Panel cut-out dimensions

Housing type	Panel cut-out			Permissible deviation
NIQ3-072	square:	67.5 mm	x 67.5 mm	+ 0.5 mm
NIQ3-096	square:	91.5 mm	x 91.5 mm	+ 0.8 mm
NIQ3-144	square:	137.5 mm	x 137.5 mm	+ 1.0 mm
NIR3-060	round:	diameter	60.5 mm	+ 0.5 mm
NIR3-080	round:	diameter	80.5 mm	+ 0.5 mm
NIR3-100	round:	diameter	100.5 mm	+ 0.5 mm
NIR3-130	round:	diameter	130.5 mm	+ 0.5 mm

Pin-out for the backside connector plug

Pin no.	Description
1	Positive supply voltage
2	Negative supply voltage
3	Illumination control input 1 (either polarity)
4	Illumination control input 2 (either polarity)
5	Positiv Error LED
6	Negative Error LED
7	Positive signal input
8	Negative signal input
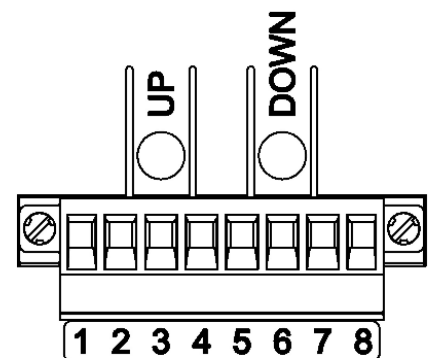
rear view

Pushbutton operations

Two pushbuttons at the rear of the instrument are used to set various parameters. The adjustment direction for the buttons is stamped into the housing. The left button (as viewed from the front) is marked "DOWN", the right button is marked "UP". These buttons can be pressed briefly (to adjust by a single increment) or long (continuous adjustment). The instrument's illumination will begin to flash on and off to alert the user that the given adjustment limit has been reached. With these keys the lighting brightness can be put standardly. The factory setting for the brightness is put at maximum. This can be changed with "UP" or "DOWN".

Technical data

Electr. connections	
Supply voltage	18 V…36 V DC at 1.7 W max power consumption; other voltages on request.
Analog input signals	0…10 V_{DC}, 2...10 V_{DC} Ri = 29 KOhm; 0…20 mA_{DC}, 4…20 mA_{DC} Ri = 121 Ohm
Illumination regulation input	Ri about 17 KOhm; for conventional 24 V PWM dimmer (positive or negative regulator) or 0…24 V_{DC} (this input is not polarity sensitive).
Accuracy	
Accuracy class	Better than 0.5 % with respect to full scale value per EN60051 and IEC51-1
Measured signal resolution	10 bit
Stepper motor resolution	twelve motor steps per angle degree
Gear backlash	typical 0.3 degree; static and dynamic gear backlash correction via software
Ambient influences	
EMC	Fulfils all requirements of the railway standard (EN 50155)
Vibration and shock	vibration stability up to 4 g, shock resistant up to 5g at 30ms and up to 10 g at 18 ms
Ingress protection	at the housing front, IP66 and IP67 per DIN EN60529
Moisture	≤ 95 % relative humidity at 55 °C per IEC60068-2-30
Insulation voltage	1000 V DC between all electrical inputs and outputs
Fire safety class	UL94: V0
Operating temperature	-25 °C to +70 °C per IEC60068-2-1/2
Storage temperature	-40 °C to +70 °C
Approvals & classes	Applied standards: DIN EN50121-3.1;DIN EN50121-3.2; EN 50155, DIN EN61373, DIN EN 61010-1, EN 45545
Mechanical quantities	
Motor torque	static: 4 mNm; dynamic 1.2 mNm
Orientation	any
Fixation	fastening screws with dovetail key and hand knob (tool-less)
Connection	8 pole flat connector plug with screw lock
Housing material	fibre glass reinforced, UV stabilised plastic; upper part: PC GF10; base plate: PC GF30 faceplate made of non-reflective float glass
Dimensions and weights	square: 72 mm, 96 mm, 144 mm frame size. round: 60 mm, 80 mm, 100 mm, 130 mm tubular diameter. Installed depth (all models incl. connector plug): about 80 mm Weights round: 60mm = 145g, 80mm = 185g, 100mm = 245g, 130mm = 375g Weights square: 72mm = 170g, 96mm = 250g, 144mm = 510g
Other	
Illumination	externally dimmable LED illumination; PWM frequency = 70 Hz
Initialisation time	about 5 seconds after switch on of supply voltage
Minimum switch on period	2 min, to store altered basic brightness permanently. 3 min, to move the pointer from any position to the zero position, if power is switching off.
Scale angle	with pointer, any up to a maximum of 300° (standard 240°) or 360° with pointer disk
Operation	two rear-side pushbuttons for setting lightning brightness (see text above)