



# Rotation Speed Control Sensors, series RSS/RSN/RSD-LTD-100

RSD-LTD-100-GD

II 2G Ex d IIC T6

**Housing M30** 

RSN-LTD-100-GD



With analog voltage output 0V to 10V

Well applicable with plastic fibre optics (POF)

Laser-emitter, red light 650nm

Type RSD: applicable in Ex Zones 1 + 20/21

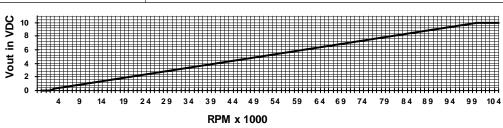
Type RSN: applicable in Ex Zones 2+22

II 3G Ex nA IIB T4 II 3D Ex tD A22 IP67 T140°C Speed control from 3'000RPM to 100'000 RPM

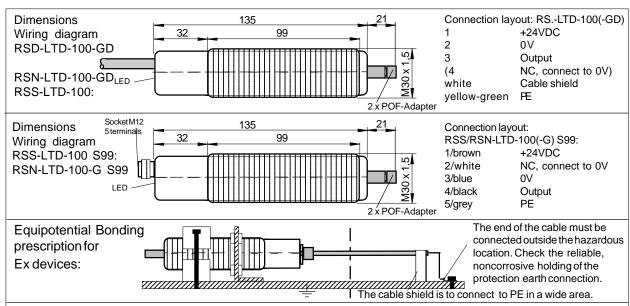
II 1/2D Ex tD A20/21 IP67 T90°C • Very high reliability (FMC)

