



GAUGEMASTER ANALOGUE CONTROL

These instructions refer to the use of the following Analogue Controllers in the GAUGEMASTER range (all part numbers prefixed "GMC-"):

100, 100.O, 100LGB, 100M, 100MO, 100MZ, 10LGB, 10LGB5F, COMBI, D, DO, DS, DSZ, DZ, HH, P, PO, PZ, Q, QZ, TS, TSZ, U, UD, UDS, UF, UO, UQ, and W.

Please read these instructions carefully and ensure that you are following the correct parts of the instructions for the model that you have bought. Not all of the instructions in this guide will apply to every controller in the range.

WARNING: THIS APPLIANCE IS FOR INDOOR USE ONLY. NOT RECOMMENDED FOR CHILDREN UNDER 14 YEARS OLD UNLESS SUPERVISED BY AN ADULT. CONSTRUCTED TO EN60 742.

www.gaugemaster.com



V1.3

GAUGEMASTER Guarantee

We undertake to replace, free-of-charge, any parts found defective within the lifetime of the unit – providing the item has not been tampered with and parts are still available for such a repair.

Fill in the form overleaf, cut it out, and return it by post to us in order to register your unit for the guarantee.

This guarantee covers only the supply of replacement parts, labour cost for fitting of same, and the cost of returning the unit to the customer or retailer. This guarantee does not affect your Statutory Rights.

We reserve the right to vary design or specification without notice.

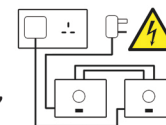
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INSTALLATION

Make sure that you follow the correct installation instructions for the model that you have bought.

CAUTION: It is VERY important that the outputs of two or more control units are NOT connected together in parallel ie. both wires. If this is done, there is a risk of electric shock from a plug not inserted into a socket



GMC-HH and GMC-W Controllers

These controllers are designed to be an independent controller when used with a transformer, or in conjunction with the Model **GMC-100M** controller. If the unit is powered from the accessory outlet on an existing controller, care should be taken to ensure correct track isolation of the new section. Gaugemaster double-wound transformers **GMC-T1** or **GMC-M1** are recommended.

The **GMC-HH** and **GMC-W** controllers may be fitted with a DIN plug (**GM75**) for use with a **GMC-100M** controller. The pin layout for the **GM75** DIN Plug is shown to the right and it is recommended that this configuration is used – but remember, the socket will be a mirror image. Use **GM11** coloured wire to make these connections.

RED/BLACK – TRACK – Output 0-12v DC @ 1amp
(Connect one wire to each rail. Reverse track connections for direction as necessary)
BLUE/YELLOW to SUPPLY – Input 14-18v AC 16v

PLUG VIEWED FROM REAR



Cased Controllers

Our UK cased controllers are supplied fitted with a 3amp fused plug for 230v supply. This appliance must be earthed. Please do not remove the plug under any circumstances. Connect your wire to the 'Track' terminals and run it from each separate track output to the section of track that you wish to operate. We recommend soldering one of the wires provided to each of the track rails, or track connection leads such as **GM13/17** and **GM11** wire. Reverse the wires if locomotive travels in the wrong direction. Each output takes its power from separated isolated transformer windings and is therefore suitable for Cab Control and Common Return wiring. Please ensure that each separately powered track section is correctly isolated from the other sections.

Panel Mounted Controllers

Connect the 'Input' terminals to your supply transformer (we recommend our own range of transformers, see over for details) and the 'Track' terminals from each separate track output to the section of track that you wish to operate. We recommend soldering wires to each of the track rails, or track connection leads such as **GM13/17** and **GM11** wire. For ease of identification we recommend that you use blue and yellow wires for the power supply and red and black wires for the track supply. Reverse the wires if locomotive travels in the wrong direction. Please ensure that each separately powered track section is correctly isolated from the other sections.

OPERATION

Standard Controllers

Our standard controllers are suitable for all types of locomotive motors. Operate the speed control knob and observe the track supply indicator LED. Depending on the model, it will either have a red LED which varies in brightness depending on the output voltage, or a vari-colour LED which will glow red at zero output and will change colour through the range of red to orange and then yellow as the output increases.

