

Technical Data - SALT Repeater (101-201710)

Technical Data - Alternative Cable Repeater (101-201710)	
Backplane	
PROFIBUS networks Modules Power supply Current consumption Compatible backplane units	4 (set by dipswitches or web server) 10 (positioned in the first 10 slots) Provided through the backplane ± 400 mA (555 mA max) 101-200011, 101-200012, 101-200023, 101-200024, 101-200027
Protocol specifications	
Supported Protocols	DP-V0, DP- V1, DP-V2, FDL, MPI, FMS, PROFIsafe, PROFIdrive and any other FDL based protocol
Address	NO bus address required
Transmission speed	9.6 kbps .. 12 Mbps (including 45.45 kbps)
Transmission speed detection	Auto detect (< 10 s detection and 50 s lost time)
Data delay time (normal mode)	2.0 TBit at 9.6 kbps .. 3 Mbps 2.75 TBit at 6 Mbps 3.75 TBit at 12 Mbps
Data delay time (redundant mode)	12.0 TBit at 9.6 kbps .. 3 Mbps 12.75 TBit at 6 Mbps 13.75 TBit at 12 Mbps
Delay time jitter	Max. ¼ TBit
Oscilloscope specifications	
Frequency	192 MS/s
Resolution	50 mV
Differential range	-6.436 .. 6.436 V
Cable specifications	
Cable lengths	Depends on the cable type used
Wire diameter (for the screw terminals)	< 2.5 mm ²
Wire type	Stranded or solid core
Number of devices	Maximum 31 devices per channel (busloads)
Cascading depth	No limit, only busparameter limitation of the master
Redundancy	Yes, maximum 10 cables activated by switch

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Termination	
Termination range (MIDDLE) Idle voltage range (PULL-UP)	94 .. 940 Ohm (DC) 57 .. 1500 Ohm (AC) 0 .. 5 V
Dipswitches	
<u>NW0</u> <u>NW1</u> LEFT LEFT RIGHT LEFT LEFT RIGHT RIGHT RIGHT <u>RED</u> LEFT / RIGHT <u>H/S</u> LEFT / RIGHT	<div> <div> PROFIBUS Network 1 2 3 4 Redundancy OFF / ON Settings Hardware / Software </div> </div>
PROFIBUS connectors	
<u>CH1</u> A, B SH I	<u>Screw terminals</u> Green wire, Red wire Direct grounding Indirect grounding
LEDs	
RDY RX HWE ER MIN TERM	Module is ready for operation (ON) Receiving telegrams (blinking) Internal repeater error (contact PROCEN ^{TEC}) No or bad telegrams detected Signal amplitude of the telegrams too low (< 2.5 V) Idle voltage too low (<0.5 V .. >1.7 V) <i>Alarm values can be changed through the web server.</i>
Others	
Head Station firmware Operating temperature Weight MTBF	At least version 1.264 0 .. 60 °C 120 g To be defined
PROCEN^{TEC} Klopperman 16 2292 JD WATERINGEN (NL)	Tel.: +31-174-671800 Fax: +31-174-671801 Email: info@procentec.com

Table 1 - Impedance value

	Pull-Up 0	Pull-Up 1	Pull-Up 2	Pull-Up 3	Pull-Up 4	Pull-Up 5	Pull-Up 6	Pull-Up 7	Pull-Up 8	Pull-Up 9	Pull-Up A	Pull-Up B	Pull-Up C	Pull-Up D	Pull-Up E	Pull-Up F
Middle 0	OPEN	1500	1200	667	560	408	382	304	270	229	220	192	182	162	158	143
Middle 1	940	578	527	390	351	284	272	230	210	184	179	160	153	139	135	124
Middle 2	780	513	473	359	326	268	256	219	201	177	172	154	148	134	131	121
Middle 3	426	332	315	260	242	208	201	178	165	149	145	132	128	118	115	107
Middle 4	360	290	277	234	219	191	185	165	154	140	137	125	121	112	110	102
Middle 5	260	222	214	187	178	159	155	140	133	122	119	111	107	100	98	92
Middle 6	246	212	204	180	171	154	150	136	129	119	116	108	105	98	96	91
Middle 7	195	173	168	151	145	132	129	119	113	105	104	97	94	89	87	83
Middle 8	182	162	158	143	137	126	123	114	109	101	100	93	91	86	85	80
Middle 9	152	138	135	124	120	111	109	102	97	92	90	85	83	79	78	74
Middle A	148	134	131	121	117	108	106	99	95	90	88	83	82	77	76	73
Middle B	128	118	115	107	104	97	96	90	87	82	81	77	75	71	71	67
Middle C	121	112	110	102	99	93	92	87	84	79	78	74	73	69	69	66
Middle D	107	100	98	92	90	85	84	79	77	73	72	69	67	65	64	61
Middle E	105	98	96	90	88	83	82	78	75	72	71	68	66	64	63	60
Middle F	94	89	87	83	81	77	76	72	70	67	66	63	62	60	59	57

