

**Linear Modules
Double Acting
Ø25-50 mm bore**

- Stroke adjustable over full length
- Self adjusting hydraulic damping
- Roller bearing or plastic sliding bearing with adjustable minimum clearance
- Non-contact signal detection via inductive proximity sensors (PNP type) with connector plugs
- Vertical and horizontal mounting

Technical Data

Medium:

Compressed air, filtered and lubricated

Operating Pressure:

4 - 8 bar

Operating Temperature:

+5°C to +70°C

Operation:

Double acting with adjustable hydraulic damping

Air Connection:

Telescopic pipes Ø5 mm

Maximum Load Capacity (including assembled modules):

M/60110/300 – 9.5 kg

M/60110/600 – 3.2 kg

M/60120/300 – 23 kg

M/60120/600 – 17 kg

Maximum Movement Force (along axis of guide):

M/60110 – 2.2 Nm

M/60120 – 5.5 Nm

Standard Stroke Lengths:

M/60110/300 – 300 mm

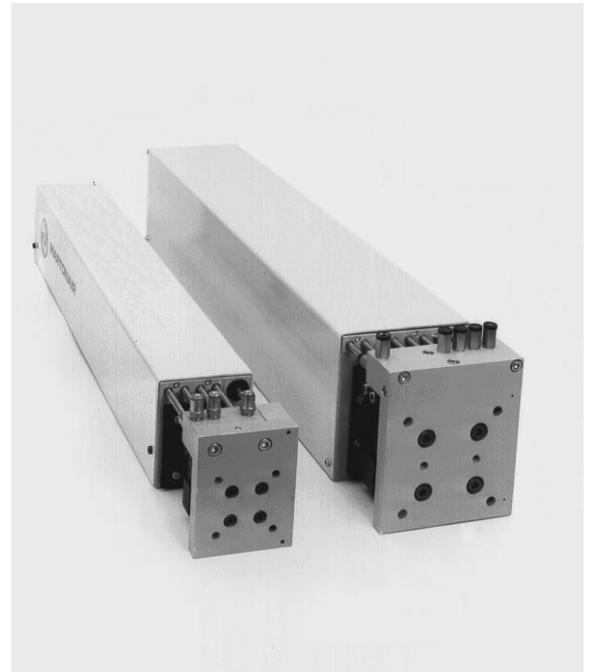
M/60110/600 – 600 mm

M/60120/300 – 300 mm

M/60120/600 – 600 mm

Repetitive Accuracy:

≤0.1 mm



Module Diameters

M/60110 – Ø 25 mm

M/60120 – Ø 50 mm

Materials

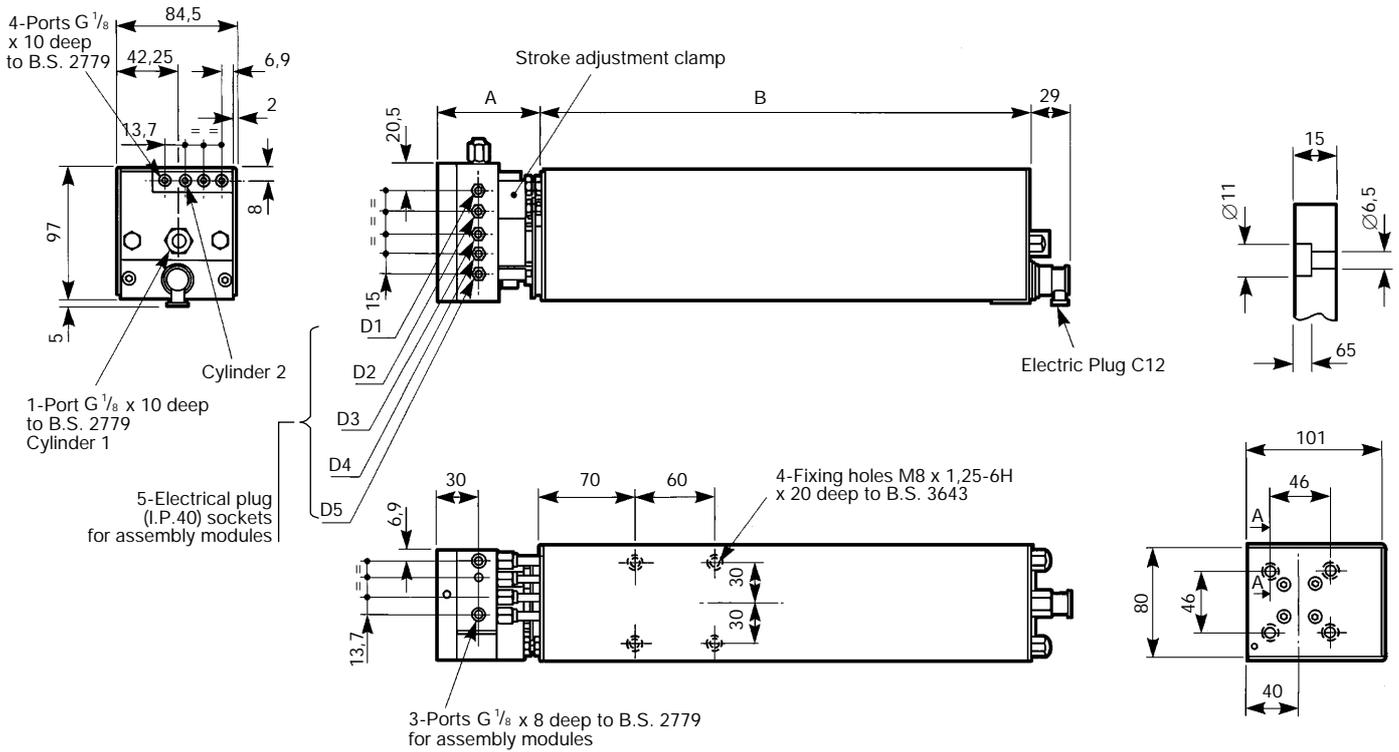
Aluminium outer cover, end plates and cylinder barrel, stainless steel telescopic tubes, brass pipe connectors, cast iron stroke adjustment clamp, stainless steel bearing strips (M/60110) plastic bearing strips (M/60120), nitrile rubber seals.

Ordering Information

To order a basic 25 mm bore Linear Module with a 600 mm stroke quote:
M/60110/600.



Basic Dimensions – Linear Module size ‘A’ – M/60110



Model	M/60110/300	M/60110/600
A (retracted)	77	77
A (extended)	377	677
B	612	912
Weight (kg)	9,25	11,7
Spares kit *	QM/60110/00	QM/60110/00
Refurbishment kit **	QM/60110/300/88	QM/60110/600/88

* Comprises all soft seals.

** Comprises all soft seals, wearing components, sensors, dampers, plugs, sockets and cables.

Possible Assembly Modules

Gripper M/60310.

Short stroke unit M/60160 + gripper M/60310.

