Instructions - Parts

Warm Melt Communications Gateway Module Installation Kit

3A5484A

EN

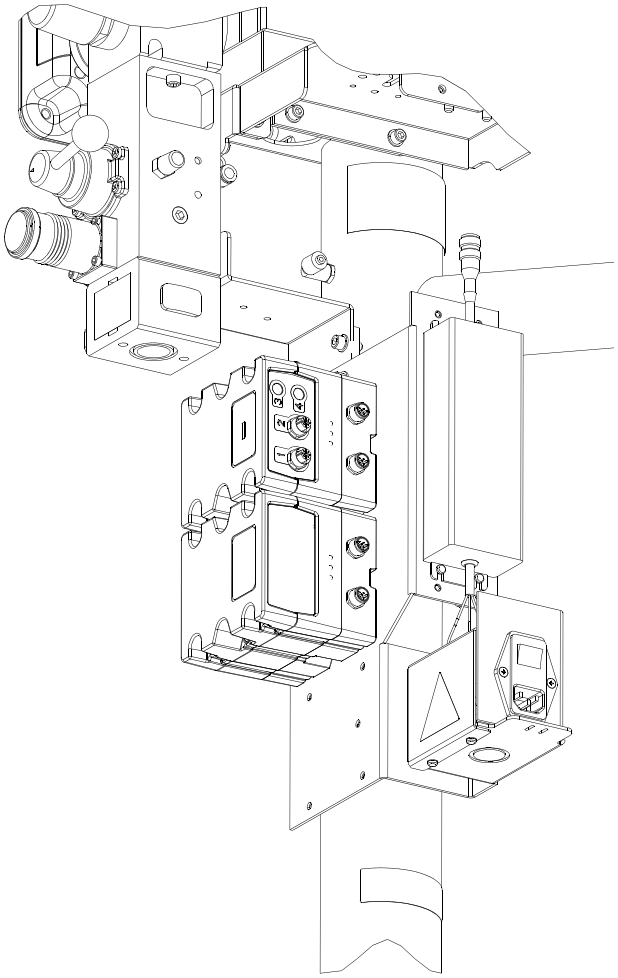
For use with electric crossover warm melt supply systems and auxiliary heat boxes to provide fieldbus communications abilities. For professional use only.

Not approved for use in explosive atmospheres or hazardous locations.

Development Kit CGK020

Important Safety Instructions

Read all warnings and instructions in this manual and in your warm melt supply system manual. Save all instructions.



Contents

Related Manuals

Manual	Description
312864	Communications Gateway Module, Instructions - Parts
313296	Warm Melt Supply Systems, Instructions - Parts
313528	Tandem Supply System, Operation
313529	Tandem Supply System, Repair - Parts
313527	Supply System, Repair - Parts

Available Communication Gateways

The CGK020 Development Kit does not contain a Communication Gateway Module (CGM). There are 4 different CGM options, as shown in the table below. In addition to this kit, one of the available CGM options must be selected based on the desired communication format (field protocol type).

CGM Part No.	Fieldbus
CGMDN0	DeviceNet
CGMEP0	EtherNet/IP
CGMPB0	PROFIBUS
CGMPN0	PROFINET