Technical data	<ul> <li>Very high reliability (EMC)</li> </ul>					
Type of Ex protection, Dust, at 94/6/EC			RSS-LTD-100	RSN-LTD-100-GD	RSD-LTD-100-GD	
Applicable in Ex Zones	Type of Ex protection, Gas, a	t 94/9/EC	None	II 3G Ex nA IIB T4	II 2G Ex d IIC T6	
Laser class   Class   L.650nm visible red, Po <= ImW	Type of Ex protection, Dust, at 94/9/EC		None	II3DExtDA22IP67T140°C	II 1/2D ExtD A20/21 IP67 T90°C	
Frequency range   100Hz - 3333Hz/mes	Applicable in Ex Zones		Zones 2 and 22 Zones 1, 2, 20/21, 22			
Supply voltage  Current consumption  Power dissipation  Analog voltage output range, output type  Output load range  (Current consumption  Ray (Company (C						
Absolute maximum input voltage Um Current consumption Power dissipation Analog voltage output range, output type Output load range Output impedance Ripple Accessories included, only RSS/RSN-LTD-100-G) S99 not included Accessories for all types, not included Options  ATEX related designations  Output to a range Output impedance  Rasolution  80mA  Rawing Dam Raw	1 7 0					
SomA   SomA   Som   S	117		,			
Power dissipation   maximum 2.5W						
Analog voltage output range, output type  Output land range  Output impedance  Ripple  1.244mV / 24.48RPM  Output signal tracing  2.44mV / 24.48RPM  Power up delay time  Resolution  Resolution  Resolution  Benclosure rating at EN 60529  Working temperature TA  Working temperature TA  Shock and vibrating resistance  Electrical connection, RSNRSD-LTD-100-GD  Electrical connection, RSNRSD-LTD-100-GD  Cable: 3/4 + PE x 0.5mm², PPC, shielded, leads numbering marked, L=10r  Cable: 3/4 + PE x 0.5mm², PPC, shielded, leads numbering marked, L=3m  Scoket, MSS, RSN-LTD-100-GI S99  POF connection  Accessories included, all types  Accessories included, only RSN-LTD-100-G S99  or included  Accessories only RSS/RSN-LTD-100(-G) S99  not included  Options  ACCessories for all types, not included  Options  ATEX related designations  Output:  Outp			5.5			
Output impedance Ripple  Output signal tracing  Output signal tracing  Output signal tracing  Output signal tracing  Power up delay time  Resolution  M30, brass, nickel plated  Enclosure rating at EN 60529  IP65  IP67  IP67  IP67  IP67  IP67  IP67  Shock and vibrating resistance  Vibration: 30g over 20Hz to 2kHz. Shock:50g for each direction (X, Y, Z)  Electrical connection, RSIN/RSID-LTD-100-GD  Electrical connection, RSIN/RSID-LTD-100-GD  Electrical connection, RSIN/RSID-LTD-100-GD  Socket, RSS/RSNL-TD-100(-G) S99  Socket, M12, 5 terminals, Lumbering marked, L-3/m  Socket, RSS/RSNL-TD-100-GD  Accessories included, all types  - 2x Nuts M30  - 2x Protection caps for the POF connections  Accessories, only RSS/RSN-LTD-100(-G) S99  Accessories, only RSS/RSN-LTD-100(-G) S99  Accessories, only RSS/RSN-LTD-100(-G) S99  Accessories, only RSS/RSN-LTD-100(-G) S99  Accessories included, Only RSN-LTD-100-GS 99  - 1x Safety lock device, mount at the cable connection, for locking the connection, (black synthetic device)  - 1x Varning plate "WARNING-Explosion Hazard - Do Not Disconnect While Circuit is Live Unless Area is Known To Be Non-Hazardous", self-sealing, for gluing on the cable connector  Accessories for all types, not included  Options  Accessories for all types, not included  Options  ATEX related designations  ATEX related d	·					
Output impedance   Max.25Ω   Ripple   2.44mV / 24.45RPM   2.44mV / 24.45RPM   2.58c.   Resolution   9700RPMV   8700RPMV   87						
Ripple Output signal tracing Output signal tracing Power up delay time Resolution Resolu			***			
Output signal tracing Power up delay time Resolution Housing Enclosure rating at EN 60529 Brefs Working temperature TA Wibration: 30g over 20Hz to 2kHz. Shock: 50g for each direction (X, Y, Z) Electrical connection, RSN/RSD-LTD-100-GD Electrical connection, RSN/RSD-LTD-100-GD Electrical connection, RSN-LTD-100-GD Electrical connection, RSS-LTD-100 Cable: 344 +PE x 0,5mm², TPE, oil resistent, shielded, leads numbering marked, L=10r Electrical connection, RSS-LTD-100 Cable: 344 +PE x 0,5mm², PVC, shielded, leads numbering marked, L=10r Electrical connection, RSS-LTD-100 Cable: 344 +PE x 0,5mm², PVC, shielded, leads numbering marked, L=10r Electrical connection, RSS-LTD-100 Cable: 344 +PE x 0,5mm², PVC, shielded, leads numbering marked, L=10r Cable: 344 +PE x 0,5mm², PVC, shielded, leads numbering marked, L=10r Cable: 344 +PE x 0,5mm², PVC, shielded, leads numbering marked, L=10r Cable: 344 +PE x 0,5mm², PVC, shielded, leads numbering marked, L=10r Cable: 344 +PE x 0,5mm², PVC, shielded, leads numbering marked, L=10r Cable: 344 +PE x 0,5mm², PVC, shielded, leads numbering marked, L=10r Cable: 344 +PE x 0,5mm², PVC, shielded, leads numbering marked, L=10r Cable: 344 +PE x 0,5mm², PVC, shielded, leads numbering marked, L=10r Cable: 344 +PE x 0,5mm², PVC, shielded, leads numbering marked, L=10r Cable: 344 +PE x 0,5mm², PVC, shielded, leads numbering marked, L=10r Cable: 344 +PE x 0,5mm², PVC, shielded, leads numbering marked, L=10r Cable: 344 +PE x 0,5mm², PVC, shielded, leads numbering marked, L=10r Cable: 344 +PE x 0,5mm², PVC, shielded, leads numbering marked, L=10r Cable: 344 +PE x 0,5mm², PVC, shielded, leads numbering marked, L=10r Cable: 344 +PE x 0,5mm², PVC, shielded, leads numbering marked, L=10r Cable: 344 +PE x 0,5mm², PVC, shielded, leads numbering marked, L=10r Cable: 344 +PE x 0,5mm², PVC, shielded, leads numbering marked, L=10r Cable: 344 +PE x 0,5mm², PVC, shielded, leads numbering marked, L=3m Cable: 344 +PE x 0,5mm², PVC, shielded, leads numbering marked, L=3m Cable: 344 +PE x 0,5mm², PVC, shielded	<u> </u>					
