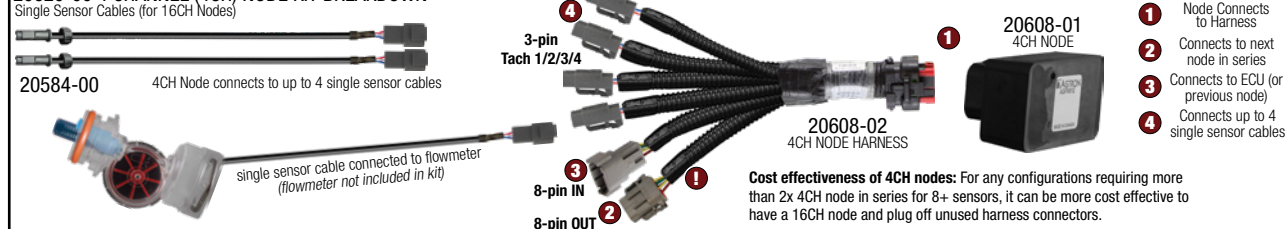
Unused Sensor Connections

Cap unused 4CH node harness connections
#20609-00

Terminators

Cap all 'last node in series' connections
#20604-00

20620-00 4 CHANNEL (4CH) NODE KIT BREAKDOWN



ECU Splitters, Extended Harnesses & Cables

A variety of harnesses available for alternate EFM system configurations or replacement cables and caps

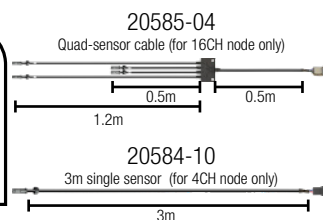
Product	Description	Part#
12v Power Extension	Extends 2-pin power connection by 10m	20603-07
Antenna Extension	Extends connection to ECU antenna, 10m length	20603-05
1.2m quad-sensor cbl	1.2m Long Quad-sensor cable (1.2m/0.5m/0.5m/1.2m)	20585-04
3m Single Sensor Cbl	3m long single sensor cable	20584-10
Node to Node Extensions	3.6m Extension Cable (8-pin Harness male to 8-pin female)	20616-12
	7.2m Extension Cable (8-pin Harness male to 8-pin female)	20616-24
Node to Quad-Sensor Extensions	1.8m Extension Cable (16CH Harness to quad-sensor cable)	20615-06
	3.6m Extension Cable (16CH Harness to quad-sensor cable)	20615-12
	7.2m Extension Cable (16CH Harness to quad-sensor cable)	20615-24

10m Antenna Extension

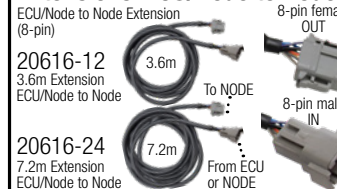
10m co-axial antenna extension cable to bring ECU antenna closer to the tractor

20603-05 10m Extension

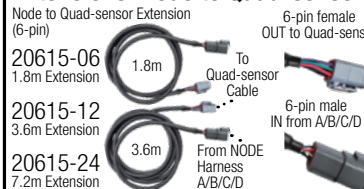
ECU antenna has 30m range (15m one-way)



Extensions: ECU/Node to Node



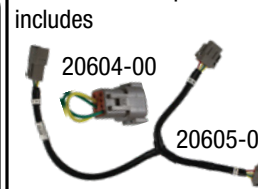
Extensions: Node to Quad-sensor



12v power Extension



20605-00 ECU Splitter Kit includes



Flowmeter Component Parts

Electronic flow monitoring system parts and components are easily replaceable. For individual component parts that were not listed in the above product breakdowns, find the below.

20580-06	EFM, Body Assy, TPX, ORS (no jets, body assy only)
20580-01	EFM, Body Only, TPX
20580-02	EFM, Module c/w O-ring (no sensor)
20580-08	EFM, Impeller Assembly (20580-09 + 20580-10)
20580-10	EFM, Impeller Magnet, Ceramic
20580-11	EFM, Impeller Axle Pin
20580-13	EFM, O-Ring, #119, VITON® (for EFM module)
20583-00	EFM Sensor Cable, Single w/o Connector
20585-01	EFM sensor rubber cover (for unused sensor cables)



20583-00* *Non-stocked/Custom Order

EFM Retrofit Options



The EFM can easily retrofit into existing flow indicator manifolds.