Typical Configuration

Warm Melt Supply Systems

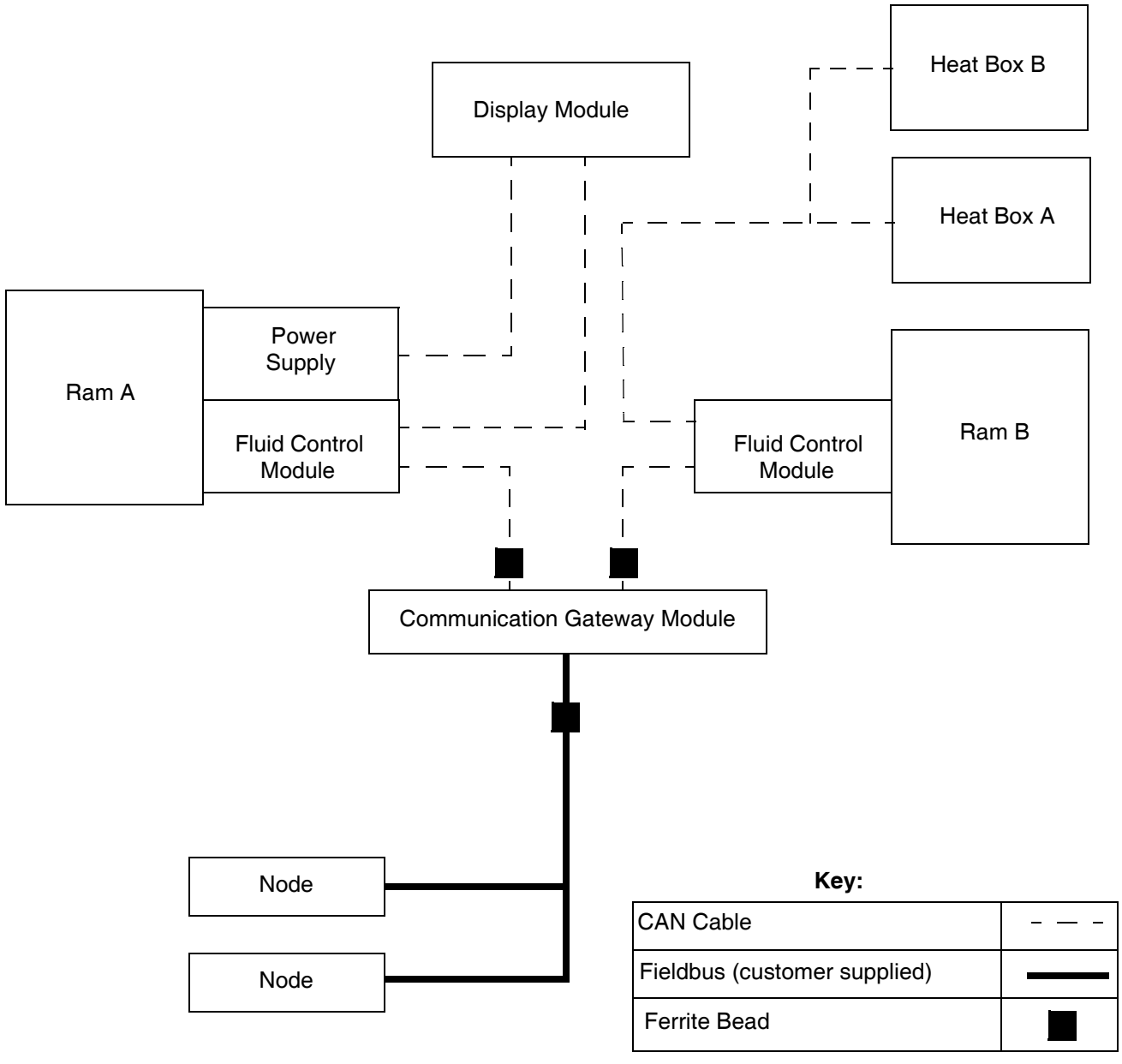


FIG. 1: Typical Installation

Overview

The CGK020 Development Kit allows the user to program a generic CGM and controlling logic (typically a PLC) to the format required to control and monitor data in a Warm Melt system.

The Communications Gateway Module (CGM) provides a control link between a warm melt supply system and an auxiliary heat box, which are Graco Control Architecture based systems, and a selected fieldbus. This provides the means for remote monitoring and control by external automation systems.

Data is provided by the CGM to the fieldbus by a data-map supplied on a map token. Data provided by the CGM to the fieldbus depends on which Graco Control Architecture based system and fieldbus are connected. The data map is defined for this pairing.

See **Available Internal Data** on page 13 for a list of internal data from the supply system that can be viewed or modified by your fieldbus master.

Installation

⚠ WARNING

ELECTRIC SHOCK HAZARD
All electrical wiring must be done by a qualified electrician and comply with all local codes and regulations.

PERSONAL PROTECTIVE EQUIPMENT
Wear appropriate protective equipment when in the work area to help prevent serious injury, including eye injury, hearing loss, inhalation of toxic fumes, and burns.

NOTE: See the Communications Gateway Module, Instructions - Parts manual for signals associated with the module status LEDs.

1. Remove power from the supply system.
2. Follow the **Pressure Relief Procedure** in your Warm Melt Supply Systems Instructions-Parts manual.
3. Remove the shrouds from the right side of Ram A. See the Supply Systems Repair-Parts manual or the Warm Melt Supply Systems Instructions-Parts manual for shroud removal procedure.
4. Remove the access cover (C), loosen the two screws (D) and remove module (A) from the base (B).

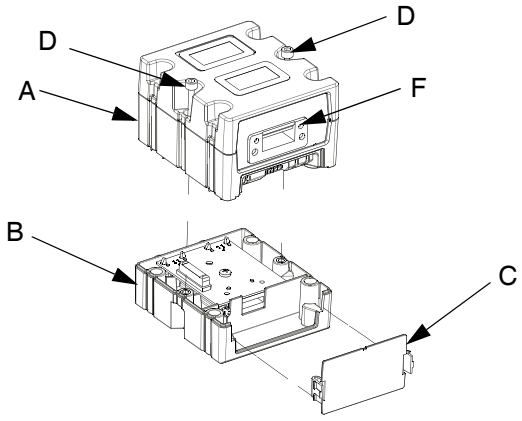


FIG. 2: CGM

5. Insert four screws (6) through the top of the base (B) and tighten to the mounting bracket.

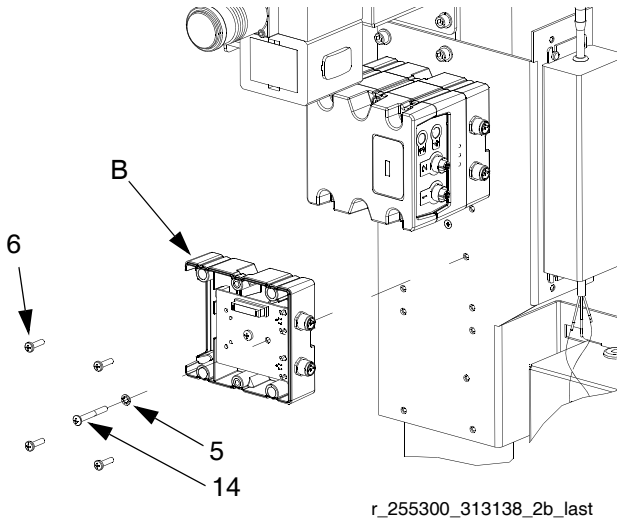


FIG. 3: Mount Base on Mounting Bracket

6. Install the grounding screw (14) through the washer (5) and tighten so that the grounding screw (14) threads into the mounting bracket. See FIG. 3.
7. Mount module (A) on the base (B) with two screws (D). See FIG. 2.

8. If already connected, disconnect the CAN cable (C1) from the fluid control module (FCM) on Ram A.

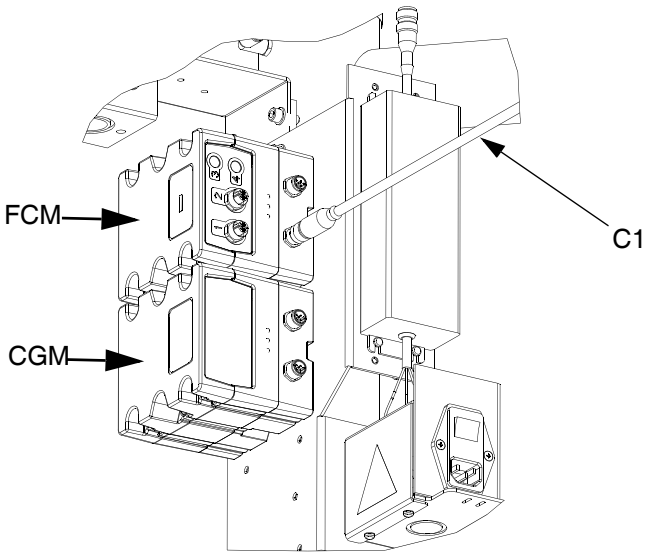


FIG. 4: CGM and FCM on Ram A

9. Connect the CAN cable (C1) to the lower CAN connector (H) on the CGM and fluid control module on Ram B. See FIG. 4 and FIG. 5.

