Technical Information — IQAN-LL/LM I/O Modules

Environmental Protection

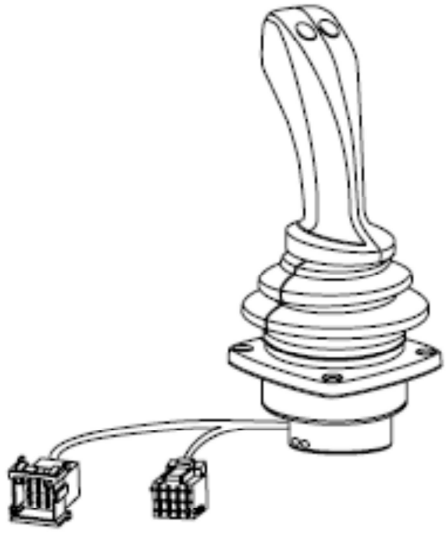
EMI
EN 55022:1994 (conducted emission)
EN 55022:1994 (radiated emission)
ISO 11452-2:1995 (immunity vs EM field)
ISO 11452-4:1995 (immunity vs injected RF)
ISO 7637-2:1990 (immunity vs supply transients)
ISO 7637-3:1995 (immunity vs supply transients)
EN 61000-4-8:1993 (immunity vs magnetic field)

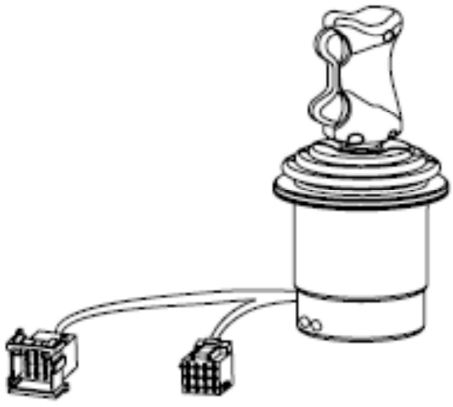
ESD
ISO 10605:2001 (ESD)

Mechanical environment
IEC 68-2-64:1993 Fh (random)
IEC 68-2-29:1987 Eb (bump)

Climate environment
IEC 68-2-18:2000 Rb3 (water)
IEC 68-2-30:1985 Db (var1, damp, cyclic)
IEC 68-2-3:1969 Ca (damp, heat steady state)
IEC 68-2-2:1993-01 Bb (heat)
IEC 68-2-1:1993-02 Ab (cold)
IEC 68-2-14:1984 Nb (change of temperature)

Chemical environment
IEC 68-2-52:1996 Kb (salt mist)





IQAN-LL/LM I/O Modules

Application

IQAN-LM

The IQAN-LM is especially suitable for continous duty machine operations such as in forestry and construction work. The combination of a mini lever and armrest provide substantial ergonomic benefits.

IQAN-LL

The IQAN-LL is designed for rough handling. The ergonomic design gives good support to the arms and wrists and assures a comfortable grip from several angles. The design allows operators to quickly become familiar with the lever.

Design and function

Both levers are designed for in-cab use. The wide operating voltage range allows for connection to both 12 VDC and 24 VDC systems. All inputs and outputs are protected against short circuit to ground and to main power supply.

The IQAN levers are connected to other modules through a CAN bus which makes data exchange more efficient, simplifies installation and increases noise immunity.

A number of different handle types are available. LED indicators show supply voltage and internal operation.

The lever units are lightweight with small installation dimensions and have low, well-adapted actuating forces.

All proportional inputs are of contactless inductive type with neutral position sensors to provide high safety and reliability.

General

Weight	LM 0,4 Kg LL 0,9 Kg
Rated power supply	12 – 24 VDC
Min/max power	9 / 32 VDC
Operating temperature	-30 to +70°C
Protection	in-cab use IP65 (type LM-2A) IP44 (all others)
Current consumption (idle)	57 mA (28 VDC), 46 mA (14 VDC)
Data interface	Parker ICP (IQAN CAN Protocol)

Axis sensors

Number	max 3 pcs, inductive
Resolution	9 bit

Neutral position detection

Signal	IR-sensor, on/off

Digital inputs

Number	10 pcs, 4 internal, 6 external (may differ according to application/handle)
Signal range	0 – 5 VDC 0 – V_{BAT}
Active range	"0" = 0,0 – 1,0 VDC, "1" = 2,0 – V_{BAT}

Analog inputs

Number	2 pcs
Signal range	0 – 5 VDC 0 – V_{BAT}
Active range	0,5 – 4,5 VDC
Resolution	5 mV

Digital outputs[1]

Number	1 pc
Signal	200 mA

1) One digital input and the digital output share the same physical pin. By configuring the channels with IQAN software, the user defines the pin as input or output.