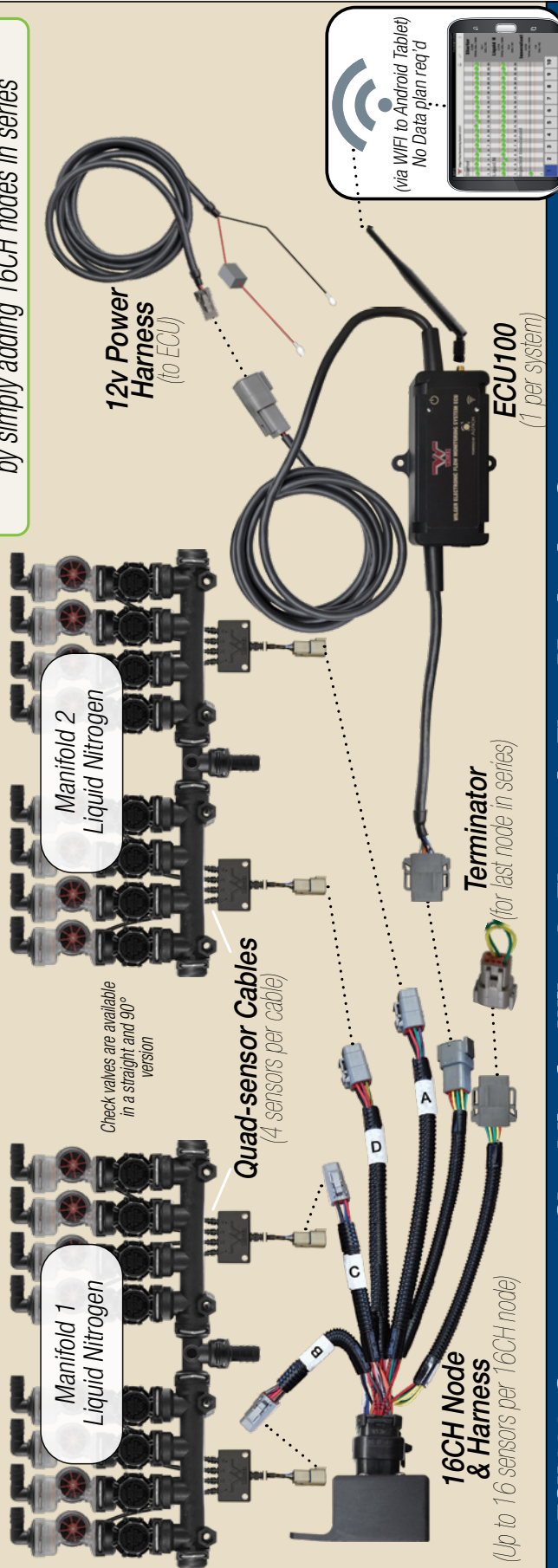
The upgrade gives visual & electronic feedback for the next step of accuracy!

More info @

www.WILGER.NET

ECU100 on a 16-row Planter, applying liquid fertilizer

Expand system to larger planters or implements by simply adding 16CH nodes in series



ECU100: Component Checklist for Wilger's Electronic Flow Monitoring System

As equipment & implements greatly vary, this is a simplified approach assuming the implement is fairly standard and evenly spread, with the manifold centrally located. It may be cost effective to move manifolds from the wings of the implement, to the center.

1 Order 1 ECU100 kit per system. (#20603-00)

2 Add the # of outlets (including multiples for monitoring multiple products). Divide the total # of outlets by 16. Round up to nearest whole number. Order that many 16CH Node kits. (#20621-00) 4CH Node kits can be effective for "extra" outlets in systems, but 16CH node kits are typically cost effective.

3 Order 1 EFM assembly kit (#20580-00) per outlet (incl. multiples for monitoring multiple products). Alternatively, order EFM manifold kits (#20631-00 to #20634-00) to fit your requirements for sections.

4 Order 1 ORS Outlet (Page 16) & 1 ORS Check Valve (#20551-00) per EFM body. Order manifolds & plumbing components (& end caps) suited for the implement size.