If the LED behaves in any other way to this, then an overload has occurred. The output is protected by a resettable circuit breaker. To reset the unit, investigate and rectify the cause of the overload, turn the speed control knob to zero and wait approximately 2 minutes before using the equipment as normal.

For best running, keep your track clean with a **GM26/27** Track Rubber and lubricate locomotives as per manufacturer's guidelines with our range of lubricants (**GM619/667/668**). You can also use our **HF-1/2** Track Cleaners.

Simulation Controllers

The simulation control allows you to apply a braking effect to your locomotive control.

With the simulation switch set to 'OFF', the locomotive will respond directly to the speed control knob. To use the simulation control:

Starting – Simulator switch set to 'ON', Brake control knob set fully to 'Release'. Turn speed control knob to desired speed and the locomotive will accelerate gradually to the speed set.

Coasting – Turn speed control to 'OFF' position with Brake control knob set fully to 'Release'. Locomotive will gradually coast to a stop.

Braking – Turn Brake control knob towards 'Apply', leaving the speed control knob in the same position and the locomotive will gradually stop. Braking will be harder depending on how far the Brake control knob is turned. An emergency stop can be achieved by turning the Brake control knob all the way round in the 'Apply' direction. The locomotive will gradually return to running speed when the brakes are turned fully in the 'Release' direction.

Feedback Controllers

Controllers with feedback feature a pulsed design, with excellent low speed running and constant speed over points, around curves, and up and down gradients. A degree of motor heating and noise may be experienced with sustained low speed running. Feedback controllers are **NOT** suitable for coreless motors such as Portescap or poor-quality N Scale motors, please consult the manufacturer for advice.

NB: The controller should be examined regularly for potential hazards such as damage to the casing, cable, or plug. In the event of any damage, the unit should not be used until it has been repaired. The unit should not be opened as it has no consumer repairable components. A repair service is available under the lifetime guarantee.

ANALOGUE CONTROLLER FEATURES

Our cased controllers usually have an accessory output which allows you to power various other items on your layout, such as points and lighting. The output of the accessory terminals is determined by the scale of locomotive that the controller is designed to run. Versions of our controllers fitted with European plugs are also available, contact us or see our website for details as these are made to order.

A full table of input/output data for the full range can be found below:

Controller	Description	Scale	Transformer Required	Track 1	Track 2	Track 3	Track 4	Accessories 1	Accessories 2	Accessories 3	Accessories 4
GMC-100	Single Track Panel Mounted Controller	N/HO/OO	M1/T1	12v DC 1.25amp	x	x	x	x	x	x	x
GMC-100.O	Single Track Panel Mounted Controller	O	M2/T2	14v DC 2.5amp	x	x	x	x	x	x	x
GMC-100LGB	Single Track Panel Mounted Controller	G	M6/T6	20v DC 2.5amp	x	x	x	x	x	x	x
GMC-100M	Single Track Controller	N/HO/OO	Mains Plug Provided	12v DC 1.25amp	Plug	x	x	12v DC	16v AC	x	x
GMC-100MO	Single Track Controller	O	Mains Plug Provided	14v DC 2.5amp	x	x	x	14v DC	16v AC	x	x
GMC-100MZ	Single Track Controller	Z	Mains Plug Provided	9v DC 1amp	x	x	x	9v DC	12vAC	x	x
GMC-10LGB	Single Track Controller	G	Mains Plug Provided	20v DC 2.5amp	x	x	x	24v AC	x	x	x
GMC-10LGB5F	Single Track Controller with Fan	G	Mains Plug Provided	20v DC 5amp	x	x	x	x	x	x	x
GMC-COMBI	Single Track Controller with Wall Mounted Transformer	N/HO/OO	WM Provided	12v DC 0.75amp	x	x	x	16v AC	x	x	x
GMC-D	Twin Track Controller	N/HO/OO	Mains Plug Provided	12v DC 1.25amp	12v DC 1.25amp	x	x	12v DC	16v AC	x	x
GMC-DO	Twin Track Controller	O	Mains Plug Provided	12v DC 2.5amp	12v DC 2.5amp	x	x	12v DC	16v AC	x	x
GMC-DS	Twin Track Controller with Simulation	N/HO/OO	Mains Plug Provided	12v DC 1.25amp	12v DC 1.25amp	x	x	12v DC	12v DC	16v AC	16v AC
GMC-DSZ	Twin Track Controller with Simulation	Z	Mains Plug Provided	9v DC 1amp	9v DC 1amp	x	x	9v DC	9v DC	12v AC	12v AC
GMC-DZ	Twin Track Controller	Z	Mains Plug Provided	9v DC 1amp	9v DC 1amp	x	x	9v DC	12v AC	x	x
GMC-HH	Handheld Single Track Feedback Controller	N/HO/OO	M1/T1/100M	12v DC 1amp	x	x	x	x	x	x	x
GMC-P	Single Track Controller with Simulation	N/HO/OO	Mains Plug Provided	12v DC 1amp	x	x	x	12v DC	16v AC	x	x
GMC-PO	Single Track Controller with Simulation	O	Mains Plug Provided	14v DC 2.5amp	x	x	x	14v DC	18v AC	x	x
GMC-PZ	Single Track Controller with Simulation	Z	Mains Plug Provided	9v DC 1amp	x	x	x	9v DC	x	12v AC	x
GMC-Q	Four Track Controller	N/HO/OO	Mains Plug Provided	12v DC 1amp	12v DC 1amp	12v DC 1amp	12v DC 1amp	12v DC	12v DC	16v AC	16v AC
GMC-QZ	Four Track Controller	Z	Mains Plug Provided	9v DC 1amp	9v DC 1amp	9v DC 1amp	9v DC 1amp	9v DC	9v DC	12v AC	12v AC
GMC-TS	Three Track Controller with Simulation	N/HO/OO	Mains Plug Provided	12v DC 1.25amp	12v DC 1.25amp	12v DC 1.25amp	x	12v DC	12v DC	16v AC	16v AC
GMC-TSZ	Three Track Controller with Simulation	Z	Mains Plug Provided	9v DC 1amp	9v DC 1amp	9v DC 1amp	x	9v DC	9v DC	12v AC	12v AC
GMC-U	Single Track Panel Mounted Controller with Simulation	N/HO/OO	M1/T1	12v DC 1.25amp	x	x	x	x	x	x	x
GMC-UD	Twin Track Panel Mounted Controller	N/HO/OO	M1/T1	12v DC 1.25amp	12v DC 1.25amp	x	x	x	x	x	x
GMC-UDS	Twin Track Panel Mounted Controller with Simulation	N/HO/OO	M1/T1	12v DC 1.25amp	12v DC 1.25amp	x	x	x	x	x	x
GMC-UF	Single Track Panel Mounted Controller with Feedback	N/HO/OO	M1/T1	12v DC 1.25amp	x	x	x	x	x	x	x
GMC-UO	Single Track Panel Mounted Controller with Simulation	O	M2/T2	14v DC 2.5amp	x	x	x	x	x	x	x
GMC-UQ	Four Track Panel Mounted Controller	N/HO/OO	2x M1/T1	12v DC 1.25amp	12v DC 1.25amp	12v DC 1.25amp	12v DC 1.25amp	x	x	x	x
GMC-W	Single Track Walkabout Controller	N/HO/OO	M1/T1/100M	12v DC 1.25amp	x	x	x	x	x	x	x

Key: Standard Simulation Feedback

Transformer	Type	Output
GMC-T1	Open	2x 16V AC at 1.25amp
GMC-T1DC	Open	2x 12V DC at 1.25amp
GMC-T2	Open	1x 18V AC at 2.50amp
GMC-T3	Open	1x 24V AC at 1.25amp
GMC-T4	Open	2x 12V AC at 1.25amp
GMC-T5	Open	1x 12V AC at 5.0amp
GMC-T6	Open	1 x 24v AC at 2.5amp
GMC-M1	Cased	2x 16V AC at 1.25amp
GMC-M1DC	Cased	2x 12V DC at 1.25amp
GMC-M2	Cased	1x 18V AC at 2.50amp
GMC-M3	Cased	1x 24V AC at 1.25amp
GMC-M4	Cased	2x 12V AC at 1.25amp
GMC-M5	Cased	1x 12V AC at 5.0amp
GMC-M6	Cased	1 x 24v AC at 2.5amp
GMC-WM1	Wall Mounted	1x 16V AC OR 1x 12VDC at 0.75amp
GMC-WM2	Wall Mounted	1x 9V DC Smooth Regulated at 1.6amp
GMC-WM3	Wall Mounted	1x 16V AC at 0.75amp
GMC-WM4	Wall Mounted	1x 12V DC Smooth Regulated at 1.25amp
GMC-WM5	Wall Mounted	1x 12V DC at Smooth Regulated at 2.0amp