Power up delay time   Proceedings   Processing   Proces			11			
Resolution    M30, brass, nickel plated						
Housing Enclosure rating at EN 60529  Working temperature TA  Shock and vibrating resistance  Cable: 3/4 + PE x 0,5mm², PVC, shielded, leads numbering marked, L=10r  Electrical connection, RSN-LTD-100-GD  Electrical connection, RSS-LTD-100  Socket, RSS/RSN-LTD-100-GS 99  POF connection  Accessories included, all types  - 2x Protection caps for the POF connection, Core: 1.0mm, without special tools  - 2x Nuts M30  - 2x Nuts M30  - 2x Nuts M30  - 1x Safety lock device, mount at the cable connection, for locking the connection. (black synthetic device)  - 1x Warring plate "WaRNING - Explosion Hazard - Do Not Disconnect While Circuit Is Live Unless Area Is Known To Be Non-Hazardous", self-sealing, for gluing on the cable connector  Accessories for all types, not included  Options  ATEX related designations  ATEX related designations  M30, brass, nickel plated  PPOF CAR + 4-50°C  Vibration: 30g over 20Hz to 2kHz. Shock:50g for each direction (X, Y, Z)  Voltage output 0.3VDC to 10VDC  Output:  Vibration: 30g over 20Hz to 2kHz. Shock:50g for each direction (X, Y, Z)  Vibration: 30g over 20Hz to 2kHz. Shock:50g for each direction (X, Y, Z)  Vibration: 30g over 20Hz to 2kHz. Shock:50g for each direction (X, Y, Z)  Vibration: 30g over 20Hz to 2kHz. Shock:50g for each direction (X, Y, Z)  Voltage output 0.3VDC to 10VDC  Vibration: 30g over 20Hz to 2,5nex; Shock M12; Lumberg RSF 5, 5 terminals, such as the cable connector of the cable connection. (black synthetic device)  - 1x Safety lock device, mount at the cable connection, for locking the connection. (black synthetic device)  - 1x Safety lock device, mount at the cable connection. (black synthetic device)  - 1x Safety lock device, mount at the cable connection. (black synthetic device)  - 1x Safety lock device, mount at the cable connection. (black synthetic device)  - 1x Safety lock device, mount at the cab						
Enclosure rating at EN 60529  Working temperature TA  0°C < TA < +50°C  Vibration: 30g over 20Hz to 2kHz. Shock:50g for each direction (X, Y, Z)  Electrical connection, RSN/RSD-LTD-100-GD  Electrical connection, RSS-LTD-100  Socket, RSS/RSN-LTD-100(-G) S99  Socket, M12, 5 terminals, Lumberg RSF 5  POF connection  Accessories included, all types  - 1x Warning plate "WARNING - Explosion Hazard - Do Not Disconnection, RSN/RSD-LTD-100(-G) S99  Accessories included, only RSN-LTD-100(-G) S99  Accessories, only RSS/RSN-LTD-100(-G) S99  Accessories for all types, not included  Accessories for all types, not included  Options  Accessories for all types, not included  Options  ATEX related designations  Included  Options  Included  ATEX related designations  Included						
Working temperature TA						
Shock and vibrating resistance Electrical connection, RSN/RSD-LTD-100-GD Electrical connection, RSS-LTD-100 Cable: 3/4 + PE x 0,5mm², TPE, oil resistent, shielded, leads numbering marked, L=10r Cable: 3/4 + PE x 0,5mm², TPE, oil resistent, shielded, leads numbering marked, L=3m Socket, RSS/RSN-LTD-100(-G) S99 Socket, RSS/RSN-LTD-100(-G) S99 POF connection Accessories included, all types  - 2x Nuts M30 - 2x Protection caps for the POF connections Accessories included, only RSN-LTD-100-G S99 - 1x Warning plate "WARNING - Explosion Hazard - Do Not Disconnect While Circuit Is Live Unless Area Is Known To Be Non-Hazardous*, self-sealing, for gluing on the cable connector Accessories for all types, not included Options  - RSX-LTD-100-G S99 ATEX related designations  ATEX related designations  Vibration: 30g over 20Hz to 2kHz. Shock:50g for each direction (X, Y, Z) Cable: 3/4 + PE x 0,5mm², TPE, oil resistent, shielded, leads numbering marked, L=3m Cable: 3/4 + PE x 0,5mm², TPE, oil resistent, shielded, leads numbering marked, L=3m Socket, M12, 5 terminals, Lumberg RSF 5  - 2x Nuts M30 - 2x Protection caps for the POF connections - 1x Safety lock device, mount at the cable connection, folick synthetic device) - 1x Warning plate "WARNING - Explosion Hazard - Do Not Disconnect While Circuit Is Live Unless Area Is Known To Be Non-Hazardous*, self-sealing, for gluing on the cable connector - Cord Set Lumberg RKTS 5-298/xx (straight type), or RKTW/RKWTH 5-298/xx (irgit angle type) - Different types of POF, on request - RSX-LTD-100(-G) S99 Socket M12: Lumberg RSF 5, 5 terminals (S99 only II 3G, without dust protection) - RSX-LTD-100(-G) S99 Socket M12: Lumberg RSF 5, 5 terminals (S99 only II 3G, without dust protection) - RSX-LTD-100(-G) S99 Socket M12: Lumberg RSF 5, 5 terminals (S99 only II 3G, without dust protection) - RSX-LTD-100(-G) S99 Socket M12: Lumberg RSF 5, 5 terminals (S99 only II 3G, without dust protection) - RSX-LTD-100(-G) S99 Socket M12: Lumberg RSF 5, 5 terminals (S99 only II 3G, without dust protection)			IP65		IP6/	
