

MagneW™ 3000 Electromagnetic Flowmeter Model MGR13C(Converter)/MGR11U (Detector) Hyper-Fill

OVERVIEW

The MagneW™3000 Hyper-Fill was developed for high speed batching and filling machine applications. Hyper-fill is a magnetic flowmeter optimized for the sophisticated measurement demands found in these industries. Extremely repeatable measurements are produced using a unique technology.



FEATURES

- €# Highly repeatable measurement technology satisfies high speed filling applications.
- €# Flexible in design, the hyper-fill magnetic flowmeter uses a four-in-one design. This means that up to (4) detectors and converters can share a single power supply. This decreases space requirements and simplifies wiring and installation.
- €# Detectors use quick-connect waterproof cable connectors to simplify installation and maintenance. The detectors are compact in design; A distinct advantage for customers with multiple head filling machines.

APPLICATIONS

Hyper-fill is used with filling machines for cans, bottles, barrels, and others. It is anything for similar high speed filling and batching applications.

Measurement conditions

- €# Conductivity:
Fluid conductivity to be greater than 50 μ S/cm
- €# Process fluid temp:
0-100 ^\circ C
- €# Clean in place :
steam sterilization 140 ^\circ C (284 ^\circ F),
Maximum one hour continuous exposure.
- €# Filling flow rate:
50 to 800ml/second
- €# Process fluid:
Must be non abrasive homogenous mixture.
Examples: water, soft drinks, carbonated drinks, scotch, liquor, wine, beer etc. For fluids with suspended solids, contact Yamatake to determine suitability of application.

For converter (MGR13) **FUNCTIONAL SPECIFICATIONS**

Output Signal

- Pulse Output Open (Open Collector)
- ⊕ Contact capacity : DC12 to 24V, 100mA
- ⊕ Pulse frequency : 8000Hz max
- ⊕ Pulse width : 30 μ s or 200 μ s (whichever selected)

Range Setting

100mL/s, 200mL/s, 400mL/s, 800mL/s (whichever selected depending upon filling quantity)

Damping

0.1s (Default)

Drop out

0 to 10% (adjustable)

Power Supply

AC85 to 264V, 47 to 63Hz

Power Consumption

35W/Simltaneous Operating 4 Sets

Ambient temperature limits

5 to 50 ^\circ C

Ambient humidity limits

10 to 90%RH (no condensation)

PHYSICAL SPECIFICATION

Case Material

Carbon Steel (Plating Treatment)

Weight

2.6kg (4 main units loaded condition)

For Detector (MGR11U) **FUNCTIONAL SPECIFICATIONS**

Size

15mm (0.5 inch)

Measurable Electrical Conductivity

More than 50 μ S/cm

Measuring Fluid Range

Between 50mL/s to 800mL/s

Process Fluid Temperature limits

0 to 100 ^\circ C

Process Fluid Pressure limits

-0.1 to 1Mpa

Process Fluid Corrosiveness

Fluid should be no corrosive against stainless steel and PFA

Process Fluid Abrasive

Fluid should be no abrasive.

Rinsing Temperature limits

140 ^\circ C, Not longer than 1 hour

Ambient temperature limits

5 to 50 ^\circ C

Ambient humidity limits

5 to 100%RH (no condensation)

PHYSICAL SPECIFICATIONS

Enclosure rating

JIS 0920 water-proof, NEMA, TYPE 4X, IEC IP67

Body Material

Measuring Tube SUS304

Case SUS304

Wetted Parts Material

Lining : PFA

Electrode : SUS316L

Welding Ferrule (Option) : SUS304

Gasket : Silicon rubber

Electrode Structure

Insertion Type Electrode (fixed)

Accessories

Welding Ferrule (Option), Silicon Gasket 2 pcs.

Weight

1.4kg

PERFORMANCE SPECIFICATIONS

Standard Reproducibility

ω =0.1% (Filling Time \geq 3s)

ω =0.2% (1.5s \leq Filling Time \leq 3s)

Reference Condition: Calibration by Water at 20 ^\circ C

It is possible to comply the filling time less than 1.5s, so please consult with us if necessary.