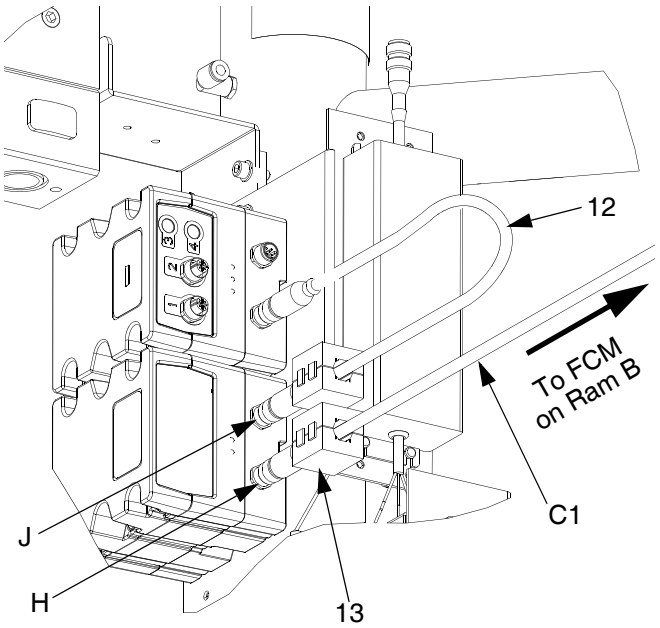


FIG. 5: CGM and FCM Connections on Ram A

10. Connect the supplied CAN cable (12) to the upper CAN connector (J) on the CGM and fluid control module on Ram A. See FIG. 4 and FIG. 5.

11. Clamp two ferrite beads (13) on the CAN cables adjacent to the CGM. See FIG. 1 and FIG. 5 for bead locations.

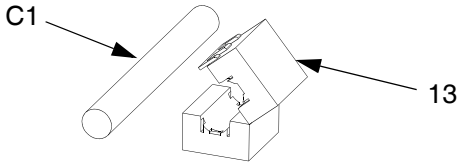


FIG. 6: Clamp ferrite bead

12. Use the map token (7) to install the data map. Refer to the Install or Update Data Map section of the Communications Gateway Module manual for instructions.

13. Attach the access cover (C). See FIG. 2.

14. Replace the shrouds. See the Supply Systems Repair-Parts manual or the Warm Melt Supply Systems Instructions-Parts manual for the shroud assembly procedure.

15. Connect the fieldbus cable (customer supplied) to the fieldbus connector (F). See FIG. 2.

16. Clamp the ferrite bead (13) to the fieldbus cable adjacent to the CGM. See FIG. 1 on page 3 for bead locations. See FIG. 6.

NOTICE

To prevent damage to the cable, route the fieldbus cable to avoid interference with moving parts.

NOTE: Review the current fieldbus cable standards for specifications and maximum lengths.

Display Details

Power up Screen

The following screen appears when the display module is powered up. It remains on while the display module runs through initialization and establishes communication with other components in the system.

FIG. 7: Power Up Screen

Menu Bar

The menu bar appears at the top of the screen, and consists of the following components.

FIG. 8: Menu Bar

Date and Time

The date and time are always displayed in one of the following formats. The time is always displayed as a 24-hour clock.

- DD/MM/YY HH:MM
- MM/DD/YY HH:MM

Navigation

The navigation section, which is to the right of the date and time, indicates the active screen with the center, highlighted icon. The left and right arrows indicate there are more screens that can be accessed within a mode.

Status

The current system status is displayed on the right of the menu bar. If there is an error, an event icon and either a text description of the event or the standard error code for the event is displayed. If there are no errors, nothing is displayed.

Mode

The mode section displays the current system mode. The current mode is highlighted.

Soft Keys

Icons above the soft keys indicate which mode or action is associated with each soft key. Soft keys that do not have an icon above them are not active in the current screen.

NOTICE

To prevent damage to soft key buttons, do not press the buttons with sharp objects such as pens, plastic cards, or fingernails.

Jump In/Jump Out

In screens that have editable fields, press  to access the fields and make changes. When changes are complete, press  again to exit the editable version of the screen.

Navigation within Screens

Press  to open drop-down menus on Setup screens. Also, press  to enter your changes or make a selection.

Press   to navigate to new screens and to navigate left and right within a screen. Also press   to select digits within a field.

Press   to navigate to new screens and to navigate up and down within a screen. Also press   to move between selections within a drop-down menu, and to increment or decrement numbers/characters within a field.

Setup

Use the map token (7) to install or update the data map. See step 12 of **Installation**.

Use the display to set parameters for the CGM on the supply system and selected fieldbus. See **Display Details**, page 6, for display module key functions.

Fieldbus Configuration Screens

The Fieldbus screens are shown only if a CGM is connected to your system. Find your fieldbus type in the following table to identify parameters you can view or edit.

1. Access the fieldbus screens from the setup mode screens. Refer to the Warm Melt Supply System Instructions-Parts manual for instructions.

2. From the system setup screen, press  twice to display the device address screen.

NOTE: The fieldbus screen will not display if the CAN cables are not connected. Ensure that all CGM CAN cables are connected.

Fieldbus Screens	Page
PROFIBUS	8
PROFINET	9
DeviceNet	11
EtherNet/IP	11

Set Value and Reset Fieldbus Screen

This screen will display after certain fieldbus parameters are modified, which indicate the CGM will momentarily disconnect from the fieldbus to reset to the new value.

Select  to save changes and reset, or  to go back to previous settings.

