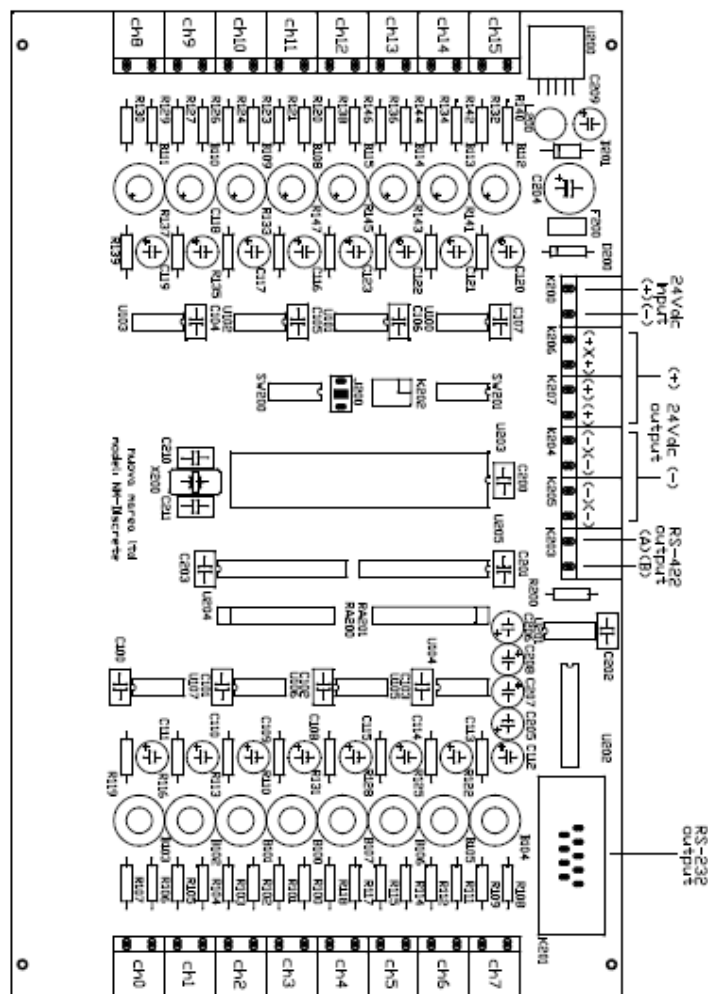


ANALOG/DIGITAL INTERFACE UNIT

The ANALOG/DIGITAL interface consists of 16 discrete and 8 analog inputs.
A custom NMEA sentence is produced for each channel.

The ANALOG/DIGITAL interface designed as a part of the NM Version of NaviConning for the connection of BOW THRUSTER ORDER, STERN THRUSTER ORDER NAVIGATION LIGHTS, PORT ENGINE ALARM, STBD ENGINE ALARM, DIGITAL DISCRETE INPUTS, FLAPS ETC

A. DISCRETE INPUTS



INPUT CHANNEL	INPUT DESCRIPTION		OUTPUT
CH0	BOW THRUSTER	STBD ORDER	\$NMDCA,0,xx*hh
CH1		PORT ORDER	
CH2	NAVIGATION LIGHTS	RED	\$NMDCA,2,xx*hh
CH3		GREEN	\$NMDCA,3,xx*hh
CH4		STERN LIGHT	\$NMDCA,4,xx*hh
CH5		TOP LIGHT	\$NMDCA,5,xx*hh
CH6		ANCHOR TOP	\$NMDCA,6,xx*hh
CH7		ANCHOR	\$NMDCA,7,xx*hh

INPUT CHANNEL	INPUT DESCRIPTION		OUTPUT
CH8	STERN THRUSTER	STBD ORDER	\$NMDCB,0,xx*hh
CH9		PORT ORDER	
CH10	PORT ENGINE	ALARM	\$NMALR,2,text*hh
CH11	STBD ENGINE	ALARM	\$NMALR,3,text*hh
CH12	SPARE		\$NMDCB,4,xx*hh
CH13	SPARE		\$NMDCB,5,xx*hh
CH14	SPARE		\$NMDCB,6,xx*hh
CH15	SPARE		\$NMDCB,7,xx*hh

