

DOSING AND MIXING



Gravimetric synchronous dosing and mixing station

# SPECTROCOLOR G

 think materials management



# SPECTROCOLOR G

## GRAVIMETRIC SYNCHRONOUS DOSING AND MIXING STATION

SPECTROCOLOR G with material refilling and gravimetric collecting bin



Swivel element



Quick change system



### SPECTROCOLOR G

SPECTROCOLOR G is a continuous gravimetric dosing and mixing station that meets the highest homogeneity requirements. It is designed for continuous 24/7, maintenance-free operation.

The unit is based on the loss-in-weight principle. Each component is weighed individually and dosed in absolute weights. Continuous operation with synchronous dosing of materials guarantees a constant mixture in the collecting bin that is exactly in line with the recipe.

SPECTROCOLOR G boasts a robust, compact design and is available in three sizes each with up to six dosing modules. Each module has its own load cell and is designed for throughputs from 0.2 to 1200 kg/h.

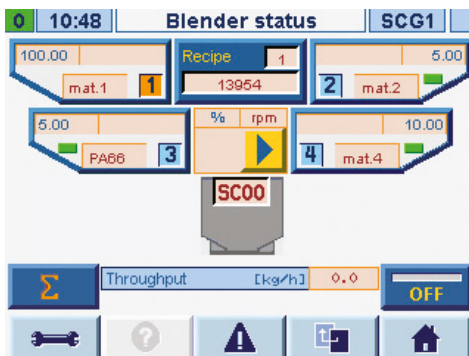
### Application

SPECTROCOLOR G has been designed for deployment in all demanding, continuous production processes. In particular, for extrusion applications, such as blown film, profile & pipe, film & sheet, cable coating, fibre and for compounding applications, such as tailor-made masterbatches.

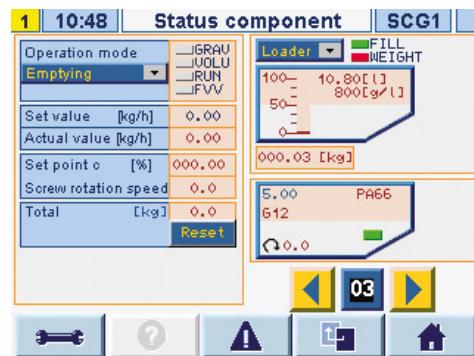
### Cleaning and material change

Simple operations such as adaption of the dosing modules in line to varying material throughputs, cleaning, and changing over to a different material are fast and require no tools. The quick-change system, comprising of a discharge slide gate for emptying material, a removable supply hopper, a swivel mounted motor and a dosing screw with quick release connection, makes the station easier to operate and saves valuable time.

Blender status



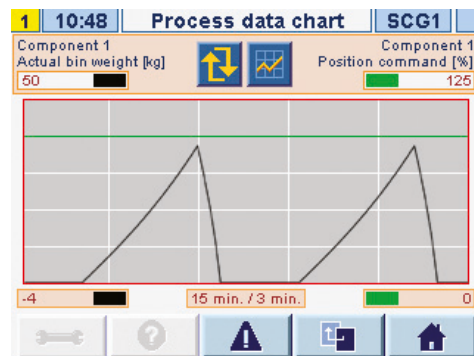
Status component



P205 with GRAVInet SC



Process data diagram



### State-of-the-art control

The GRAVInet SC control system boasts an innovative, Ethernet-based open network architecture. In addition, it offers excellent control characteristics when handling set point jumps and ramp mode thanks to optimised control settings and filter functions. The high-tech touch-screen colour display with LCD-TFT resolution enables simple, intuitive, fast and reliable operation.

SPECTROCOLOR G can be deployed as a stand-alone station for a mono extrusion system or as part of a co-extrusion system with integration via the Ethernet-based CONTROLnet. And of course, the unit meshes perfectly with our other materials management components – all of which can be displayed and operated via a single interface.

GRAVInet SC has comprehensive features for process and recipe management, offers reporting functionality for quality assurance and delivers advanced service functions and graphical display of process data.