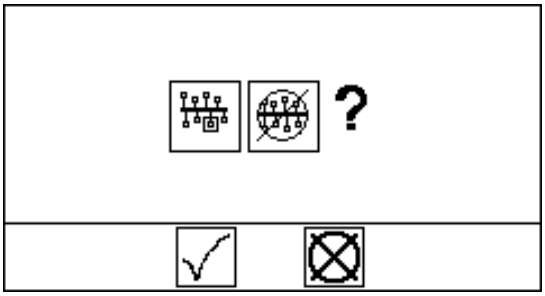


FIG. 9: Set Value and Reset Fieldbus Screen

Set Hardware Revision and Serial Number

All fieldbuses require the supply system hardware revision and serial number. For any fieldbus, use the following instructions to enter the values listed on the supply system identification plate.

NOTE: Enter these values at the time of CGM installation.

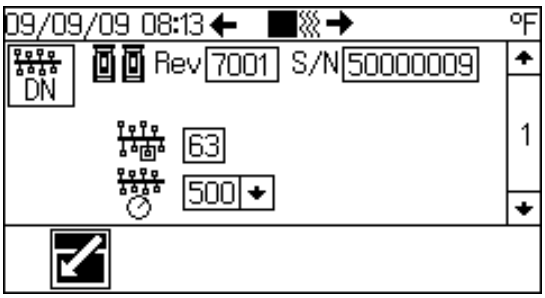


FIG. 10: Device Address

1. Press  to enter setup mode.

2. Press  to navigate to screen 1. See FIG. 10.

3. While pressing S1 (inside rear access cover of display module), press to enter edit mode for screen 1. The field will be highlighted.

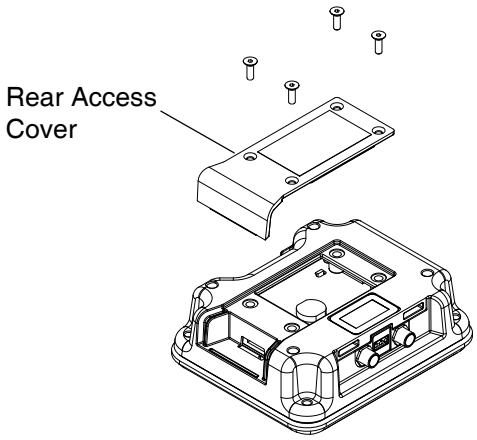


FIG. 11: S1 Location

4. Enter the supply system revision number and press to enter the number.
5. Press to navigate to the S/N field.
6. Enter the supply system serial number and press to enter the number.
7. Press to exit edit mode.

PROFIBUS Fieldbus Screens

Screen 1

This screen enables you to view the hardware revision and system serial number, and set the device address and installation date.

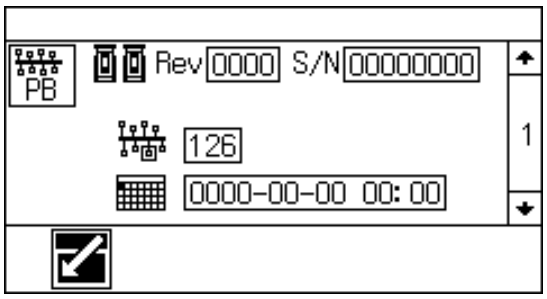


FIG. 12: PROFIBUS Fieldbus Screen 1

Parameter	Range
Hardware Rev.	Read only
System Serial # S/N	Read only
Device Address	000-126
Install Date	Set as required; use the format as shown in figure FIG. 12; validate the date and time before saving

Screen 2

Enter identification information for the CGM used in your system.

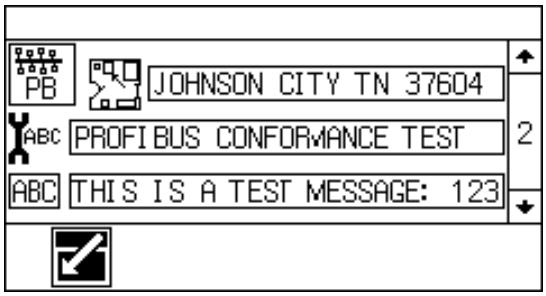


FIG. 13: PROFIBUS Fieldbus Screen 2

Parameter	Range
Location Tag PB	22 characters available
Function Tag ABC	32 characters available
Description ABC	54 characters available

Screen 3

This screen lists identification information for the Datamap that has been loaded into the CGM.

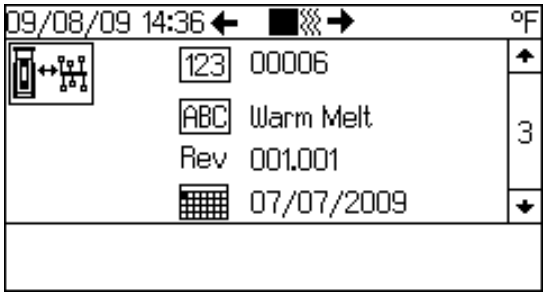


FIG. 14: PROFIBUS Fieldbus Screen 3

PROFINET Fieldbus Screens

Screen 1

This screen enables you to view the hardware revision and system serial number, and set the IP address, station name, and installation date.

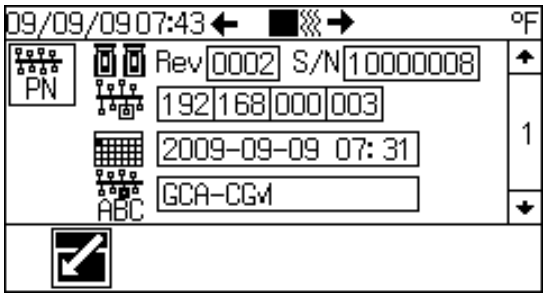


FIG. 15: PROFINET Fieldbus Screen 1

Parameter	Range
Hardware Rev.	Read only
System Serial # S/N	Read only
IP Address	Set as required
Install Date	Set as required; use format as shown in figure FIG. 15; validate the date and time before saving
Station Name ABC	Required at installation; 32 characters available

Screen 2

This screen enables you to change settings for DHCP, Subnet Mask, Gateway, DNS 1, and DNS 2.