Remarks:

- Example - Standard PROFIBUS cable: Pull-Up 6 and Middle 6 (150 Ohm and 1.22 V)
- Termination without power: Pull-Up 0
- No termination: Pull-Up 0 and Middle 0
- Software can be downloaded from our website to assist with defining the proper rotary positions

Table 2 - Idle voltage

	Pull-Up 0	Pull-Up 1	Pull-Up 2	Pull-Up 3	Pull-Up 4	Pull-Up 5	Pull-Up 6	Pull-Up 7	Pull-Up 8	Pull-Up 9	Pull-Up A	Pull-Up B	Pull-Up C	Pull-Up D	Pull-Up E	Pull-Up F
Middle 0	OPEN	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
Middle 1	0.00	1.19	1.41	2.07	2.28	2.68	2.76	3.03	3.18	3.36	3.40	3.55	3.60	3.72	3.74	3.83
Middle 2	0.00	1.03	1.23	1.85	2.05	2.44	2.53	2.81	2.95	3.15	3.19	3.35	3.41	3.53	3.56	3.66
Middle 3	0.00	0.62	0.75	1.21	1.38	1.72	1.79	2.06	2.21	2.41	2.46	2.63	2.70	2.84	2.87	2.99
Middle 4	0.00	0.54	0.65	1.06	1.22	1.53	1.60	1.86	2.00	2.20	2.25	2.42	2.49	2.63	2.66	2.79
Middle 5	0.00	0.40	0.49	0.82	0.94	1.21	1.27	1.50	1.63	1.81	1.86	2.02	2.08	2.22	2.26	2.38
Middle 6	0.00	0.38	0.47	0.78	0.90	1.16	1.22	1.44	1.57	1.75	1.79	1.95	2.02	2.16	2.19	2.31
Middle 7	0.00	0.31	0.38	0.64	0.74	0.97	1.02	1.21	1.33	1.49	1.53	1.68	1.74	1.88	1.91	2.03
Middle 8	0.00	0.29	0.35	0.60	0.70	0.91	0.96	1.15	1.26	1.42	1.46	1.61	1.67	1.80	1.83	1.94
Middle 9	0.00	0.24	0.30	0.51	0.60	0.79	0.83	1.00	1.10	1.25	1.29	1.42	1.48	1.60	1.63	1.74
Middle A	0.00	0.23	0.29	0.50	0.58	0.77	0.81	0.98	1.07	1.22	1.25	1.39	1.44	1.56	1.59	1.70
Middle B	0.00	0.20	0.25	0.44	0.51	0.68	0.72	0.87	0.96	1.09	1.12	1.25	1.30	1.41	1.44	1.54
Middle C	0.00	0.19	0.24	0.42	0.49	0.65	0.68	0.83	0.91	1.04	1.08	1.20	1.25	1.36	1.38	1.48
Middle D	0.00	0.17	0.21	0.37	0.44	0.58	0.62	0.75	0.83	0.95	0.98	1.09	1.14	1.24	1.26	1.36
Middle E	0.00	0.17	0.21	0.36	0.43	0.57	0.60	0.73	0.81	0.93	0.96	1.07	1.12	1.22	1.24	1.34
Middle F	0.00	0.15	0.19	0.33	0.39	0.52	0.55	0.67	0.74	0.85	0.88	0.98	1.03	1.12	1.15	1.24

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