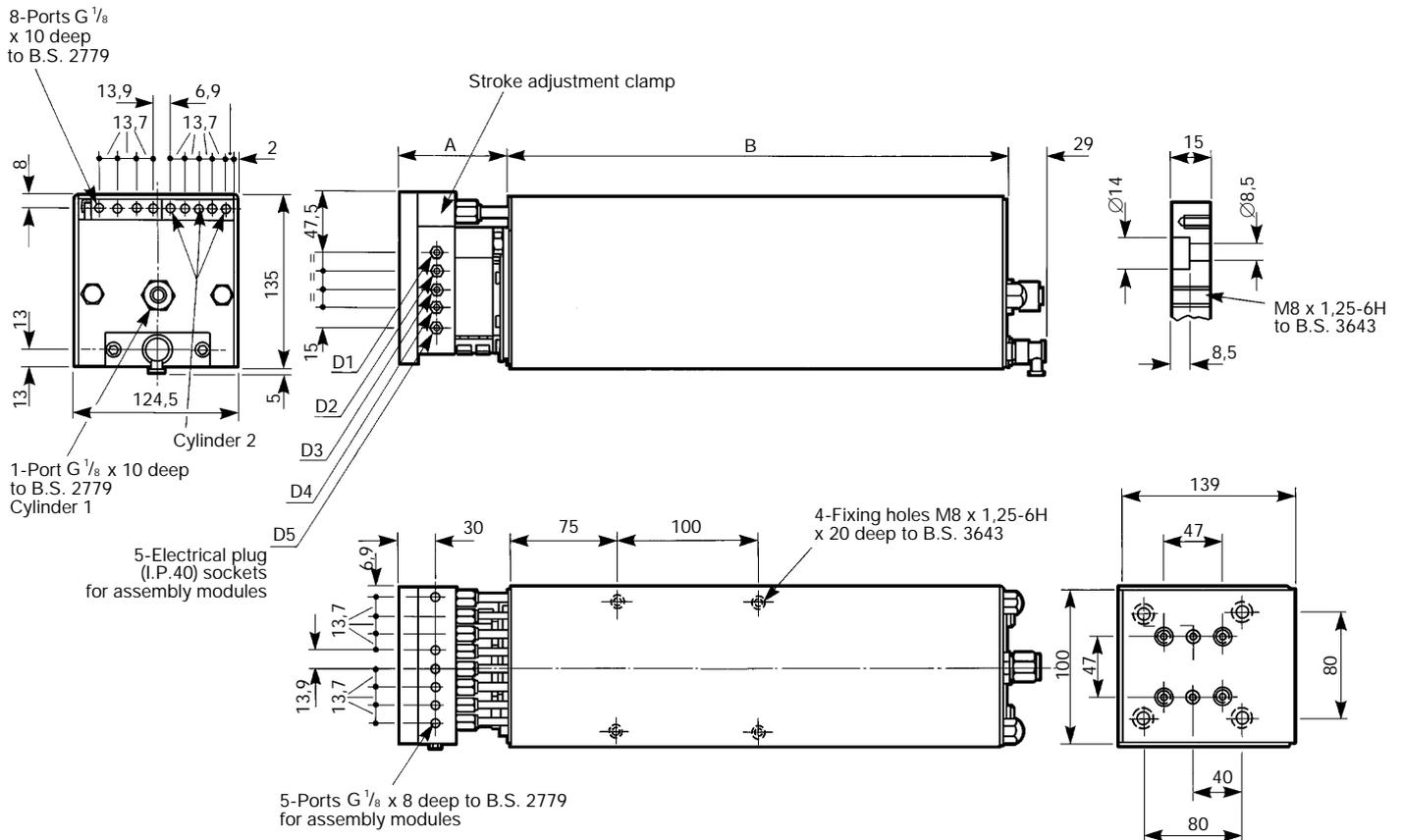
Short stroke unit M/60160 + rotary module M/60210 and gripper M/60310.

Sensor Details

Model number: QM/60011
 Type: PNP
 Gap required (response distance): 1,5 mm
 Voltage: 12-24 V. D.C.
 Maximum load current: 200 mA
 No load current: 12 mA max.
 Screw thread connection: M8 x 1 mm
 Metal housing



Basic Dimensions – Linear Module size ‘B’ – M/60120



Model	M/60120/300	M/60120/600
A (retracted)	87	87
A (extended)	387	687
B	662	962
Weight (kg)	20,3	25,5
Spares kit *	QM/60120/00	QM/60120/00
Refurbishment kit **	QM/60120/300/88	QM/60120/600/88

* Comprises all soft seals.

** Comprises all soft seals, wearing components, sensors, dampers, plugs, sockets and cables.

Possible Assembly Modules

Gripper M/60320.

Short stroke unit M/60170 + gripper M/60320.

Short stroke unit M/60170 + rotary module M/60220 and gripper M/60320.

Linear module M/60110 + gripper M/60310.

Linear module M/60110 + rotary module M/60210 + gripper M/60310.

Linear module M/60110 + short stroke unit M/60160 + gripper M/60310.

Sensor Details

Model number:	QM/60011
Type:	PNP
Gap required (response distance):	1,5 mm
Voltage:	12-24 V. D.C.
Maximum load current:	200 mA
No load current:	12 mA max.
Screw thread connection:	M8 x 1 mm
Metal housing	



Warning

These products are intended for use in industrial compressed air systems only. Do not use these products where *pressures* and *temperatures* can exceed those listed under '**Technical Data**'.

Before using these products with fluids other than those specified, for non-industrial applications, life-support systems, or other applications not within published specifications, consult NORGREN.

Through misuse, age, or malfunction, components used in fluid power systems can fail in various modes. The system designer is warned to consider the failure modes of all component parts used in fluid power systems and to provide adequate safeguards to prevent personal injury or damage to equipment in the event of such failure.

System designers must provide a warning to end users in the system instructional manual if protection against a failure mode cannot be adequately provided.

System designers and end users are cautioned to review specific warnings found in instruction sheets packed and shipped with these products.