LAYOUT WIRING

BPGM118K	100m Black Wire
BPGM118L	100m Blue Wire
BPGM118N	100m Brown Wire
BPGM118G	100m Green Wire
BPGM118R	100m Grey Wire
BPGM118O	100m Orange Wire
BPGM118P	100m Pink Wire
BPGM118R	100m Red Wire
BPGM118W	100m White Wire
BPGM118Y	100m Yellow Wire
GM08RB	50cm Red/Black Twinned Wire (2)
GM09RB	10m Red/Black Twinned Wire
GM118K	10m Black Wire
GM118L	10m Blue Wire
GM118N	10m Brown Wire
GM118G	10m Green Wire
GM118R	10m Grey Wire
GM118O	10m Orange Wire
GM118P	10m Pink Wire
GM118PP	10m Purple Wire
GM118R	10m Red Wire
GM118W	10m White Wire
GM118Y	10m Yellow Wire
GM13	Pair Connecting Leads (OO Rail Joiners)
GM17	Pair Connecting Leads (N Rail Joiners)
GM75	P56 6-Way DIN Plug/Socket



POINT CONTROL

GMC-PM1	Point Motor with Switch
GMC-PM2	Point Motor
GMC-PM4	Point Motor with Switch and Latching Mechanism
GMC-BPPM10	Classic Solenoid Point Motor (5)
GMC-PM10	Classic Solenoid Point Motor
GMC-BPPM20	Surface Mounted Point Motor (5)
GMC-PM20	Surface Mounted Point Motor
GMC-PM50	Connection Boxes (3)
GMC-PM52	Point Motor Accessory Pack
GMC-PM51	Point Motor Wire RGB 10m
GMC-PM53	Harnesses For PM10D (2)
GMC-PM53	Harnesses For PM20 (2)
GMC-CDU	Capacitor Discharge Unit
GMC-PCU2	Slave Point Control Unit
GM510	Momentary SPDT Mini-Toggle Point Motor Switch
GM530	ToggleToppers Multipack (36)
GM531	ToggleToppers (12) Red
GM532	ToggleToppers (12) Black
GM533	ToggleToppers (12) Yellow
GM534	ToggleToppers (12) Green
GM535	ToggleToppers (12) Blue
GM536	ToggleToppers (12) White



MODULES

Use these units to shuttle trains between two locations, make a train stop automatically at a location, and for track cleaning.

GMC-SS1	Super Shuttle Unit
GMC-SS1LGB	Super Shuttle Unit for G Scale
GMC-SS2	Station Stop Unit
GMC-HF1	Single Track High Frequency Track Cleaner
GMC-HF2	Double Track High Frequency Track Cleaner



TOOLS & MAINTENANCE

GM27	Large Track Rubber
GM590	Model Maintenance Set
GM619	Precision Lubricator
GM667	Superfine Oil Pen with Teflon
GM668	Electrical Contact Oil Pen
GM661	Solder Station
GM663	Solder Wire (20g)
GM659	Desoldering Pump
GM694	Electric Mini Drill 230v

GAUGEMASTER Guarantee

Name: _____



Address: _____

Email: _____

When did you buy this controller? _____

Where did you buy this controller? _____

Which scale(s) do you model in? _____

Tick the box if you would like to subscribe to our RIGHT LINES email newsletter and receive email news about the scale(s) you model in.

☐ **YES** I would like to subscribe to RIGHT LINES, the email newsletter and receive email news.

Your data will only be used to contact you regarding your controller if it is sent back for repair. It may also be used for subscriptions to our RIGHT LINES and news emails, only if consent has been given by ticking the box above. Please see our Privacy Policy for more details.