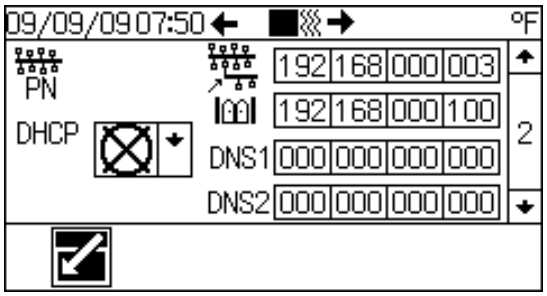


FIG. 16: PROFINET Fieldbus Screen 2

Parameter	Range
DHCP	Yes ✓ or No ⊗
Subnet Mask	Set as required
Gateway	Set as required
DNS 1	Set as required
DNS 2	Set as required

Screen 3

Enter identification information for the CGM used in your system.

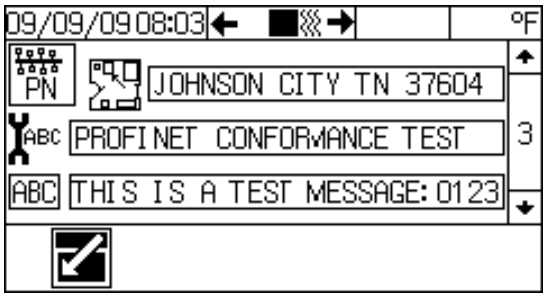


FIG. 17: PROFINET Fieldbus Screen 3

Parameter	Range
Location Tag PB	22 characters available
Function Tag	32 characters available
Description ABC	54 characters available

Screen 4

This screen lists identification information for the Datamap that has been loaded into the CGM.

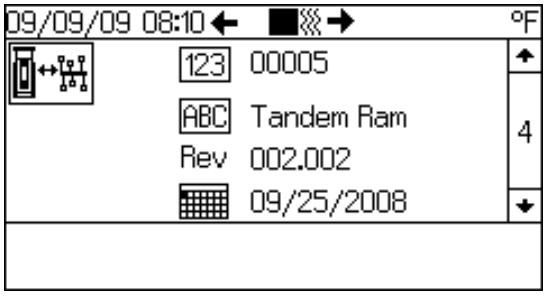


FIG. 18: PROFINET Fieldbus Screen 4

DeviceNet Fieldbus Screens

Screen 1

This screen enables you to view the hardware revision and system serial number, and set the device address and baud rate.

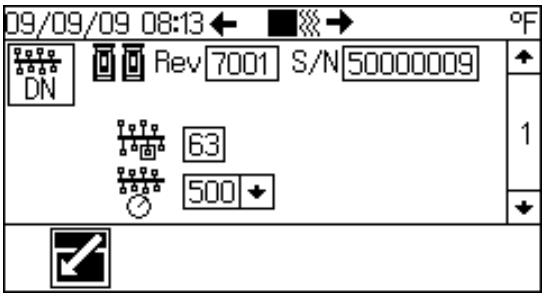


FIG. 19: DeviceNet Fieldbus Screen 1

Parameter	Range
Hardware Rev.	Read only
System Serial # S/N	Read only
Device Address	00-63
Baud Rate	125, 250, or 500

Screen 2

This screen lists identification information for the Datamap that has been loaded into the CGM.

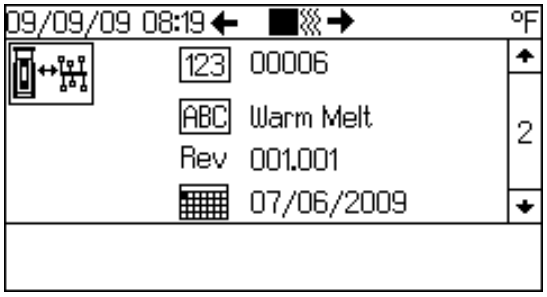


FIG. 20: DeviceNet Fieldbus Screen 2

EtherNet/IP Fieldbus Screens

Screen 1

This screen enables you to view the hardware revision and system serial number, and set the IP address.

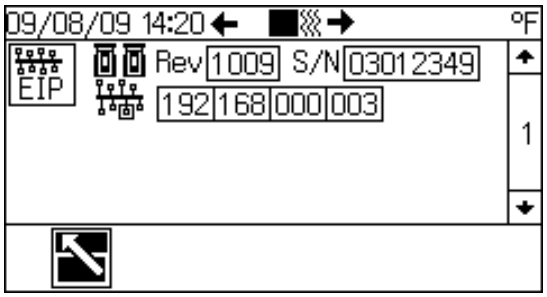


FIG. 21: EtherNet/IP Fieldbus Screen 1

Parameter	Range
Hardware Rev.	Read only
System Serial # S/N	Read only
IP Address	Required at installation

Screen 2

This screen enables you to change settings for DHCP, Subnet Mask, Gateway, DNS 1, and DNS 2.

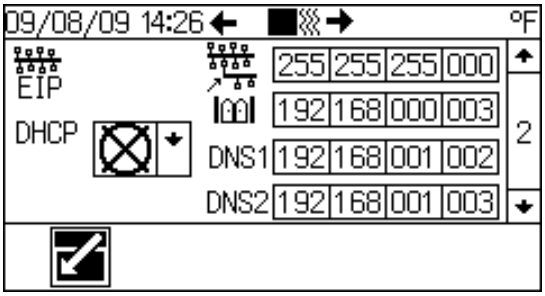


FIG. 22: EtherNet/IP Fieldbus Screen 2

Parameter	Range
DHCP	Yes ✓ or No ⊗
Subnet Mask	Set as desired
Gateway	Set as desired
DNS 1	Set as desired
DNS 2	Set as desired

Screen 3

This screen lists identification information for the Datamap that has been loaded into the CGM.