### Features in detail:

- Connection of an extruder/throughput control in slave mode, using an analogue set point signal with an optional digital enable function
- Connection to a higher (SCADA-based) automation platform (Supervisory Control And Data Acquisition) via Ethernet or an OPC server
- A process-data diagram (set/actual throughput, position command of the dosing motor maximum, dosing rate and actual hopper weight) for each dosing module and for the entire dosing station enables process monitoring (stability checks, early warning diagnostics for process interruptions, improved process reliability) at configurable time intervals ranging from five minutes to eight hours.
- Installation wizard for intuitive configuration of SPECTROCOLOR G

Dosing module



One-sided bearing mounted dosing screw with a quick release connection



Free-flowing material module



Gravity mixing principle



### Precise dosing

The material flow of each component in the system is captured by a load cell and forwarded to the control system in real time. The materials are dosed continuously and synchronously using speed-controlled high-precision dosing screws.

### Unbeatable mixing quality

motan's unique gravity-mixing principle offers a high level of mix consistency of the components before they reach the extruder. This plays a key role in achieving perfect plasticisation and homogenisation of the materials.

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#### THE BENEFITS OF MOTAN DOSING TECHNOLOGY:

- Inclination of the dosing screws prevents material from trickling out (no uncontrolled dosing into the extruder)
  - One-sided mounting of the dosing screws and short, compact screw construction prevent bulk solids from clogging at the discharge end
  - Compensation zone in the screw dosing sleeve results in low-pulsation dosing
  - Maintenance-free, brushless drive motors with integrated motor management
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# SPECTROCOLOR G

Decoupled refilling platform with integrated material loaders and double slide valves



Volumetric collecting bin 20l with level control unit (rod probe)



Gravimetric collecting bin 15l with level control unit (load cell)



## Reliable refilling of materials

The mechanically decoupled platform for material refilling prevents any negative impact on the weighing process during refilling.

motan offers two types of material refilling in the form of combinable modules.

## With integrated material loaders

Smart integration of material loading through the direct refilling of the weigh bin via a loader with a pneumatic discharge flap. With this type of filling, the loading process is integrated both mechanically and with the control system. This means that SPECTROCOLOR G with loader is delivered as a fully tested system. The benefits are rapid assembly and commissioning and a single-user interface via the GRAVInet SC control panel.

## With integrated double slide valves

Increased process reliability thanks to indirect filling of the weigh bin via a double slide valve, a supply hopper and a material loader without positive closure. motan's double slide valve is guaranteed to close without jamming and significantly reduces refilling time compared to other valves. As a result, the volumetric dosing time is reduced and the gravimetric dosing time increases accordingly.

## Flexible process-driven solutions for extrusion

- Direct adaptation via a free-flowing gravimetric recipe component; for operation on a flood-fed single-screw extruder
- Optional adaptation via level control unit (rod probe or load cell) or start/stop mode; for operation on a flood-fed single screw extruder
- Continuous mixing thanks to exclusive selection of synchronously dosed gravimetric components; for operation on a starve-fed twin screw extruder
- Safety sensor to prevent a material back-up

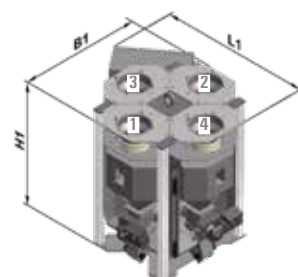
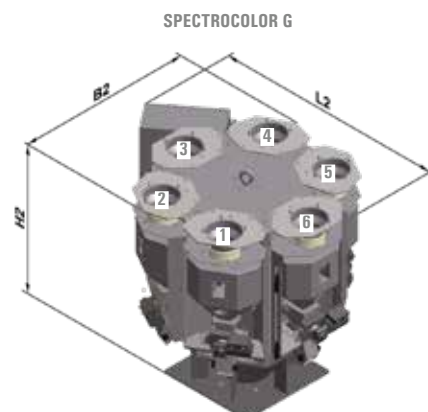
# SPECTROCOLOR G