" ω " means a standard deviation and

$\omega = \frac{\sqrt{\sum (\text{measured figure "n"} - \text{Average of "n"})^2}}{(n-1)}$

INSTALLATION

Mounting

Converter : Panel Mounting (by M4 screw)

Detector : Process connection

(by IDF clamp for 1 inch - ferrule connection)

Grounding

Resistance less than 100 Ω

MODEL SELECTIONS**MagneWTM 3000 Electromagnetic Flowmeter Hyper-Fill (Converter)**

MGR13 I - II III IV V - Options

Basic model	MGR13		
I	Power supply	AC85 to 264V 47 to 63Hz	C
		None(Only converter unit for replacement)	R
			-

II	Customer specification	WW	WW
III	Converter	Master converter (Available when "Power supply" of Selection I is "C")	M
		Slave converter (Available when "Power supply" of Selection I is "C")	S
		*1 Converter for replacement (Available only when "Power supply" of Selection I is "R")	R
IV	Main Unit	None / Power supply only (Available when "Power supply" of Selection I is "C")	0
		*2 One unit (Available only when "Power supply" of Selection I is "R")	1
		Two units (Available when "Power supply" of Selection I is "C")	2
		Three units (Available when "Power supply" of Selection I is "C")	3
		Four units (Available when "Power supply" of Selection I is "C")	4
V	Combined Detector	15mm	15
		25mm(For the specification in the future)	25

Options	
X	None
B	Traceability certificate
C	Tag numbers on each converters

*1: The only one converter can be a master converter. Others are slave converters.

*2: Main unit does not have a power supply for operating.

Main unit without power supply can be ordered only for the replacement or spare part.

*3: When ordering converters without detectors, the traceability certificate does not include test reports.

*4: Please order MGA22W cables for the connection between master converter and slave converter

*6: For Customer specifications in selection II, refer to Yamatake sales.

*7: When ordering, the following information is required.

* TAG No

* Pulse width 30 μ s or 200 μ s)

* Setting range (100mL/s, 200mL/s, 400L/s, 800L/s)

*Pulse weight (0.05ml/P or 0.1ml/P)

MagneWTM 3000 Electromagnetic Flowmeter Hyper-Fill (Detector)

MGR11U- I II III - Options

Basic models	MGR11U		
I	Detector size	15mm 0.5S	015

II	Electrode	SUS316L	L
III	Calibration	Standard calibration	A

Options	
X	None
A	Test report
B	Traceability certificate
C	Tag number for each devices
D	0.5S Welding Ferrule 2pcs.
E	Extra 2 gaskets *1
Q	Gasket material : Silicon

*1 : 2 pcs of gasket are attached as a standard accessory.

*2: The lining of this detector is PFA.

*3: Please order MGA22W cables for the connection between master converter and slave converter