Electrical connection, RSN/RSD-LTD-100-GD Electrical connection, RSS-LTD-100 Cable: 3/4 + PE x 0,5mm², PVC, shielded, leads numbering marked, L=10r Socket, RSS/RSN-LTD-100(-G) 599 Socket, M12, 5 terminals, Lumberg RSF 5 POF connection Accessories included, all types			Vibration: 20 m aven 2011			
Electrical connection, RSS-LTD-100  Socket, RSS/RSN-LTD-100(-G) S99  Socket, M12, 5 terminals, Lumberg RSF 5  POF connection  Accessories included, all types  Accessories included, only RSN-LTD-100-G S99  Accessories included, only RSN-LTD-100-G S99  Accessories, only RSS/RSN-LTD-100(-G) S99  Accessories, only RSS/RSN-LTD-100(-G) S99  Accessories for all types, not included  Options  ATEX related designations  CE0158  ATEX related designations  Cable: 3/4 +PE x 0,5mm², PVC, shielded, leads numbering marked, L=3m  Socket, M12, 5 terminals, Lumberg RSF 5  Accessories 2.2mm / Core: 1.0mm, without special tools  Accessories included, only RSS/RSN-LTD-100-G S99  Accessories, only RSS/RSN-LTD-100-G S99  Accessories, only RSS/RSN-LTD-100(-G) S99  Accessories for all types, not included  Options  ATEX related designations  CE0158  ATEX related designations  ATEX related designations  CE0158  CE0158  CE0158  CE0158  CE0158  CE0158  CE0158  Anufacturer with address (S99 only II 3G, without dust protection)  - RSX-LTD-100-GD) S165: Cable type Oillex 810CP, length on request  CE0158  CE015						
Socket, RSS/RSN-LTD-100(-G) S99   Socket, M12, 5 terminals, Lumberg RSF 5	,					
POF connection       Matched for POF, Cover: 2.2mm / Core: 1.0mm, without special tools         Accessories included, all types       - 2x Nuts M30         Accessories included, only RSN-LTD-100-G S99       - 1x Safety lock device, mount at the cable connection, for locking the connection. (black synthetic device)         - 1x Warning plate "WARNING- Explosion Hazard - Do Not Disconnect While Circuit Is Live Unless Area Is Known To Be Non-Hazardous", self-sealing, for gluing on the cable connector         Accessories, only RSS/RSN-LTD-100(-G) S99 not included       - Cord Set Lumberg RKTS 5-298/xx (triaght type), or RKTW/RKWTH 5-298/xx (right angle type)         Accessories for all types, not included       - Different types of POF, on request         Options       - RSx-LTD-100(-GD) S158: Current loop output, 4mA to 20mA         - RSS/N-LTD-100(-GD) S165: Cable type Ölflex 810CP, length on request         ATEX related designations       CE 0158 Manufacturer with address RSD: II 2G Ex d IIC T6, II 1/2D Ex tD A20/21 IP67 T30°C         RSD: II 3G Ex nA IIB T4, II 3D Ex tD A22 IP67 T140°C       RSN: S99: II 3G Ex nA IIB T4         RSN: Oc < TA < +50°C	·					
Accessories included, all types  - 2x Nuts M30 - 2x Protection caps for the POF connections  - 1x Safety lock device, mount at the cable connection, for locking the connection. (black synthetic device) - 1x Warning plate "WARNING - Explosion Hazard - Do Not Disconnect While Circuit Is Live Unless Area Is Known To Be Non-Hazardous", self-sealing, for gluing on the cable connector  - Cord Set Lumberg RKTS 5-298/xx (straight type), or RKTW/RKWTH 5-298/rx (ight angle type)  - RX-LTD-100-GD \$158: Current loop output, 4mA to 20mA - RSS/N-LTD-100(-G) \$99: Socket M12: Lumberg RSF 5, 5 terminals (S99 only II 3G, without dust protection) - RSx-LTD-100(-GD) \$165: Cable type Diffex 810CP, length on request  - RSS: Type test certificate: DEKRA EXAM. Number: DMT 99 ATEX E 056 - RSN: II 3G Ex nA IIB T4, II 3D Ex tD A20/21 IP67 T90°C - RSN \$99: II 3G Ex nA IIB T4 - RSN: Declaration by manufacturer:  - Tech, file no. AN-MAT-08-EX-E056 - TA: 0°C < TA < +50°C - Date of construction: Numeral 4 to 7 of the serial number  - Output:  - Voltage output 0.3VDC to 10VDC  - Output		3) 399				
Accessories included, only RSN-LTD-100-G S99  - 1x Safety lock device, mount at the cable connection, for locking the connection, (black synthetic device) - 1x Warning plate "WARNING - Explosion Hazard - Do Not Disconnect While Circuit Is Live Unless Area Is Known To Be Non-Hazardous", self-sealing, for gluing on the cable connector  - Cord Set Lumberg RKTS 5-298/xx (straight type), or not included - RKTW/RKWTH 5-298/xx (fight angle type) - Cord Set Lumberg RKTS 5-298/xx (straight type), or RKTW/RKWTH 5-298/xx (fight angle type) - Different types of POF, on request - RSx-LTD-100-GD \$158: Current loop output, 4mA to 20mA - RSx/N-LTD-100(-G) \$99: Socket M12: Lumberg RSF 5, 5 terminals (S99 only II 3G, without dust protection) - RSx-LTD-100(-GD) \$165: Cable type Ölflex 810CP, length on request - CE0158 - RSD: II 2G Ex d IIC T6, II 1/2D Ex tD A20/21 IP67 T90°C - RSD: Type test certificate: DEKRA