Rs422 Data Output (Digital Out Port)

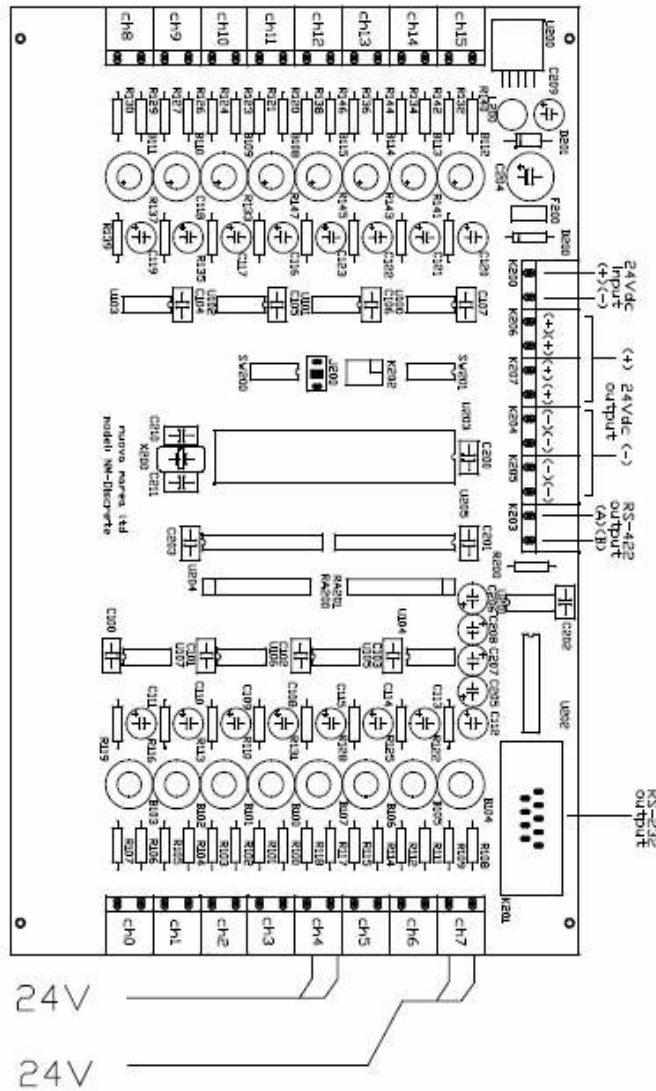
INPUT CHANNEL	NMEA OUTPUT	REF	VALUE	CHKSUM
CH0 CH1	\$NMDCA,0,xx*hh	0	-9 ~ 9	YES
CH2	\$NMDCA,2,xx*hh	2	0 or 1	YES
CH3	\$NMDCA,3,xx*hh	3	0 or 1	YES
CH4	\$NMDCA,4,xx*hh	4	0 or 1	YES
CH5	\$NMDCA,5,xx*hh	5	0 or 1	YES
CH6	\$NMDCA,6,xx*hh	6	0 or 1	YES
CH7	\$NMDCA,7,xx*hh	7	0 or 1	YES
CH8 CH9	\$NMDCB,0,xx*hh	0	-9 ~ 9	YES
CH10	\$NMALR,2,text*hh	2	Text	YES
CH11	\$NMALR,3,text*hh	3	Text	YES
CH12	\$NMDCB,4,xx*hh	4	0 or 1	YES
CH13	\$NMDCB,5,xx*hh	5	0 or 1	YES
CH14	\$NMDCB,6,xx*hh	6	0 or 1	YES
CH15	\$NMDCB,7,xx*hh	7	0 or 1	YES