5 [Optional if metering orifice req'd] Order an ORS office for each outlet, ensure proper metering orifice size for each rate. Use Tip Wizard @ www.wilger.net or via app, to ensure proper sizing.

EFM System Checklist for ECU100

ELECTRONICS Parts

- ☐ 1x ECU100 KIT per system
- ☐ 1x 16CH Node Kit per 16 outlets
- ☐ 1x Flowmeter (EFM) per outlet
- ☐ Extension harnesses if req'd
- ☐ 1x Android Tablet (Android 10 OS or newer. Avoid non-brand name tablets that may not be running full OS)

PLUMBING Parts

- ☐ 1x ORS Manifold Outlet per outlet
- ☐ 1x ORS Outlet Fitting per outlet
- ☐ 1x ORS Check Valve per outlet
- ☐ 1x Inlet Feed or Tee per manifold
- ☐ 1x End Cap per manifold (2x if center Tee)
- ☐ 1x Metering Orifice per outlet (or alt.)

For more information, start the conversation on building your EFM system with your Wilger dealer, and for more pictures/information, visit our website at: www.WILGER.NET

Build your EFM system liquid kit on www.WILGER.NET

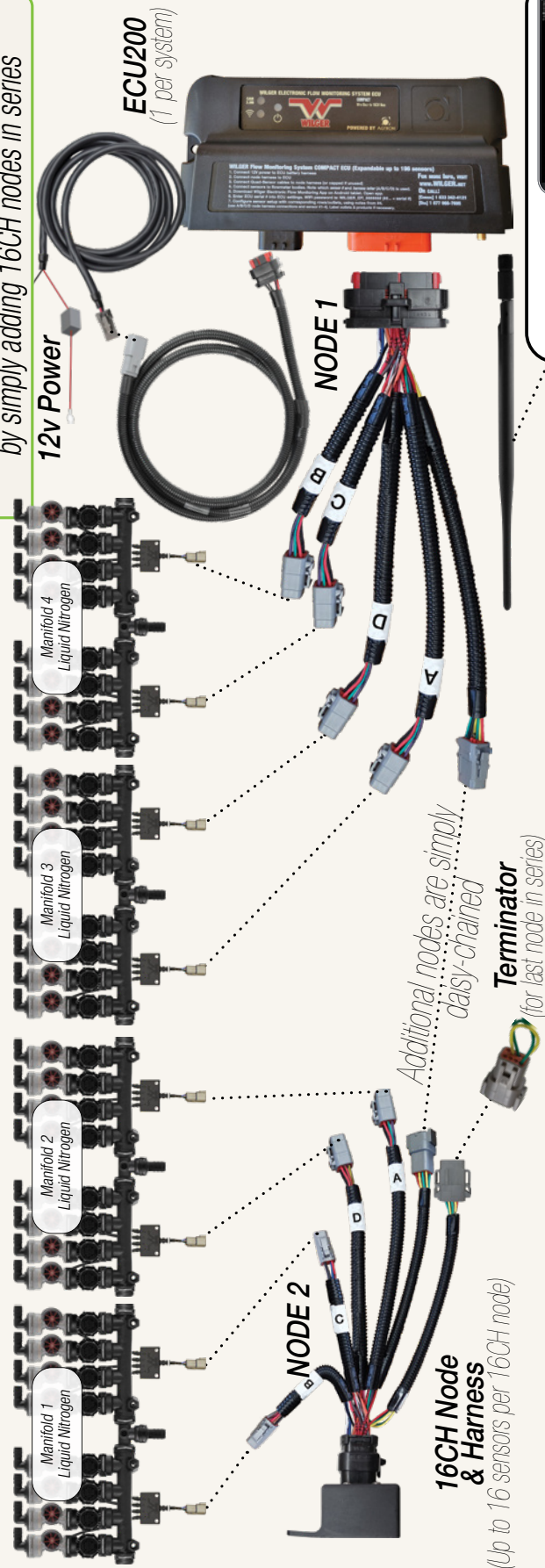
Use the new EFM system parts kit builder available at www.wilger.net. Simply input your implement size and layout and receive a parts list & quote. Simple as that.

