email: sales@impulseautomation.co.uk
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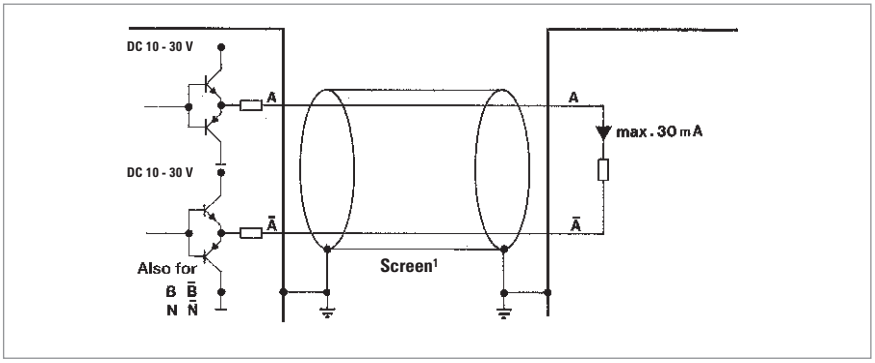
Basics of Incremental Encoders

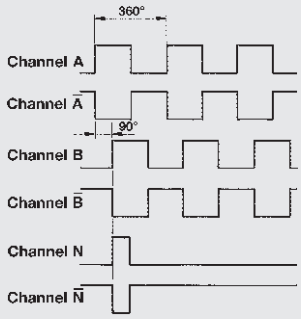
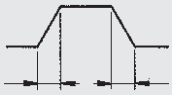
Outputs - Push-pull complementary

OUTPUT CIRCUIT



¹ cable screen connected with encoder housing

TECHNICAL DATA

Code letter	I = push-pull complementary (with U_B = DC 10 - 30 V)
Output signals shaft turning clockwise (cw) seen from front of encoder	 Square wave pulses (HTL) for channels A, B, N and their inverted signals $\overline{A}$, $\overline{B}$, $\overline{N}$
Delay times at 1,5 m cable	 ≤ 250 ns ≤ 250 ns
Pulse shape	
Pulse duty factor	1:1
Phasing	90° ±25° electrical
Symmetry	180° ±25° electrical
Nax. output frequency	200 kHz (see cable length)
Output voltage	0 ... + U_B
Output level	H ≥ U_B -3 V / L ≤ 2 V
Output load max.	±30 mA
Short circuit protection	short circuit proof for all channels due to integrated controller
Pole protection of U_B	yes

¹ Distance from A to B is at least 0,7 µs (at 200 kHz)

CABLE LENGTH

depending on voltage and fequency (at 25 °C) ¹:	
Length	push-pull complementary
10 m	DC 12 V, 200 kHz
	DC 24 V, 200 kHz
	DC 30 V, 200 kHz
50 m	DC 12 V, 200 kHz
	DC 24 V, 50 kHz
	DC 30 V, 25 kHz
100 m	DC 12 V, 150 kHz
	DC 24 V, 25 kHz
	DC 30 V, 12 kHz

¹ with Hengstler accessory cables