EXAM. Number: DMT 99 ATEX E 056 - RSN: II 3G Ex nA IIB T4, II 3D Ex tD A22 IP67 T140°C - RSN 599: II 3G Ex nA IIB T4, II 3D Ex tD A22 IP67 T140°C - RSN 599: II 3G Ex nA IIB T4, II 3D Ex tD A22 IP67 T140°C - RSN 599: II 3G Ex nA IIB T4, II 3D Ex tD A22 IP67 T140°C - RSN 599: II 3G Ex nA IIB T4, II 3D Ex tD A22 IP67 T140°C - RSN 599: II 3G Ex nA IIB T4, II 3D Ex tD A22 IP67 T140°C - RSN 599: II 3G Ex nA IIB T4, II 3D Ex tD A22 IP67 T140°C - RSN 599: II 3G Ex nA IIB T4, II 3D Ex tD A22 IP67 T140°C - RSN 599: II 3G Ex nA IIB T4, II 3D Ex tD A22 IP67 T140°C - RSN 599: II 3G Ex nA IIB T4, II 3D Ex tD A22 IP67 T140°C - RSN 599: II 3G Ex nA IIB T4, II 3D Ex tD A22 IP67 T140°C - RSN 599: II 3G Ex nA IIB T4, II 3D Ex tD A22 IP67 T140°C - RSN 599: II 3G Ex nA IIB T4, II 3D Ex tD A22 IP67 T140°C - RSN 599: II 3G Ex nA IIB T4, II 3D Ex tD A22 IP67 T140°C - RSN 599: II 3G Ex nA IIB T4, II 3D Ex tD A22 IP67 T140°C - RSN 599: II 3G Ex nA IIB T4, II 3D Ex tD A22 IP67 T140°C - RSN 599: II 3G Ex nA IIB T4, II 3D Ex tD A22 IP67 T140°C - RSN 599: II 3G Ex nA IIB T4, II 3D Ex tD A22 IP67 T140°C - RSN 599: II 3G Ex nA IIB T4, II 3D Ex tD A22 IP67						
Accessories included, only RSN-LTD-100-G S99  - 1x Safety lock device, mount at the cable connection, for locking the connection, (black synthetic device) - 1x Warning plate "WARNING - Explosion Hazard - Do Not Disconnect While Circuit Is Live Unless Area Is Known To Be Non-Hazardous", self-sealing, for gluing on the cable connector - Cord Set Lumberg RKTS 5-298/xx (straight type), or RKTW/RKWTH 5-298/xx (fight angle type) - Different types of POF, on request - RSx-LTD-100-GD \$158: Current loop output, 4mA to 20mA - RSS/N-LTD-100(-GD) \$99: Socket M12: Lumberg RSF 5, 5 terminals (S99 only II 3G, without dust protection) - RSx-LTD-100(-GD) \$165: Cable type Ölflex 810CP, length on request - RSD: II 2G Ex d IIC T6, II 1/2D Ex tD A20/21 1/967 T90°C - RSD: Type test certificate: DEKRA EXAM. Number: DMT 99 ATEX E 056 - RSN: II 3G Ex nA IIB T4, II 3D Ex tD A22 IP67 T140°C - RSN S99: II 3G Ex nA IIB T4, II 3D Ex tD A22 IP67 T140°C - RSN S99: II 3G Ex nA IIB T4, II 3D Ex tD A20/21 IP67 T90°C - RSN S99: II 3G Ex nA IIB T4, II 3D Ex tD A20/21 IP67 T90°C - RSN S99: II 3G Ex nA IIB T4, II 3D Ex tD A20/21 IP67 T90°C - RSN S99: II 3G Ex nA IIB T4, II 3D Ex tD A20/21 IP67 T90°C - RSN S99: II 3G Ex nA IIB T4, II 3D Ex tD A20/21 IP67 T90°C - RSN S99: II 3G Ex nA IIB T4, II 3D Ex tD A20/21 IP67 T90°C - RSN S99: II 3G Ex nA IIB T4, II 3D Ex tD A20/21 IP67 T90°C - RSN S99: II 3G Ex nA IIB T4, II 3D Ex tD A20/21 IP67 T90°C - RSN S99: II 3G Ex nA IIB T4, II 3D Ex tD A20/21 IP67 T90°C - RSN S99: II 3G Ex nA IIB T4, II 3D Ex tD A20/21 IP67 T90°C - RSN S99: II 3G Ex nA IIB T4, II 3D Ex tD A20/21 IP67 T90°C - RSN S99: II 3G Ex nA IIB T4, II 3D Ex tD A20/21 IP67 T90°C - RSN S99: II 3G Ex nA IIB T4, II 3D Ex tD A20/21 IP67 T90°C - RSN S99: II 3G Ex nA IIB T4, II 3D Ex tD A20/21 IP67 T90°C - RSN S99: II 3G Ex nA IIB T4, II 3D Ex tD A20/21 IP67 T90°C - RSN S99: II 3G Ex nA IIB T4, II 3D Ex tD A20/21 IP67 T90°C - RSN S99: II 3G Ex nA IIB T4, II 3D Ex tD A20/21 IP67 T90°C - RSN S99: II 3G Ex nA IIB T4, II 3D Ex tD A20/21 IP67 T90°C - RSN S99:	Accessories included, all typ	<del>6</del> 5		ha BOE connections		
for locking the connection. (black synthetic device) - 1x Warning plate "WARNING - Explosion Hazard - Do Not Disconnect While Circuit Is Live Unless Area Is Known To Be Non-Hazardous", self-sealing, for gluing on the cable connector  Accessories, only RSS/RSN-LTD-100(-G) S99 - Ord Set Lumberg RKTS 5-298/xx (straight type), or RKTW/RKWTH 5-298/xx (inght angle type) - Cord Set Lumberg RKTS 5-298/xx (straight type), or RKTW/RKWTH 5-298/xx (inght angle type) - Cord Set Lumberg RKTS 5-298/xx (straight type), or RKTW/RKWTH 5-298/xx (inght angle type) - Different types of POF, on request - RSX-LTD-100(-G) S165: Current loop output, 4mA to 20mA - RSX-LTD-100(-G) S99: Socket M12: Lumberg RSF 5, 5 terminals (S99 only II 3G, without dust protection) - RSX-LTD-100(-G) S165: Cable type Ölflex 810CP, length on request - RSX-LTD-100(-G) S165: Cable type Ölflex 810CP, length on request - RSX-LTD-100(-G) S165: Cable type Ölflex 810CP, length on request - RSX-LTD-100(-G) S165: Cable type Ölflex 810CP, length on request - RSX-LTD-100(-G) S165: Cable type Ölflex 810CP, length on request - RSX-LTD-100(-G) S165: Cable type Ölflex 810CP, length on request - RSX-LTD-100(-G) S165: Cable type Ölflex 810CP, length on request - RSX-LTD-100(-G) S165: Cable type Ölflex 810CP, length on request - RSX-LTD-100(-G) S165: Cable type Ölflex 810CP, length on request - RSX-LTD-100(-G) S165: Cable type Ölflex 810CP, length on request - RSX-LTD-100(-G) S165: Cable type Ölflex 810CP, length on request - RSX-LTD-100(-G) S165: Cable type Ölflex 810CP, length on request - RSX-LTD-100(-G) S165: Cable type Ölflex 810CP, length on request - RSX-LTD-100(-G) S165: Cable type Ölflex 810CP, length on request - RSX-LTD-100(-G) S165: Cable type Ölflex 810CP, length on request - RSX-LTD-100(-G) S165: Cable type) - RS	Accessories included					