CONNECTION OF DISCRETE SIGNALS

AC/DC SIGNAL

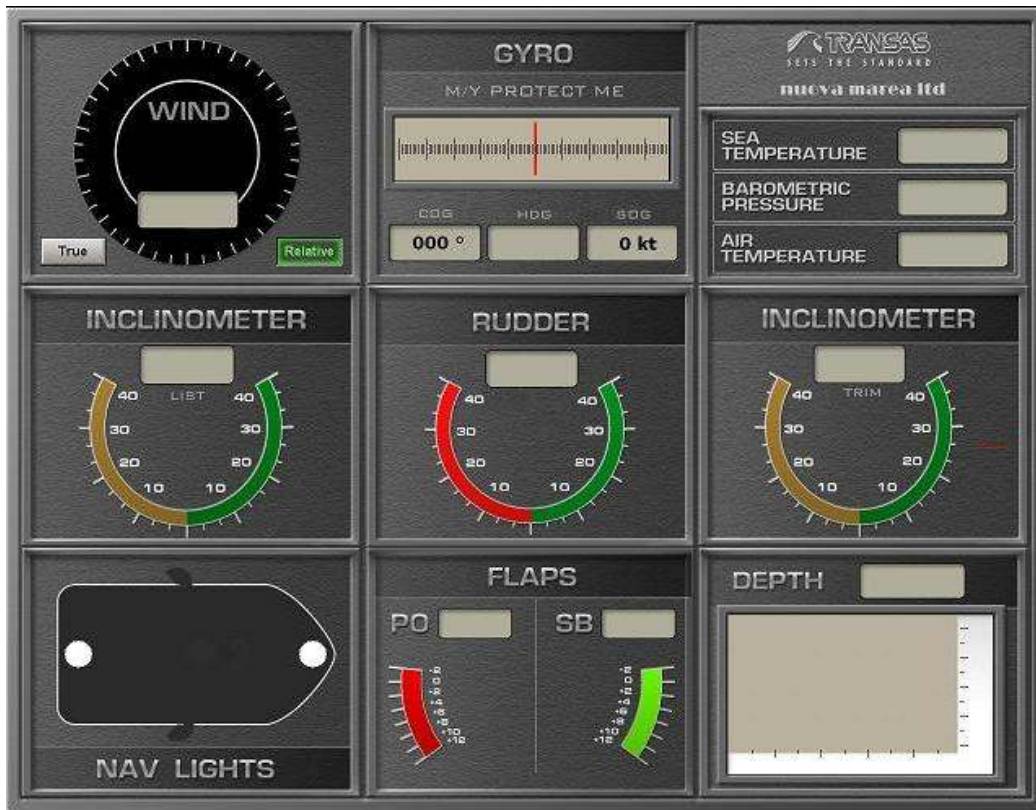
The Discrete PCB accepts any signal with voltage from 8Volt to 60Volt
Input is polarity independent.