Ordering part number

IQAN-LL-2E2	20005956
IQAN-LL-2N0	20005957
IQAN-LL-2N2	20005958
IQAN-LL-2N2T	20005959
IQAN-LL-2N4	20005960
IQAN-LL-2U	20005961
IQAN-LL-3G	20005956
IQAN-LM-2A	20005963
IQAN-LM-3D	20005964

IQAN-LL/LM I/O Modules

Order code

IQAN-LM

Example IQAN-LM-3D

Unit type code
Number of axis
Handle type

Unit type code:	product description LM - lever mini
Number of axis:	2 - X, Y 3 - X, Y, Z
Handle type:	
A straight stick	diameter 15 mm
D ergonomic shape handle	prop. rocker for Z axis

IQAN-LL

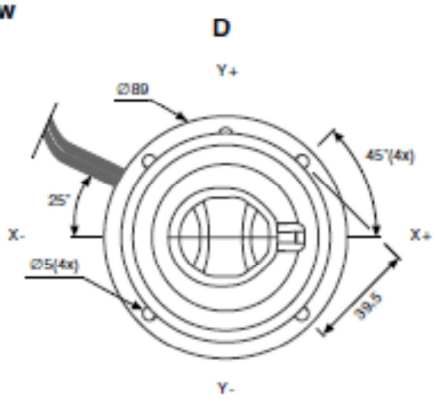
Example IQAN-LL-2N2T

Unit type code
Number of axis
Handle type

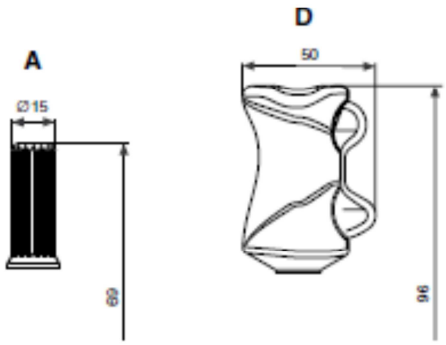
Unit type code:	product description LL - lever large
Number of axis:	2 - X, Y 3 - X, Y, Z
Handle type:	
E2 straight handle	(on)-off-(on) rocker
G mushroom shape handle	prop. rocker for Z axis
U stem	without handle
N0 banana-shape handle	no buttons
N2 banana-shape handle	2 buttons
N2T banana-shape handle	2 buttons + trigger
N4 banana-shape handle	4 buttons

IQAN-LM

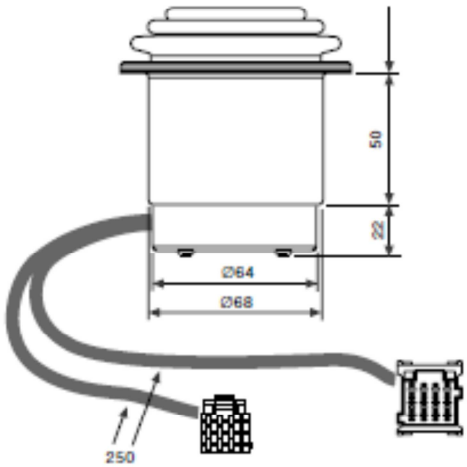
Top view



Handle types



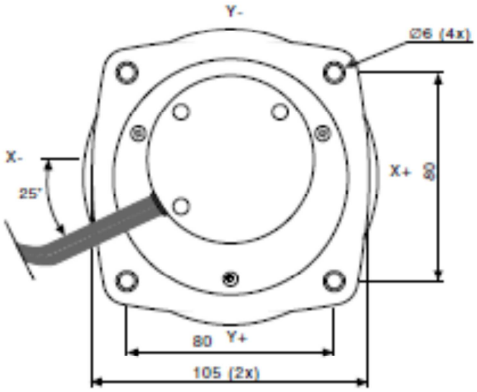
Base unit



Technical Information IQAN-LL/LM I/O Modules

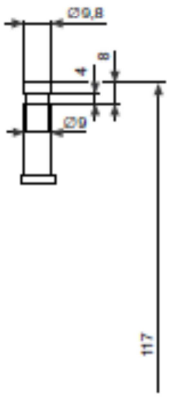
IQAN-LL

Bottom view

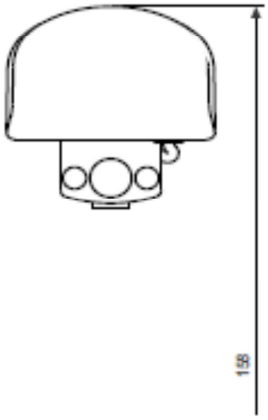


Handle types

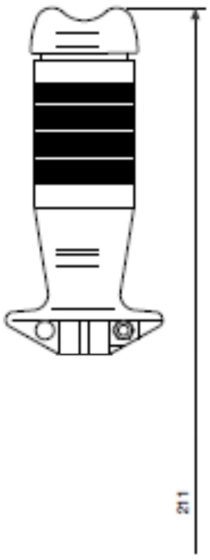
U



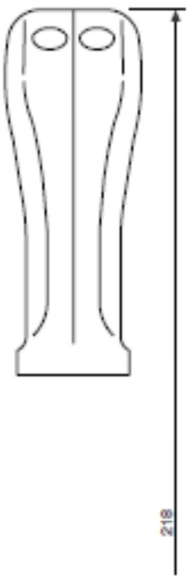
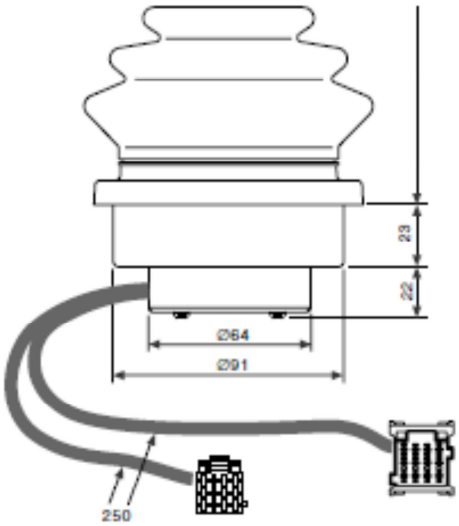
G



E2



N2 (N0, N2T, N4)



Base unit