- 1x Warning plate "WARNING - Explosion Hazard - Do Not Disconnect While Circuit Is Live Unless Area Is Known To Be Non-Hazardous", self-sealing, for gluing on the cable connector  Accessories, only RSS/RSN-LTD-100(-G) S99 not included  Accessories for all types, not included  Options  - Cord Set Lumberg RKTS 5-298/xx (straight type), or RKTW/RKWTH 5-298/xx (right angle type)  - Different types of POF, on request  - RSx-LTD-100-GD S158: Current loop output, 4mA to 20mA  - RSS/N-LTD-100(-G) S99: Socket M12: Lumberg RSF 5, 5 terminals (S99 only II 3G, without dust protection)  - RSx-LTD-100(-GD) S165: Cable type Ölflex 810CP, length on request  CE 0158  - RSN: II 2G Ex d IIC T6, II 1/2D Ex tD A20/21 IP67 T90°C  RSD: Type test certificate: DEKRA EXAM. Number: DMT 99 ATEX E 056  RSN: II 3G Ex nA IIB T4, IIB T4, IIB T4, IIB T4  RSN: Declaration by manufacturer:  Ta: 0°C < TA < +50°C  Electrical data according to the chart Date of construction: Numeral 4 to 7 of the serial number  Output:  Voltage output 0.3VDC to 10VDC  3'000 RPM to 100'000RPM  - 1x Warning plate "WARNING - Explosion on the cable connector  - Cord Set Lumberg RKTS 5-298/xx (straight type), or RKTW/RKWTH 5-298/xx (straight type), or RKTW/RKTWTH 5-298/xx (straight type), or RKTW/RKTWTH 5-298/xx (straight type), or RKTW/RKTWTH 5-298/xx (straight	-					
connect While Circuit Is Live Unless Area Is Known To Be Non-Hazardous", self-sealing, for gluing on the cable connector  Accessories, only RSS/RSN-LTD-100(-G) S99 not included  Accessories for all types, not included  Options  - Cord Set Lumberg RKTS 5-298/xx (straight type), or RKTW/RKWTH 5-298/xx (right angle type)  - Different types of POF, on request  - RSx-LTD-100-GD S158: Current loop output, 4mA to 20mA  - RSS/N-LTD-100(-G) S99: Socket M12: Lumberg RSF 5, 5 terminals (S99 only II 3G, without dust protection)  - RSx-LTD-100(-GD) S165: Cable type Ölflex 810CP, length on request  CE 0158  - RSD: Type test certificate: DEKRA EXAM. Number: DMT 99 ATEX E 056  - RSN: II 3G Ex nA IIB T4, II 3D Ex tD A22 IP67 T140°C  - RSN S99: II 3G Ex nA IIB T4  - RSN: Declaration by manufacturer:  Tech. file no. AN-MAT-08-EX-E056  TA: 0°C < TA < +50°C  Date of construction: Numeral 4 to 7 of the serial number  Output:  Voltage output 0.3VDC to 10VDC  3'000 RPM to 100'000RPM  - Cord Set Lumberg RkTs 5-298/xx (straight type), or RkTW/RKWTH 5-298/xx (straight type), or RkTW/RKTH 5-298/xx (str	Offiny 1314-E1D-100-0 399					
Hazardous", self-sealing, for gluing on the cable connector						
Accessories, only RSS/RSN-LTD-100(-G) S99 not included  Accessories for all types, not included  Options  - Cord Set Lumberg RKTS 5-298/xx (straight type), or RKTW/RKWTH 5-298/xx (right angle type)  - Different types of POF, on request  - RSx-LTD-100(-G) S99: Socket M12: Lumberg RSF 5, 5 terminals (S99 only II 3G, without dust protection)  - RSx-LTD-100(-GD) S165: Cable type Ölftex 810CP, length on request  CE 0158  ATEX related designations  - RSx-LTD-100(-GD) S165: Cable type Ölftex 810CP, length on request  CE 0158  RSD: II 2G Ex d IIC T6, II 1/2D Ex tD A20/21 IP67 T90°C  RSD: Type test certificate: DEKRA EXAM. Number: DMT 99 ATEX E 056  RSN: II 3G Ex nA IIB T4, II 3D Ex tD A22 IP67 T140°C  RSN S99: II 3G Ex nA IIB T4  RSN: Declaration by manufacturer: Tech. file no. AN-MAT-08-EX-E056  TA: 0°C < TA < +50°C  Date of construction: Numeral 4 to 7 of the serial number  Output:  Voltage output 0.3VDC to 10VDC  3'000 RPM to 100'000RPM  Output:						
not included  Accessories for all types, not included Options  - Different types of POF, on request - RSX-LTD-100-GD \$158: Current loop output, 4mA to 20mA - RSS/N-LTD-100(-G) \$99: Socket M12: Lumberg RSF 5, 5 terminals (S99 only II 3G, without dust protection) - RSX-LTD-100(-GD) \$165: Cable type Ölflex 810CP, length on request  ATEX related designations  CE 0158 RSD: II 2G Ex d IIC T6, II 1/2D Ex tD A20/21 IP67 T90°C RSD: Type test certificate: DEKRA EXAM. Number: DMT 99 ATEX E 056 RSN: II 3G Ex nA IIB T4, II 3D Ex tD A22 IP67 T140°C RSN S99: II 3G Ex nA IIB T4 RSN: Declaration by manufacturer: Tech. file no. AN-MAT-08-EX-E056 TA: 0°C < TA < +50°C Date of construction: Numeral 4 to 7 of the serial number  Output: Voltage output 0.3VDC to 10VDC 3'000 RPM to 100'000RPM  Output  Output  Output	Accessories only RSS/RSN-LTD-100(-G) S99					