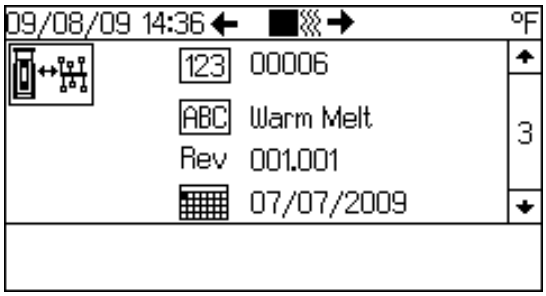


FIG. 23: EtherNet/IP Fieldbus Screen 3

Available Internal Data

The following internal data with this Graco Control Architecture based system can be viewed and modified by your fieldbus master. See Table 1: on page 16 for system flow rate units.

Warm Melt Supply System

Name	PB Fieldbus Bytes Inputs	PB Fieldbus Bytes Outputs	PN Fieldbus Bytes Inputs	PN Fieldbus Bytes Outputs	CIP & PN Fieldbus Bytes Inputs	CIP & PN Fieldbus Bytes Outputs	Byte Count	Data Type
System Ready	1		1		0		1	bool
System Error	2		2		1		1	bool
System Alarm	3		3		2		1	bool
System in Process	4		4		3		1	bool
System Flow Rate	5 - 8		5 - 8		4 -7		4	uint32
System Flow Rate Units	9	1	x	10	8	0	1	uint8
System Disable/Enable UI Controls	10	2	x	11	9	1	1	bool
System Active Ram	11	3	9	1	10	2	1	bool
System Drum Low	12		10		11		1	bool
System Drum Empty	13		11		12		1	bool
System Activate	14	4	12	2	13	3	1	bool
System Tandem Mode	15	5	13	3	14	4	1	uint8
System Prime Nonactive	16	6	14	4	15	5	1	bool
System Recirculate	17	7	15	5	16	6	1	bool
System Depressurize	18	8	16	6	17	7	1	bool
Ram A Revision Major	x		x		18		1	uint8
Ram A Revision Minor	x		x		19		1	uint8
Ram A Revision Build	x		x		20		1	uint8
Ram A State	19		17		21		1	uint8
Ram A Errors	20 - 23		18 - 21		22 - 25		4	uint32
Ram A Alarms	24 - 27		22 - 25		26 - 29		4	uint32
Ram A Crossover Errors	x		x		30 - 33		4	uint32
Ram A Crossover Alarms	28 - 31		26 - 29		34 - 37		4	uint32
Ram A Not Primed	32		30		38		1	bool
Ram A Drum Low	x		x		39		1	bool
Ram A Drum Empty	x		x		40		1	bool
Ram A Drum Volume Remain	33 - 36		31 - 34		41 - 44		4	uint32
Ram A Flow Rate	x		x		45 - 48		4	uint32

Name	PB Fieldbus Bytes Inputs	PB Fieldbus Bytes Outputs	PN Fieldbus Bytes Inputs	PN Fieldbus Bytes Outputs	CIP & PN Fieldbus Bytes Inputs	CIP & PN Fieldbus Bytes Outputs	Byte Count	Data Type
Ram A Cycle Rate	x		x		49 - 52		4	uint32
Ram A Prime Time Remain	37 - 40		35 - 38		53 - 56		4	uint32
Ram A Grand Totalizer	x		x		57 - 60		4	uint32
Ram A Job Totalizer	x		x		61 - 64		4	uint32
Ram A Maintenance Count	x		x		65 - 68		4	uint32
Ram A Filter Monitor Delta	41 - 44		39 - 42		69 - 72		4	uint32
Ram B Revision Major	x		x		73		1	uint8
Ram B Revision Minor	x		x		74		1	uint8
Ram B Revision Build	x		x		75		1	uint8
Ram B State	45		43		76		1	uint8
Ram B Errors	46 - 49		44 - 47		77 - 80		4	uint32
Ram B Alarms	50 - 53		48 - 51		81 - 84		4	uint32
Ram B Crossover Errors	x		x		85 - 88		4	uint32
Ram B Crossover Alarms	54 - 57		52 - 55		89 - 92		4	uint32
Ram B Not Primed	58		56		93		1	bool
Ram B Drum Low	x		x		94		1	bool
Ram B Drum Empty	x		x		95		1	bool
Ram B Drum Volume Remain	59 - 62		57 - 60		96 - 99		4	uint32
Ram B Flow Rate	x		x		100 - 103		4	uint32
Ram B Cycle Rate	x		x		104 - 107		4	uint32
Ram B Prime Time Remain	63 - 66		61 - 64		108 - 111		4	uint32
Ram B Grand Totalizer	x		x		112 - 115		4	uint32
Ram B Job Totalizer	x		x		116 - 119		4	uint32
Ram B Maintenance Count	x		x		120 - 123		4	uint32
Ram B Filter Monitor Delta	x		x		124 - 127		4	uint32
ZONE A1 Setpoint †	67 - 68	9 - 10	x	12 - 13	128 - 129	8 - 9	2	uint16
ZONE A2 Setpoint †	69 - 70	11 -12	x	14 - 15	130 - 131	10 - 11	2	uint16
ZONE A3 Setpoint †	71 - 72	13 - 14	x	16 - 17	132 - 133	12 - 13	2	uint16
ZONE A4 Setpoint †	73 - 74	15 - 16	x	18 - 19	134 - 135	14 - 15	2	uint16
ZONE A5 Setpoint †	75 - 76	17 - 18	x	20 - 21	136 - 137	16 - 17	2	uint16
ZONE A6 Setpoint †	77 - 78	19 - 20	x	22 - 23	138 - 139	18 - 19	2	uint16
ZONE B1 Setpoint †	79 - 80	21 - 22	x	24 - 25	140 - 141	20 - 21	2	uint16
ZONE B2 Setpoint †	81 - 82	23 - 24	x	26 - 27	142 - 143	22 - 23	2	uint16
ZONE B3 Setpoint †	83 - 84	25 - 26	x	28 - 29	144 - 145	24 - 25	2	uint16
ZONE B4 Setpoint †	85 - 86	27 - 28	x	30 - 31	146 - 147	26 - 27	2	uint16
ZONE B5 Setpoint †	87 - 88	29 - 30	x	32 - 33	148 - 149	28 - 29	2	uint16