Typical application



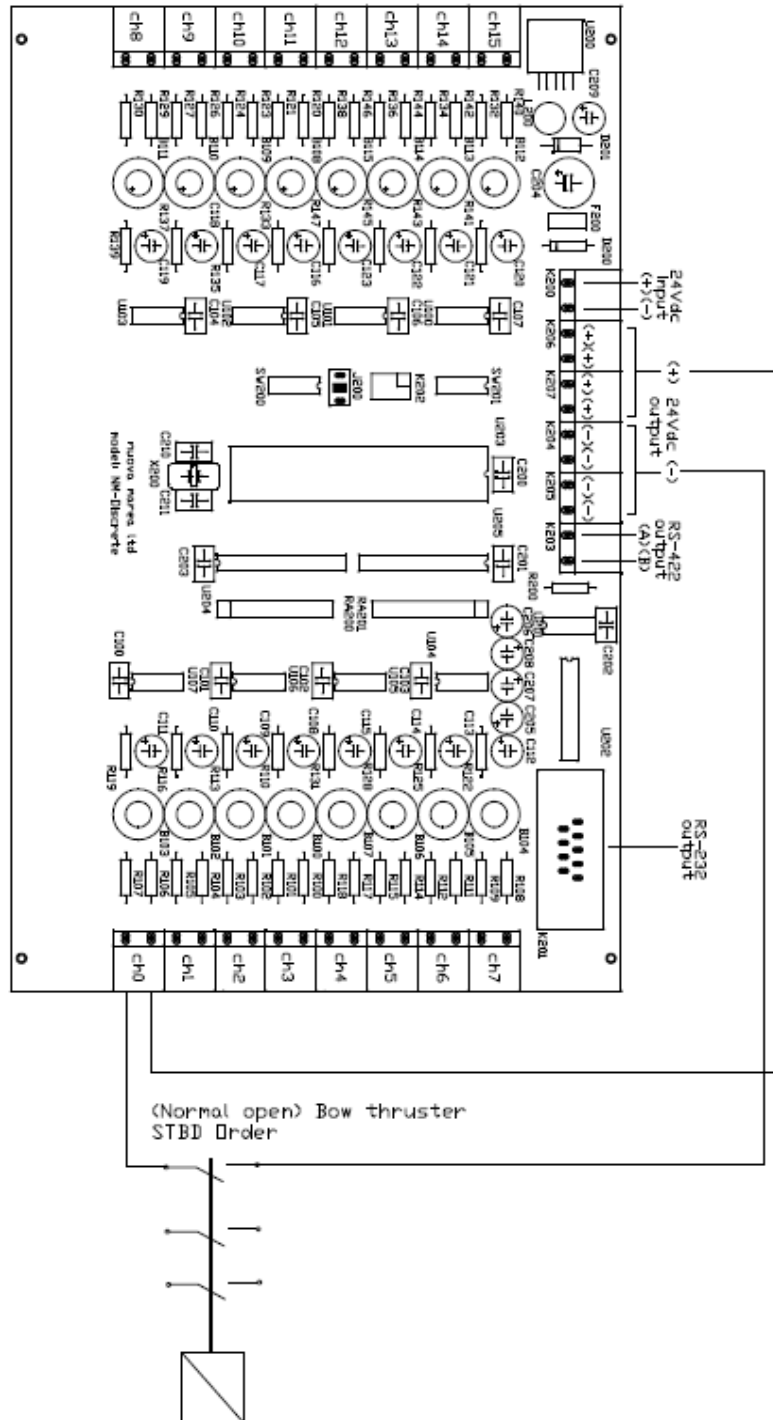
Connect CH4 in parallel with STERN Light (from Navigation lights PCB) and CH7 in parallel with ANCHOR light
When these lights are ON the PCB transmits the STATUS to the NaviConning software