- Different types of POF, on request Options  - RSx-LTD-100-GD \$158: Current loop output, 4mA to 20mA - RSS/N-LTD-100(-G) \$99: Socket M12: Lumberg RSF 5, 5 terminals (S99 only II 3G, without dust protection) - RSx-LTD-100(-GD) \$165: Cable type Ölflex 810CP, length on request  CE 0158  RSD: II 2G Ex d IIC T6, II 1/2D Ex tD A20/21 IP67 T90°C  RSD: Type test certificate: DEKRA EXAM. Number: DMT 99 ATEX E 056 RSN: II 3G Ex nA IIB T4, II 3D Ex tD A22 IP67 T140°C RSN S99: II 3G Ex nA IIB T4 RSN: Declaration by manufacturer: Tech. file no. AN-MAT-08-EX-E056 TA: 0°C < TA < +50°C Date of construction: Numeral 4 to 7 of the serial number  Output:  Voltage output 0.3VDC to 10VDC 3'000 RPM to 100'000RPM  - Different types of POF, on request - RSx-LTD-100(-GD) \$158: Current loop output, 4mA to 20mA - RSS/N-LTD-100(-GD) \$158: Current loop output, 4mA to 20mA - RSS/N-LTD-100(-GD) \$158: Current loop output, 4mA to 20mA - RSS/N-LTD-100(-GD) \$158: Current loop output, 4mA to 20mA - RSS/N-LTD-100(-GD) \$158: Current loop output, 4mA to 20mA - RSS/N-LTD-100(-GD) \$158: Current loop output, 4mA to 20mA - RSS/N-LTD-100(-GD) \$158: Current loop output, 4mA to 20mA - RSS/N-LTD-100(-GD) \$158: Current loop output, 4mA to 20mA - RSS/N-LTD-100(-GD) \$158: Current loop output, 4mA to 20mA - RSS/N-LTD-100(-GD) \$158: Current loop output by a the series of construction in the current series of current series o	, ,					
Options  - RSx-LTD-100-GD \$158: Current loop output, 4mA to 20mA - RSS/N-LTD-100(-G) \$99: Socket M12: Lumberg RSF 5, 5 terminals (S99 only II 3G, without dust protection) - RSx-LTD-100(-GD) \$165: Cable type Ölflex 810CP, length on request  CE 0158  RSD: II 2G Ex d IIC T6, II 1/2D Ex tD A20/21 IP67 T90°C  RSD: Type test certificate: DEKRA EXAM. Number: DMT 99 ATEX E 056 RSN: II 3G Ex nA IIB T4, II 3D Ex tD A22 IP67 T140°C RSN S99: II 3G Ex nA IIB T4 RSN: Declaration by manufacturer: Tech. file no. AN-MAT-08-EX-E056 TA: 0°C < TA < +50°C Date of construction: Numeral 4 to 7 of the serial number  Output:  Voltage output 0.3VDC to 10VDC 3'000 RPM to 100'000RPM  Output:  Out		tincluded	1 9 9 77 7			
- RSS/N-LTD-100(-G) \$99: Socket M12: Lumberg RSF 5, 5 terminals (S99 only II 3G, without dust protection) - RSx-LTD-100(-GD) \$165: Cable type Ölflex 810CP, length on request  CE 0158 Manufacturer with address RSD: II 2G Ex d IIC T6, II 1/2D Ex tD A20/21 IP67 T90°C  RSD: Type test certificate: DEKRA EXAM. Number: DMT 99 ATEX E 056 RSN: II 3G Ex nA IIB T4, II 3D Ex tD A22 IP67 T140°C RSN S99: II 3G Ex nA IIB T4 RSN: Declaration by manufacturer: Tech. file no. AN-MAT-08-EX-E056 TA: 0°C < TA < +50°C Electrical data according to the chard Date of construction: Numeral 4 to 7 of the serial number  Output:  Voltage output 0.3VDC to 10VDC 3'000 RPM to 100'000RPM  Output:  Outpu						
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RSD: II 2G Ex d IIC T6, II 1/2D Ex tD A20/21 IP67 T90°C  RSD: Type test certificate: DEKRA EXAM. Number: DMT 99 ATEX E 056  RSN: II 3G Ex nA IIB T4, II 3D Ex tD A22 IP67 T140°C  RSN S99: II 3G Ex nA IIB T4  RSN: Declaration by manufacturer: Tech. file no. AN-MAT-08-EX-E056  TA: 0°C < TA < +50°C Electrical data according to the char Date of construction: Numeral 4 to 7 of the serial number  Output:  Voltage output 0.3VDC to 10VDC 3'000 RPM to 100'000RPM  Output:  Outp	ATEX related designations		CE 0158 Manufacturer with address			
RSD: Type test certificate: DEKRA EXAM. Number: DMT 99 ATEX E 056 RSN: II 3G Ex nA IIB T4, II 3D Ex tD A22 IP67 T140°C RSN S99: II 3G Ex nA IIB T4 RSN: Declaration by manufacturer: Tech. file no. AN-MAT-08-EX-E056 TA: 0°C < TA < +50°C Electrical data according to the char Date of construction: Numeral 4 to 7 of the serial number  Output: Voltage output 0.3VDC to 10VDC 3'000 RPM to 100'000RPM  Output: Ou			100.1120 Ex a 110 10, 11 1/20 Ex 10 A20/21 11 07 130 0			
RSN S99: II 3G Ex nA IIB T4 RSN: Declaration by manufacturer: Tech. file no. AN-MAT-08-EX-E056 TA: 0°C < TA < +50°C Electrical data according to the char Date of construction: Numeral 4 to 7 of the serial number  Output: Voltage output 0.3VDC to 10VDC 3'000 RPM to 100'000RPM  Output:  Outp			RSD: Type test certificat			
RSN S99: II 3G Ex nA IIB T4 RSN: Declaration by manufacturer: Tech. file no. AN-MAT-08-EX-E056 TA: 0°C < TA < +50°C Electrical data according to the char Date of construction: Numeral 4 to 7 of the serial number  Output: Voltage output 0.3VDC to 10VDC 3'000 RPM to 100'000RPM  Output:  Outp			RSN: II 3G Ex nA IIB T4,	RSN: II 3G Ex nA IIB T4, II 3D Ex tD A22 IP67 T140°C		
TA: 0°C < TA < +50°C Electrical data according to the char Date of construction: Numeral 4 to 7 of the serial number  Output: Voltage output 0.3VDC to 10VDC 3'000 RPM to 100'000RPM  Output  Output  Output  Output  Output  Output  Output						
Output:  Voltage output 0.3VDC to 10VDC 3'000 RPM to 100'000RPM  Output  PNP  R 25\Omega Out 0-10VDC  Output			RSN: Declaration by ma	nufacturer: Tech. file	no. AN-MAT-08-EX-E056	
Output:  Voltage output 0.3VDC to 10VDC 3'000 RPM to 100'000RPM  Output  PNP  R 25\Omega Out 0-10VDC  Output			TA: 0°C < TA < +50°C	Electrical of	data according to the chart	
Voltage output 0.3VDC to 10VDC 3'000 RPM to 100'000RPM  PNP  R25Ω  Out 0-10VDC  Output			Date of construction: Numeral 4 to 7 of the serial number			
Voltage output 0.3VDC to 10VDC 3'000 RPM to 100'000RPM  PNP  R25Ω  Out 0-10VDC  Output	Output:			+:	2028VDC	
3'000 RPM to 100'000RPM  R25Ω Out 0-10VDC  Output	Voltage output 0.3VDC to 10VDC			PND		
Output				I \ /		
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Output diagram:			_	<u> </u>	V	
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RSx-LTD-100\_e5/2009-09-03/HB