EFM VIDEO TUTORIALS - Setting up EFM App on Android Tablet

Make sure to take advantage of video tutorials on initial setup and planning of EFM system app on your Android Tablet. Videos on YOUTUBE, or accessible from www.WILGER.NET

ECU200 on a 32-row Planter, applying liquid fertilizer

Expand system to larger planters or implements by simply adding 16CH nodes in series



ECU200: Component Checklist for Wilger's Electronic Flow Monitoring System

- Since the ECU200 includes the FIRST 16CH product node, it changes the ordering checklist slightly.
- Order 1 ECU200 kit per system. (#20606-00)
- Add the # of outlets (incl. multiples for monitoring multiple products). First subtract 16 outlets from the total (as the first 16 are included with ECU200), then divide the total # of outlets by 16. Round up to nearest whole number. Order that many 16CH Node kits. (#20621-00)
4CH Node kits can be effective for 'extra' outlets in systems, but 16CH node kits are typically cost effective.
- Order 1 EFM assembly kit (#20580-00) per outlet (incl. multiples for monitoring multiple products)
Alternatively, order EFM manifold kits (#20631-00 to #20634-00) for pre-built manifolds with flowmeters installed.
- Order 1 ORS Outlet & 1 ORS Check Valve (#20551-00 style) per EFM body.
Order manifolds & plumbing components (& end caps) suited for the implement size.
[Optional if metering orifice req'd] Order an ORS orifice for each outlet, ensure proper metering orifice size for each rate. Use Tip Wizard @ www.wilger.net or via app, to ensure proper sizing.

via WiFi to Android Tablet
No Data plan req'd

EFM System Checklist for ECU200

ELECTRONICS Parts

- ☐ 1x ECU200 KIT per system, incl. 1st 16CH
- ☐ 1x 16CH Node Kit per addtl. 16 outlet
- ☐ 1x Flowmeter (EFM) per outlet
- ☐ Extension harnesses if req'd
- ☐ 1x Android Tablet [Android 8.0 OS or newer]

PLUMBING Parts

- ☐ 1x ORS Manifold Outlet per outlet
- ☐ 1x ORS Outlet Fitting per outlet
- ☐ 1x ORS Check Valve per outlet
- ☐ 1x Inlet Feed or Tee per manifold
- ☐ 1x End Cap per manifold [2x if center Tee]
- ☐ 1x Metering Orifice per outlet [or alt.]

For more information, start the conversation for your EFM system with your Wilger dealer, and for more pictures/information, visit our website at: www.WILGER.NET

Build your EFM system liquid kit on www.WILGER.NET

Use the new EFM system parts kit builder available at www.wilger.net.
Simply input your implement size and layout and receive a parts list & quote.
Simple as that.

EFM VIDEO TUTORIALS - Setting up EFM App on Android Tablet

Make sure to take advantage of video tutorials on initial setup and planning of EFM system app on your Android Tablet. Videos on YOUTUBE, or accessible from www.WILGER.NET

4 System will now monitor each individual flowmeter individually (on detailed snapshot screen and alarms), by product (with visual balls), and as a whole system.

Application Monitoring Screen

Wilger Flow Monitoring System v2.6.4

Starter

Total: 4.168 L/Min
Rate: 10.0 L/ha
Avg: 0.168 L/Min
Total: 49.9 Litres

Liquid Nitrogen

Total: 8.731 L/Min
Rate: 21.7 L/ha
Avg: 0.365 L/Min
Total: 31.8 Litres

Innoculant

Total: 0.106 L/Min
Rate: 6.3 L/ha
Avg: 0.106 L/Min
Total: 4.1 Litres

Legend:

- Green circle: 0.1 L/Min
- Red circle: 0.2 L/Min
- Orange circle: 0.3 L/Min
- Yellow circle: 0.4 L/Min
- Light green circle: 0.5 L/Min
- Light blue circle: 0.6 L/Min
- Light purple circle: 0.7 L/Min
- Light pink circle: 0.8 L/Min
- Light orange circle: 0.9 L/Min
- Light yellow circle: 1.0 L/Min
- Light green circle: 1.1 L/Min
- Light blue circle: 1.2 L/Min
- Light purple circle: 1.3 L/Min
- Light pink circle: 1.4 L/Min
- Light orange circle: 1.5 L/Min
- Light yellow circle: 1.6 L/Min
- Light green circle: 1.7 L/Min
- Light blue circle: 1.8 L/Min
- Light purple circle: 1.9 L/Min
- Light pink circle: 2.0 L/Min
- Light orange circle: 2.1 L/Min
- Light yellow circle: 2.2 L/Min
- Light green circle: 2.3 L/Min
- Light blue circle: 2.4 L/Min
- Light purple circle: 2.5 L/Min
- Light pink circle: 2.6 L/Min
- Light orange circle: 2.7 L/Min
- Light yellow circle: 2.8 L/Min
- Light green circle: 2.9 L/Min
- Light blue circle: 3.0 L/Min
- Light purple circle: 3.1 L/Min
- Light pink circle: 3.2 L/Min
- Light orange circle: 3.3 L/Min
- Light yellow circle: 3.4 L/Min
- Light green circle: 3.5 L/Min
- Light blue circle: 3.6 L/Min
- Light purple circle: 3.7 L/Min
- Light pink circle: 3.8 L/Min
- Light orange circle: 3.9 L/Min
- Light yellow circle: 4.0 L/Min
- Light green circle: 4.1 L/Min
- Light blue circle: 4.2 L/Min
- Light purple circle: 4.3 L/Min
- Light pink circle: 4.4 L/Min
- Light orange circle: 4.5 L/Min
- Light yellow circle: 4.6 L/Min
- Light green circle: 4.7 L/Min
- Light blue circle: 4.8 L/Min
- Light purple circle: 4.9 L/Min
- Light pink circle: 5.0 L/Min
- Light orange circle: 5.1 L/Min
- Light yellow circle: 5.2 L/Min
- Light green circle: 5.3 L/Min
- Light blue circle: 5.4 L/Min
- Light purple circle: 5.5 L/Min
- Light pink circle: 5.6 L/Min
- Light orange circle: 5.7 L/Min
- Light yellow circle: 5.8 L/Min
- Light green circle: 5.9 L/Min
- Light blue circle: 6.0 L/Min
- Light purple circle: 6.1 L/Min
- Light pink circle: 6.2 L/Min
- Light orange circle: 6.3 L/Min
- Light yellow circle: 6.4 L/Min
- Light green circle: 6.5 L/Min
- Light blue circle: 6.6 L/Min
- Light purple circle: 6.7 L/Min
- Light pink circle: 6.8 L/Min
- Light orange circle: 6.9 L/Min
- Light yellow circle: 7.0 L/Min
- Light green circle: 7.1 L/Min
- Light blue circle: 7.2 L/Min
- Light purple circle: 7.3 L/Min
- Light pink circle: 7.4 L/Min
- Light orange circle: 7.5 L/Min
- Light yellow circle: 7.6 L/Min
- Light green circle: 7.7 L/Min
- Light blue circle: 7.8 L/Min
- Light purple circle: 7.9 L/Min
- Light pink circle: 8.0 L/Min
- Light orange circle: 8.1 L/Min
- Light yellow circle: 8.2 L/Min
- Light green circle: 8.3 L/Min
- Light blue circle: 8.4 L/Min
- Light purple circle: 8.5 L/Min
- Light pink circle: 8.6 L/Min
- Light orange circle: 8.7 L/Min
- Light yellow circle: 8.8 L/Min
- Light green circle: 8.9 L/Min
- Light blue circle: 9.0 L/Min
- Light purple circle: 9.1 L/Min
- Light pink circle: 9.2 L/Min
- Light orange circle: 9.3 L/Min
- Light yellow circle: 9.4 L/Min
- Light green circle: 9.5 L/Min
- Light blue circle: 9.6 L/Min
- Light purple circle: 9.7 L/Min
- Light pink circle: 9.8 L/Min
- Light orange circle: 9.9 L/Min
- Light yellow circle: 10.0 L/Min

Summary:

Starter	Liquid Nitrogen	Innoculant
4.168 L/Min	8.731 L/Min	0.106 L/Min
10.0 L/ha	21.7 L/ha	6.3 L/ha
0.168 L/Min	0.365 L/Min	0.106 L/Min
49.9 Litres	31.8 Litres	4.1 Litres

Alarm Status: ALARM ACTIVE (00:01:48)

Now that basic setup is complete, explore the individual row detailed screens, application widgets, advanced calibration screen, and equipment profile saving/recalling as well.