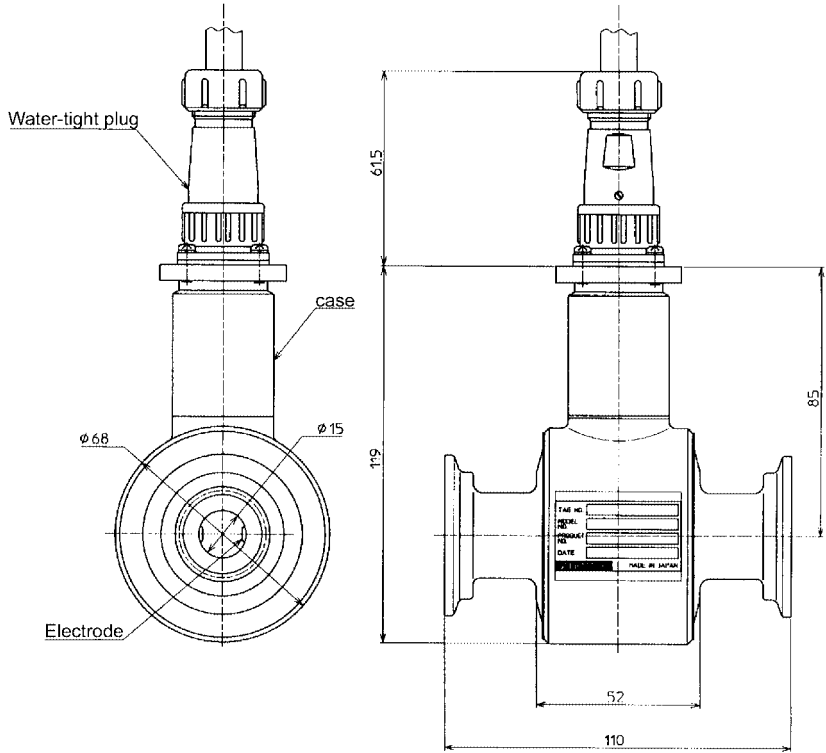
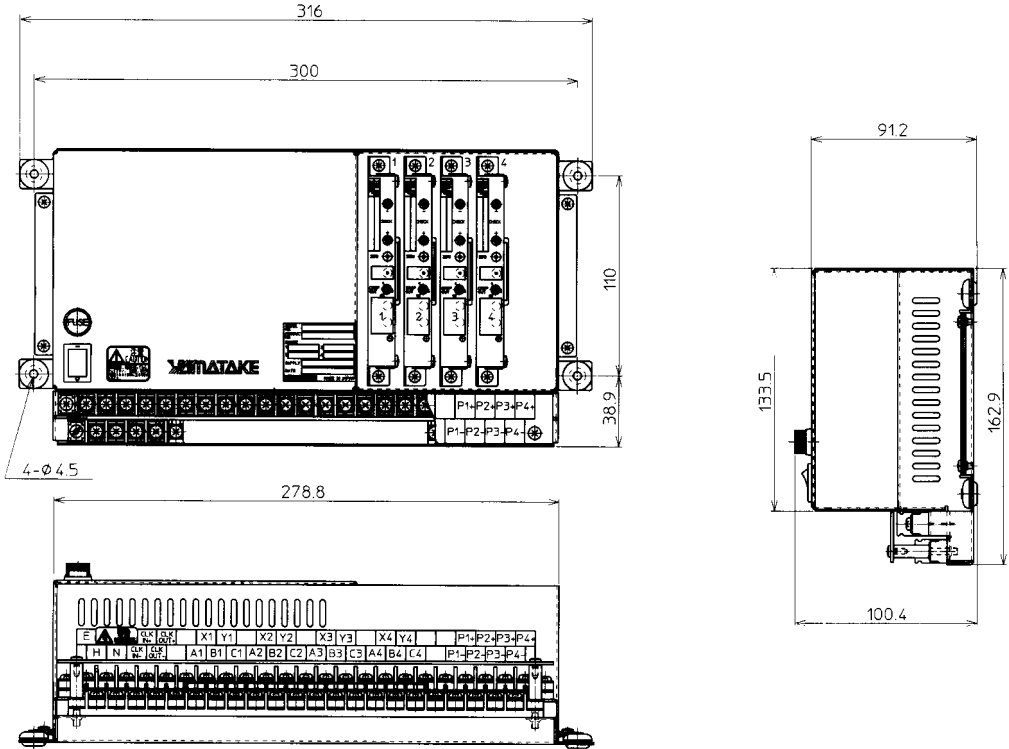
*4 The connection of detector and piping is 1.5S IDF clamp and Yamatake does not provide it.

*5 : When ordering, the following information is required.