Note 1: Equal to 3'000 RPM to 100'000RPM, at a marking disc with 4 sections.



# Operating Manual / EC - Declaration of Conformity:

#### **Operating Manual:** Ex protection:

#### General prescriptions for all Ex devices:

It is necessary to take into consideration the valid international and national rules and regulations (EN 60079-14). The maximum input voltage Um=30VDC must not be exceeded. The local equipotential bonding have to be done. The protective earth (PE) terminal is solid connected with the housing. The cable have to be protected against damages. To connect cables inside hazardous locations only use certificated Ex e housings. All cable terminals must be connected outside hazardous locations. Use only original manufactured fibre optics and additional optical lenses, other additional optical lenses are not allowed in hazardous locations.

Type: RSD-LTD-100-GD: Applicable in Exzones 1, 2 and 20/21, 22. For the zones 20/21 only the front part (optical lens) can be mounted inside the zone 20. The rear part with the cable must be in the zone 21.

Type: RSN-LTD-100-GD: Only applicable in Ex zones 2 and 22. Type: RSN-LTD-100-G S99: Only applicable in Exzone 2. Do not separate the connector when the supply voltage is connected to the cable. When installing the sensor, the safety lock device must be fitted at the cable connector. The additional adhesive warning label must be fixed to the connector housing at the connection cable. Lumberg cordsets RKTS 5-298/xx (Straight type) RKTW/ RKWTH 5-298/xx (Right angle type) are allowed ONLY. It is necessary to take into consideration the mounting prescription of the connector manufacturer.

## General mounting prescriptions:

Do not exceed the maximum ratings. The electrical connections must be exactly as shown in the connection diagram. The cable shield must be connected short. The cable shield should be connected to the protection earth, large-surfaced. Connection cables - EMC: 89/336/EWG, 91/263/EWG, 92/31/EWG, 93/68/EWG must not be installed parallel to high voltage cables.

## **Function:**

The sensor can only be used with connected fibre optics. Laser light reflection alterations, generated by the marking disc of the spraying apparatus, with 4 sections, will be converted to an analog voltage signal. The operating range is 3'000RPM tom 100'000RPM. Lower speed then 3'000 RPM results to 0VDC output signal. Higher speed then 100'000RPM results to 10VDC output in accordance with local waste disposal regulations. signal.

# Using the fibre optics

The sensor RSx-LTD must not go into operation without mounted fibre optics. The fibre optics must be handled careful. For cutting the fibre optics the special cutter or a professional tool is to use. Do not use optical fibres longer then 5m. The functional safety of the sensor is given by the condition of the marking disc and the careful working up of the optical fibres. The fibre optics must not be buckled or laid with a small radius. Buckled or bad laid fibre optics results to a strong decrease of performance. Avoid performance decreasing and failures caused by wear, by a functional mounting of the fibre optics.

# Maintenance

Protect the fibre optic adaptor of the sensor and the optical fibres

against pollution. If the fibre optic adapter is contaminated, clean with alcohol. Do not use aggressive solvents. Plastic optical fibres can be destroyed by strong solvents. Equipment must only be repaired or serviced by the manufacturer.

#### Safety regulations for Laser devices

The sensors types RSx-LTD must not go into operation without mounted fibre optics. Without mounted fibre optics the laser power can increase class 2. By the installation, the going into operation and the application, it is necessary to take into consideration the valid rule EN 60825 (Parts 12.5.1/12.6.2). Warning! Without mounted fibre optics the optical power reach Laser Class 2. Do not stare into the beam! With mounted fibre optics no safety measures are needed.

# **General safety instructions**

The dismounting of the connector safety lock device while the supply voltage is connected is hazardous! The sensors must not be used for Accident-Prevention! In worst case the output can change to any state! When installing and operating with the sensor, it is necessary to take into consideration the relevant international and other national regulations. ATEX 118a, ElexV, TRbF, TRD, UVV, EX-RL(BGR104), BetrSichV(ATEX137), Single directive 1999/92/EG

Standards met:

- EN 60079-0:2004, EN 60079-1:2004, EN 60079-28:2007, EN 60241-0:2004, EN 61241-1:2004; EN 60529:2000, EN 60950-1:2006; EN 60825-1, EN 60825-2; EN 61000-4-2 to EN 61000-4-6, EN 61000-6-1/-2, EN 61000-6-4;
- Ex-Protection: 94/9/EC (ATEX 100a)
- Machine Directive: 98/37/EC
- -RoHS: 2002/95/EC
- Low Voltage Directive: 73/23/EWG, 93/68/EWG
- Tech File No: AN-MAT-08-EX-E056

## **General Notes**

We reserve the right to modify our equipment. Our equipment is designed such way, that it has the least possible adverse effect on the environment. It neither emit or contain any damaging or siliconized substances and use a minimum of energy and resources. No longer usable or irreparable units must be disposed of

# **Declaration of CE Conformity**

Certification, series RSD-..: DMT 99 ATEX E 056 Certification, series RSN-..: Declaration of conformity by manufacturer at 94/9/EC. Tech File No: AN-MAT-08-EX-E056. ATEX certification of quality type production of Ex devices at the

directive 94/9/EC Certification No: BVS 03 ATEX ZQS / E118 The conformity of the devices with the EC standards and directives and the EC-type examination certificate and the observation of the Quality Safety System ISO 9001:2008 with the ATEX module "Production", declares:

Hans Bracher, Matrix Elektronik AG

(Manufacturer) Fax -29 Matrix Elektronik AG (Manufactu Kirchweg 24 CH-5420 Ehrendingen Elektronik

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