## TECHNICAL DATA

### Technical data

Dosing and mixing station	SPECTROCOLOR G				
	200 - 4 fold	200 - 6 fold	1200 - 4 fold	1200 - 6 fold	2000 - 6 fold
Gravimetric collecting bin - 15l	x	x	x	x	—
Volumetric collecting bin - 20l	x	x	—	—	—
Volumetric collecting bin - 40l	—	—	x	x	x
B60	x	—	—	—	—
B100	—	—	x	x	—
Number of weigh bins	1 - 4	1 - 6	1 - 4	1 - 6	1 - 6
Weigh bins (comp. no.)					
5l	1 - 3	1 - 5	1 - 3	1 - 5	1 - 5
15l	1 - 4	1 - 6	1 - 4	1 - 6	1 - 6
40l	—	—	1 - 3	1 - 5	1 - 5
80l	—	—	—	—	1, 3, 5
15l (free flowing)	1	1	—	—	—
40l (free flowing)	—	—	1	1	—
80l (free flowing)	—	—	—	—	1
Max. throughput per dosing unit [kg/h]*	500	500	1200	1200	1200
Dosing screw type					
G12S	•	•	•	•	•
G20S	•	•	•	•	•
G26S	•	•	•	•	•
G52S	•	•	•	•	•
G52L	—	—	•	•	•
G78L	—	—	•	•	•
G78XL	—	—	—	—	•
Power supply [V/Hz]	1/N/PE 230/50	1/N/PE 230/50	1/N/PE 230/50	1/N/PE 230/50	1/N/PE 230/50
Connected load [W]	500	500	500	500	500
Dimensions [mm]					
L1	1030	—	1030	—	—
B1	882	—	980	—	—
H1	820	—	963	—	—
L2	—	1376	—	1469	1599
B2	—	1059	—	1191	1498
H2	—	1084	—	1227	1424
Weight approx. [kg]	200	320	220	380	520
Colour RAL (orange/grey)	2011/7040	2011/7040	2011/7040	2011/7040	2011/7040

\* Indicated values for virgin material (bulk density 0.6 kg/dm³)  
Subject to technical changes

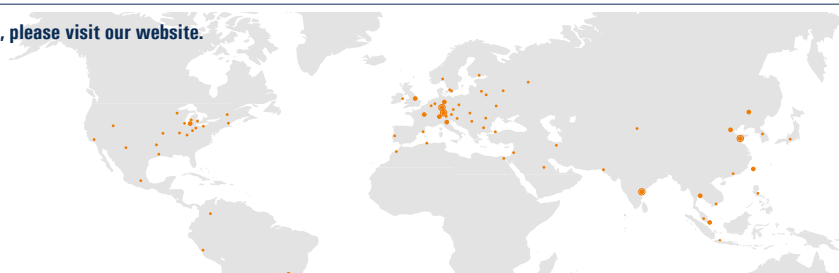


All dimensions in mm

### YOUR BENEFITS

- Excellent short and long-term dosing precision
- Compact, robust design saves space
- Excellent mix consistency thanks to the motan gravity-mixing principle
- Flexible, process-driven solutions for flood-fed single screw extruders and starve-fed twin screw extruders
- Up to six dosing modules, freely combinable
- For throughputs of 0.2 to 1200 kg/h per dosing module
- Rapid material change and easy-to-clean equipment
- Reliable material refilling thanks to material loaders with pneumatic discharge flaps or via a double-slide valve with a supply hopper
- Maintenance-free, 24-hour continuous operation
- Intuitive control thanks to a touch-screen colour display with LCD-TFT resolution and an installation wizard
- Can be connected via Ethernet or OPC server to a host (SCADA-based) platform
- Process monitoring thanks to graphical display of process data for each dosing module and for the entire dosing station

To find your local partner, please visit our website.



[www.motan-colortronic.com](http://www.motan-colortronic.com)