The NaviConning indicates

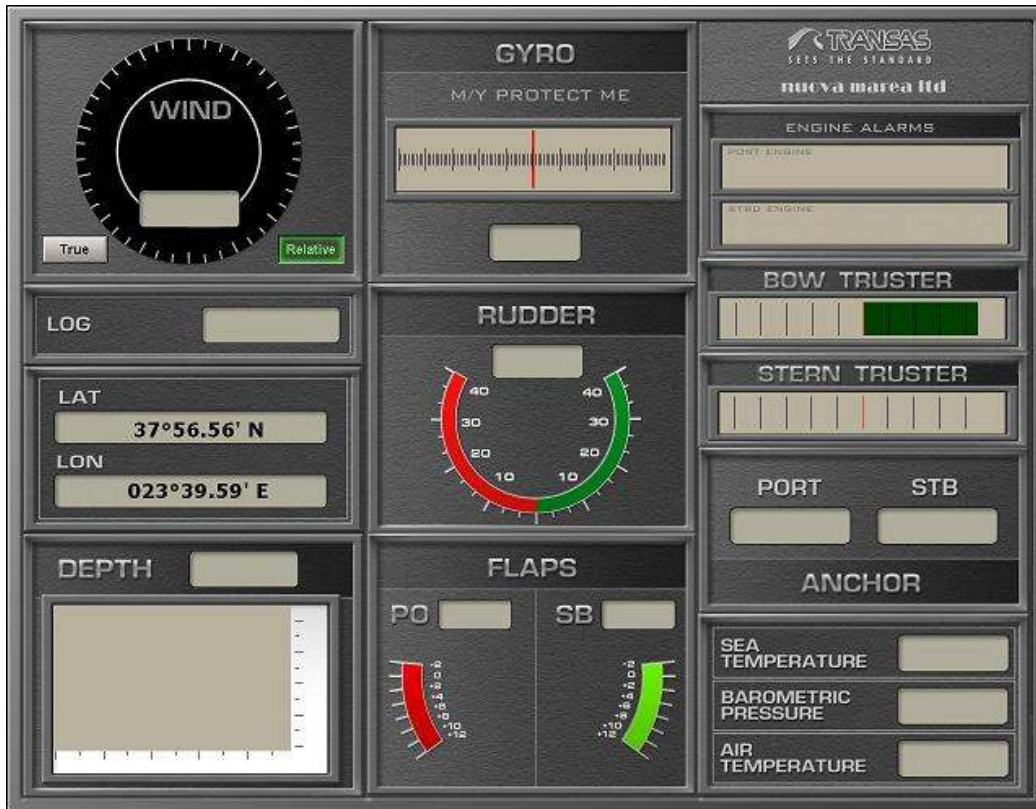


Dry contact connection

Alternatively a dry contact can be connected as per following example



The NaviConning indicates

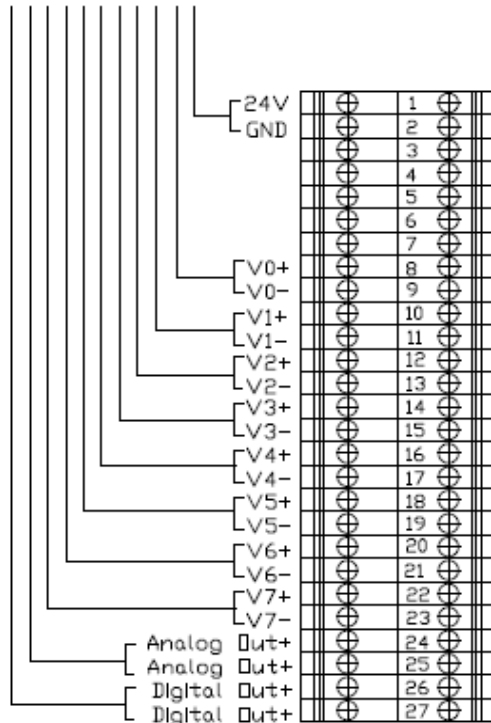


B. ANALOG INPUTS (V0-V7)

Technical specification

Total Channels	8
Input Type	mV, V, mA
Input range	+/- 150 mV +/- 500 mV +/- 1 V +/- 5 V +/- 10 V +/- 20 mV 4 ~ 20 mA
Isolation Voltage	3000 VDC
Fault and over voltage protection	With stands over voltage up to +/- 35 V
Sampling Rate	10 sample/sec (total)
Input Impedance	20 MΩ
Accuracy	+/- 0.1% or better
Power Consumption	1.2 W
I/O Connector Type	10-pin plug-terminal

Signal Connection



Rs422 Data Output (Analog Out Port)

INPUT CHANNEL	NMEA OUTPUT	REF	VALUE	CHKSUM
V0	\$NMANA,0,xx*hh	0	MEASURED VOLTAGE	YES
V1	\$NMANA,1,xx*hh	1	MEASURED VOLTAGE	YES
V2	\$NMANA,2,xx*hh	2	MEASURED VOLTAGE	YES
V3	\$NMANA,3,xx*hh	3	MEASURED VOLTAGE	YES
V4	\$NMANA,4,xx*hh	4	MEASURED VOLTAGE	YES
V5	\$NMANA,5,xx*hh	5	MEASURED VOLTAGE	YES
V6	\$NMANA,6,xx*hh	6	MEASURED VOLTAGE	YES
V7	\$NMANA,7,xx*hh	7	MEASURED VOLTAGE	YES