* TAG No

* Fluid name

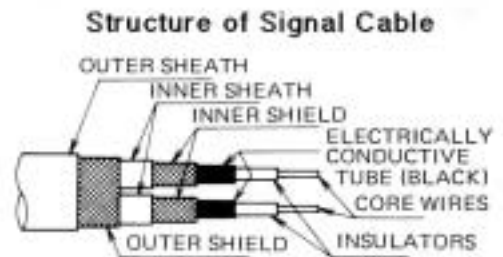
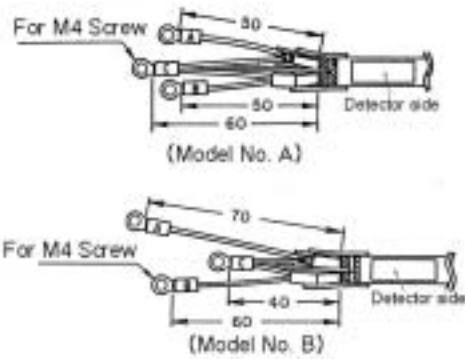
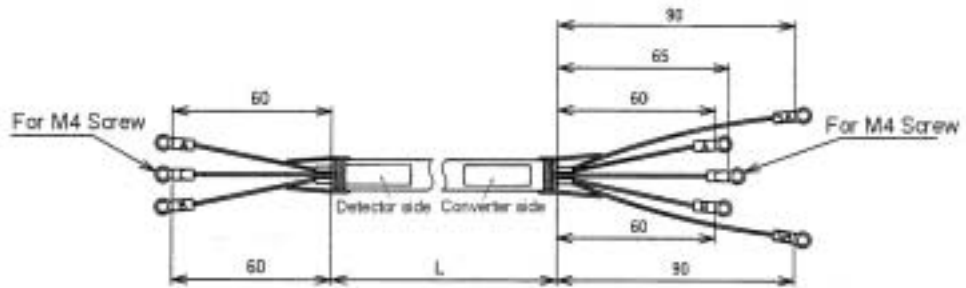
DIMENSIONS



Signal Cable

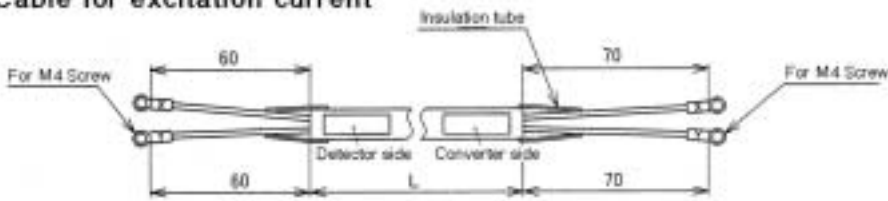
End terminal processing at Detector side

End terminal processing at Converter side

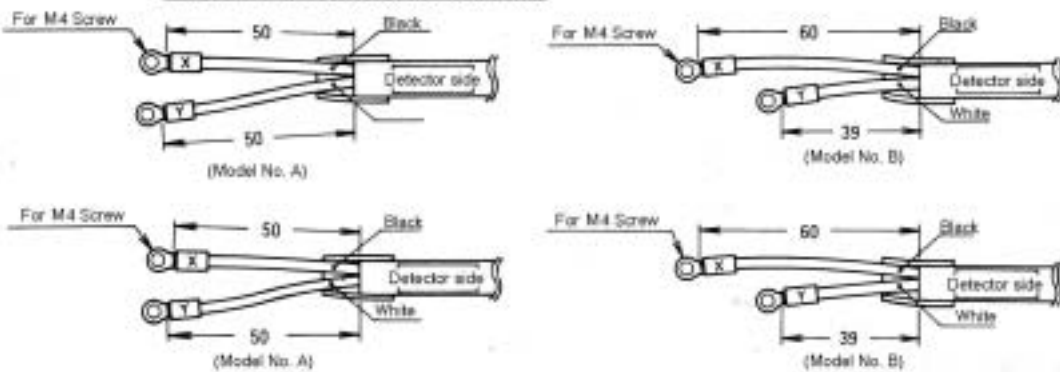


Note: Remove the electrically conductive tubes (black) of cores for terminals A and B up to the ends of the inner shields.

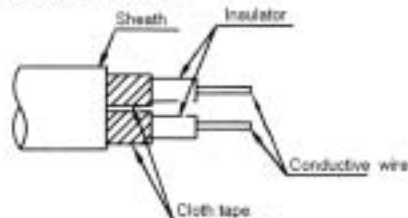
Cable for excitation current



End terminal processing at detector side



Structure of Excitation Cable



Yamatake Corporation

Totate International Building
2-12-19 Shibuya
Shibuya-ku, Tokyo 150-8316
Japan

Tel : 81-3-3486-2310
Fax : 81-3-3486-2593



Certificate No. Q17862



Certificate No. E8318
For Shonan Factory

YAMATAKE

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Saving through Automation

<http://www.yamatake.co.jp/>