

General specifications							
Device name	BOREAS.R – massflow controller						
Model name	LFR1						
Order number	91.xxx (LCD-version)						
Measuring ranges	<ul style="list-style-type: none"> <li>• 200 Nml/min</li> <li>• 500 Nml/min</li> <li>• 1000 Nml/min</li> </ul>						
Accuracy	± 1% rd. + 0,5% fs.						
Dynamics	1:10 (10...100%)						
Resolution (switchable)	<table border="1"> <tr> <td>0,001 / 0,01 Nml/min</td> <td>up to 30 Nml/min</td> </tr> <tr> <td>0,01 / 0,1 Nml/min</td> <td>up to 300 Nml/min</td> </tr> <tr> <td>0,1 / 1 Nml/min</td> <td>up to 3000 Nml/min</td> </tr> </table>	0,001 / 0,01 Nml/min	up to 30 Nml/min	0,01 / 0,1 Nml/min	up to 300 Nml/min	0,1 / 1 Nml/min	up to 3000 Nml/min
0,001 / 0,01 Nml/min	up to 30 Nml/min						
0,01 / 0,1 Nml/min	up to 300 Nml/min						
0,1 / 1 Nml/min	up to 3000 Nml/min						
Additional selectable units	l/h, cm <sup>3</sup> /min, cm <sup>3</sup> /sec, in <sup>3</sup> /min						
Adjustable control behavior	<ul style="list-style-type: none"> <li>• High (fast response)</li> <li>• Medium</li> <li>• Low (slow, accurate response)</li> </ul>						
Adjustable gas standards	<ul style="list-style-type: none"> <li>• Din 1343 – (1013mbar / 0°C)</li> <li>• Din 102 – (981mbar / 20°C)</li> <li>• 936mbar / 20°C</li> <li>• 1013mbar / 20°C</li> <li>• 760mmHg / 25°C</li> <li>• ISO 2533 – (1013mbar / 15°C)</li> </ul>						
Sensor technology	Unidirectional sensor, temperature compensated						
Flow direction	Only positive flow Calibrated at DIN 1343						

Setpoint	
Analog	<ul style="list-style-type: none"> <li>• 0..10V signal input, external</li> </ul>
Digital	<ul style="list-style-type: none"> <li>• USB-interface, external</li> </ul>
Internal	<ul style="list-style-type: none"> <li>• Incremental encoder, internal</li> </ul>

Signal outputs	
Digital output	USB serial converter integrated, bidirectional communication

Power supply	
Power supply	24V DC / regulated
Power consumption	Up to 240mA at 24V, depending on the control behavior
Electrical connection	4 pin. connector, type Conec SAL8

Operating limits	
Temperature range	0...50°C
Max. permissible flow	20 l/min
Max. permissible both side pressure	<ul style="list-style-type: none"> <li>• 25 PSI</li> <li>• 100 PSI – optional*</li> </ul>
Warm-up time	30 min min for optimal results
Medium	Air and dry, non corrosive gases

USB interface											
USB port	USB type B / mini										
Transmission parameters	<table border="0"> <tr> <td>Baud rate:</td> <td>9600</td> </tr> <tr> <td>Data bits:</td> <td>8</td> </tr> <tr> <td>Stop bits:</td> <td>1</td> </tr> <tr> <td>Parity:</td> <td>none</td> </tr> <tr> <td>Flow control:</td> <td>Xon / Xoff</td> </tr> </table>	Baud rate:	9600	Data bits:	8	Stop bits:	1	Parity:	none	Flow control:	Xon / Xoff
Baud rate:	9600										
Data bits:	8										
Stop bits:	1										
Parity:	none										
Flow control:	Xon / Xoff										

Mechanical properties	
Pressure connections	Hose connection with union nut: <ul style="list-style-type: none"> <li>• 6/4 (4mm inside) – standard</li> </ul> Plug-in hose connection: <ul style="list-style-type: none"> <li>• 6/4 (4mm inside)</li> </ul>
Dimensions	155 x 80 x 70 mm
Weight	450 g
Housing material	ABS
Mounting position	Any
Protection class	Splash-proof IP65

Scope of supply	
Accessories (included)	Connector 4-pin, incl. Cabel 2m, Type Conec SAL8 (SAL8 RS42)

Options	
USB interface	External IP65 protected USB interface
Digital output	Bluetooth, virtual com-port
Enclosure	Tool-less opening

\* On request (not available for all devices / see onlineshop)