Name	PB Fieldbus Bytes Inputs	PB Fieldbus Bytes Outputs	PN Fieldbus Bytes Inputs	PN Fieldbus Bytes Outputs	CIP & PN Fieldbus Bytes Inputs	CIP & PN Fieldbus Bytes Outputs	Byte Count	Data Type
ZONE B6 Setpoint †	89 - 90	31 - 32	x	34 - 35	150 - 151	30 - 31	2	uint16
ZONE A1 - B6 Enable ▲	91 - 92	33 - 34	65 - 66	7 - 8	152 - 153	32 - 33	2	uint16
ZONE A1 - B6 Activate ❖	93	35	67	9	154	34	1	uint8
ZONE A1 Temperature †	94 - 95		68 - 69		155 - 156		2	uint16
ZONE A2 Temperature †	96 - 97		70 - 71		157 - 158		2	uint16
ZONE A3 Temperature †	98 - 99		72 - 73		159 - 160		2	uint16
ZONE A4 Temperature †	100 - 101		74 - 75		161 - 162		2	uint16
ZONE A5 Temperature †	102 - 103		76 - 77		163 - 164		2	uint16
ZONE A6 Temperature †	104 - 105		78 - 79		165 - 166		2	uint16
ZONE B1 Temperature †	106 - 107		80 - 81		167 - 168		2	uint16
ZONE B2 Temperature †	108 - 109		82 - 83		169 - 170		2	uint16
ZONE B3 Temperature †	110 - 111		84 - 85		171 - 172		2	uint16
ZONE B4 Temperature †	112 - 113		86 - 87		173 - 174		2	uint16
ZONE B5 Temperature †	114 - 115		88 - 89		175 - 176		2	uint16
ZONE B6 Temperature †	116 - 117		90 - 91		177 - 178		2	uint16
ZONE A1 Alarms	x		x		179 - 182		4	uint32
ZONE A2 Alarms	x		x		183 - 186		4	uint32
ZONE A3 Alarms	x		x		187 - 190		4	uint32
ZONE A4 Alarms	x		x		191 - 194		4	uint32
ZONE A5 Alarms	x		x		195 - 198		4	uint32
ZONE A6 Alarms	x		x		199 - 202		4	uint32
ZONE B1 Alarms	x		x		203 - 206		4	uint32
ZONE B2 Alarms	x		x		207 - 210		4	uint32
ZONE B3 Alarms	x		x		211 - 214		4	uint32
ZONE B4 Alarms	x		x		215 - 218		4	uint32
ZONE B5 Alarms	x		x		219 - 222		4	uint32
ZONE B6 Alarms	x		x		223 - 226		4	uint32

† *Data is provided in 0.1 C units. For example, a value of 514 equals 51.4 C.*

▲ *Data is bit packed with A1 in bit 0, A2 in bit 1, ... A6 in bit 5, B1 in bit 6, B2 in bit 7, etc. For example, a valve of 14E (hexadecimal) would indicate zones A2-A4, B1 and B3 are enabled or on, and the other zones are disabled or off.*

❖ *Entering a non-zero value (example: 2) to this location will turn on all enabled zones, and a zero value will turn them off.*

NOTE: If using the CGM Kit to communicate to a 4 zone auxiliary heat box, all bit pack and temperature data is mapped to zones A2-A5.

NOTE: The following system network configuration files are available at www.graco.com

- EDS file: DeviceNet or Ethernet/IP fieldbus networks
- GSD file: PROFIBUS fieldbus networks
- GSDML: PROFINET fieldbus networks

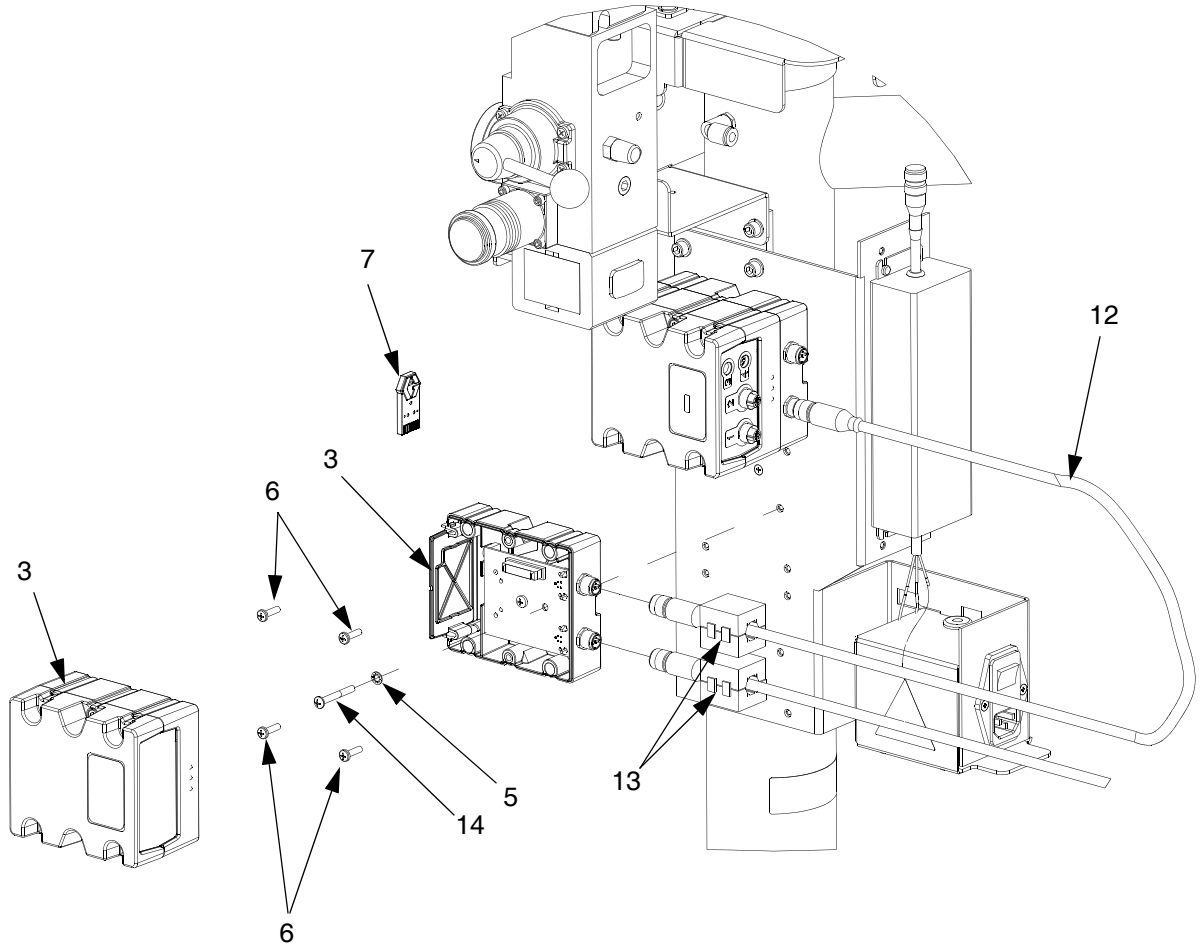
Table 1: System Flow Rate Units

Value	Units
0	cycles/min.
1	gal./min. (US)
2	gal./min. (UK)
3	oz./min. (US)
4	oz./min. (UK)
5	liters/min.

Parts

Model CGK020

Ram A



Ref	Part	Description	Qty.
3*	CGMxx0	MODULE, CGM	1
5	157021	WASHER	1
6	114417	SCREW, self tap, pan hd	4
7	16A932	TOKEN, map for warm melt supply system	1
12	121000	CABLE, CAN, female / female 0.5m	1
13	121901	SUPPRESSOR, box snap, ferrite	3
14	121070	SCREW, machine #8-32 x 1 3/8 in.	1

* *Not included in kit. See the Communications Gateway Module manual for parts list.*

Graco Standard Warranty

Graco warrants all equipment referenced in this document which is manufactured by Graco and bearing its name to be free from defects in material and workmanship on the date of sale to the original purchaser for use. With the exception of any special, extended, or limited warranty published by Graco, Graco will, for a period of twelve months from the date of sale, repair or replace any part of the equipment determined by Graco to be defective. This warranty applies only when the equipment is installed, operated and maintained in accordance with Graco's written recommendations.

This warranty does not cover, and Graco shall not be liable for general wear and tear, or any malfunction, damage or wear caused by faulty installation, misapplication, abrasion, corrosion, inadequate or improper maintenance, negligence, accident, tampering, or substitution of non-Graco component parts. Nor shall Graco be liable for malfunction, damage or wear caused by the incompatibility of Graco equipment with structures, accessories, equipment or materials not supplied by Graco, or the improper design, manufacture, installation, operation or maintenance of structures, accessories, equipment or materials not supplied by Graco.

This warranty is conditioned upon the prepaid return of the equipment claimed to be defective to an authorized Graco distributor for verification of the claimed defect. If the claimed defect is verified, Graco will repair or replace free of charge any defective parts. The equipment will be returned to the original purchaser transportation prepaid. If inspection of the equipment does not disclose any defect in material or workmanship, repairs will be made at a reasonable charge, which charges may include the costs of parts, labor, and transportation.

THIS WARRANTY IS EXCLUSIVE, AND IS IN LIEU OF ANY OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO WARRANTY OF MERCHANTABILITY OR WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE.

Graco's sole obligation and buyer's sole remedy for any breach of warranty shall be as set forth above. The buyer agrees that no other remedy (including, but not limited to, incidental or consequential damages for lost profits, lost sales, injury to person or property, or any other incidental or consequential loss) shall be available. Any action for breach of warranty must be brought within two (2) years of the date of sale.

GRACO MAKES NO WARRANTY, AND DISCLAIMS ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, IN CONNECTION WITH ACCESSORIES, EQUIPMENT, MATERIALS OR COMPONENTS SOLD BUT NOT MANUFACTURED BY GRACO. These items sold, but not manufactured by Graco (such as electric motors, switches, hose, etc.), are subject to the warranty, if any, of their manufacturer. Graco will provide purchaser with reasonable assistance in making any claim for breach of these warranties.

In no event will Graco be liable for indirect, incidental, special or consequential damages resulting from Graco supplying equipment hereunder, or the furnishing, performance, or use of any products or other goods sold hereto, whether due to a breach of contract, breach of warranty, the negligence of Graco, or otherwise.

FOR GRACO CANADA CUSTOMERS
The Parties acknowledge that they have required that the present document, as well as all documents, notices and legal proceedings entered into, given or instituted pursuant hereto or relating directly or indirectly hereto, be drawn up in English. Les parties reconnaissent avoir convenu que la rédaction du présente document sera en Anglais, ainsi que tous documents, avis et procédures judiciaires exécutés, donnés ou intentés, à la suite de ou en rapport, directement ou indirectement, avec les procédures concernées.

Graco Information

For the latest information about Graco products, visit www.graco.com.
For patent information, see www.graco.com/patents.
TO PLACE AN ORDER, contact your Graco distributor or call to identify the nearest distributor.
Phone: 612-623-6921 or Toll Free: 1-800-328-0211 Fax: 612-378-3505

All written and visual data contained in this document reflects the latest product information available at the time of publication.
Graco reserves the right to make changes at any time without notice.

Original instructions. This manual contains English. MM 3A5484
Graco Headquarters: Minneapolis
International Offices: Belgium, China, Japan, Korea

GRACO INC. AND SUBSIDIARIES • P.O. BOX 1441 • MINNEAPOLIS MN 55440-1441 • USA

www.graco.com
Revision A, January 2018