



AZIENDA CON SISTEMA
QUALITÀ CERTIFICATO IN
CONFORMITÀ ALLA NORMA
UNI EN ISO 9001:2008
COMPANY WITH QUALITY
SYSTEM CERTIFIED
ACCORDING TO UNI EN ISO
9001:2008

ITALSENSOR S.R.L.

CONNESSIONI ELETTRICHE (INCREMENTALI) ELECTRICAL CONNECTIONS (INCREMENTAL)

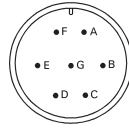
Vista lato contatti - from contacts view

Connettore MIL da pannello 7 poli MS3102A 16S-1P MIL panel connector 7 pins MS3102A 16S-1P

ELETTRONICHE - OUTPUT
NPN - PNP OPEN COLLECTOR - PUSH-PULL
(S, OC, P, OP, PP2)

Connessioni - Connections **S07 ; L07**

TYPE "A"



PIN A	0 Volt	Nero	Black
PIN B	Case		
PIN C	Out 1 (CH A)	Verde	Green
PIN D	Out Z (CH Z)	Blu	Blue
PIN E	Out 2 (CH B)	Giallo	Yellow
PIN F	+ Vcc	Rosso	Red
PIN G	N.C.		

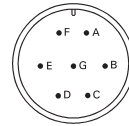
Connettore MIL da pannello 7 poli MS3102A 16S-1P MIL panel connector 7 pins MS3102A 16S-1P

ELETTRONICHE
PUSH-PULL - LINE DRIVER
VERSIONE:
MONODIREZIONALE,
MONODIREZIONALE + ZERO,
BIDIREZIONALE (LD2, LD)

OUTPUT
PUSH-PULL - LINE DRIVER
VERSION:
UNIDIRECTIONAL,
UNIDIRECTIONAL+ZERO,
BIDIRECTIONAL (LD2, LD)

Connessioni - Connections **S07 ; L07**

TYPE "B" - "H"



	B MONODIR. E BIDIREZIONALE UNIDIR. AND BIDIRECTIONAL			H MONODIREZIONALE + ZERO UNIDIR. + ZERO INDEX		
PIN A	Out 1 (CH A)	Verde	Green	Out 1 (CH A)	Verde	Green
PIN B	Out 2 (CH B)	Giallo	Yellow	Out Z (CH Z)	Blu	Blue
PIN C	Out $\bar{1}$ (CH \bar{A})	Marrone	Brown	Out $\bar{1}$ (CH \bar{A})	Marrone	Brown
PIN D	+ Vcc	Rosso	Red	+ Vcc	Rosso	Red
PIN E	Out $\bar{2}$ (CH \bar{B})	Rosa	Pink	Out $\bar{2}$ (CH \bar{Z})	Bianco	White
PIN F	0 Volt	Nero	Black	0 Volt	Nero	Black
PIN G	Case	Case	Case	Case	Case	Case

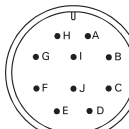
Connettore MIL da pannello 10 poli MS3102A 18-1P MIL panel connector 10 pins MS3102A 18-1P

ELETTRONICHE
LINE DRIVER
VERSIONE: BIDIREZIONALE + ZERO
(LD2 - LD)

OUTPUT
LINE DRIVER
VERSION: (LD - LD2)
BIDIRECTIONAL+ZERO

Connessioni - Connections **S10 ; L10**

TYPE "C"



PIN A	Out 1 (CH A)	Verde	Green
PIN B	Out 2 (CH B)	Giallo	Yellow
PIN C	Out Z (CH Z)	Blu	Blue
PIN D	+ Vcc	Rosso	Red
PIN E	+ Vcc		
PIN F	0 Volt	Nero	Black
PIN G	Out $\bar{1}$ (CH \bar{A})	Marrone	Brown
PIN H	Out $\bar{2}$ (CH \bar{B})	Rosa	Pink
PIN I	Out \bar{Z} (CH \bar{Z})	Bianco	White
PIN J	Case		

Connettore da pannello 12 poli tipo "CONTACT" Panel connector 12 pins type "CONTACT"

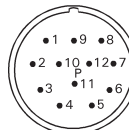
ELETTRONICHE NPN - PNP - OPEN
COLLECTOR - PUSH-PULL CON O
SENZA PROTEZIONE AL CORTO
CIRCUITO - PUSH-PULL
COMPLEMENTATO - LINE DRIVER
(S, OC, P, OP, PP2, LD2, LD)

NPN PNP - OPEN COLLECTOR
PUSH-PULL WITH OR WITHOUT
SHORT CIRCUIT PROTECTION
PUSH-PULL COMPLEMENTARY
LINE DRIVER OUTPUT
(S, OC, P, OP, PP2, LD2, LD)

Versione antioraria (standard) ed oraria (a richiesta), stessa assegnazione dei segnali
CCW (standard) and CW (option) version same signals

Connessioni - Connections **S1 ; R1**

TYPE "D"



PIN 1	Out $\bar{2}$ (CH \bar{B})	Rosa	Pink
PIN 2	N.C.		
PIN 3	Out Z (CH Z)	Blu	Blue
PIN 4	Out $\bar{1}$ (CH \bar{Z})	Bianco	White
PIN 5	Out 1 (CH A)	Verde	Green
PIN 6	Out $\bar{1}$ (CH \bar{A})	Marrone	Brown
PIN 7	N.C.		
PIN 8	Out 2 (CH B)	Giallo	Yellow
PIN 9	Case		
PIN 10	0 Volt	Nero	Black
PIN 11	N.C.		
PIN 12	+ Vcc	Rosso	Red

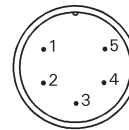
Connettore da pannello 5 poli tipo "LUMBERG" Panel connector 5 pins type "LUMBERG"

ELETTRONICHE: (S, OC, P, OP, PP2)
NPN - PNP - OPEN COLLECTOR
PUSH-PULL CON O SENZA
PROTEZIONE AL CORTO CIRCUITO

OUTPUT: (S, OC, P, OP, PP2)
NPN PNP - OPEN COLLECTOR
PUSH-PULL WITH OR WITHOUT
SHORT CIRCUIT PROTECTION

Connessioni - Connections **S05 ; L05**

TYPE "E"



PIN 1	0 Volt	Nero	Black
PIN 2	+ Vcc	Rosso	Red
PIN 3	Out 1 (CH A)	Verde	Green
PIN 4	Out 2 (CH B)	Giallo	Yellow
PIN 5	Out Z (CH Z)	Blu	Blue

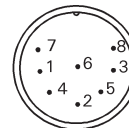
Connettore da pannello 8 poli tipo "LUMBERG" Panel connector 8 pins type "LUMBERG"

ELETTRONICHE:
LINE DRIVER (LD2, LD)
VERSIONE: BIDIREZIONALE + ZERO

OUTPUT:
LINE DRIVER VERSION
BIDIRECTIONAL+ZERO

Connessioni - Connections **S08 ; L08**

TYPE "F"



PIN 1	0 Volt	Nero	Black
PIN 2	+ Vcc	Rosso	Red
PIN 3	Out 1 (CH A)	Verde	Green
PIN 4	Out 2 (CH B)	Giallo	Yellow
PIN 5	Out $\bar{1}$ (CH \bar{A})	Marrone	Brown
PIN 6	Out $\bar{2}$ (CH \bar{B})	Rosa	Pink
PIN 7	Out Z (CH Z)	Blu	Blue
PIN 8	Out \bar{Z} (CH \bar{Z})	Bianco	White

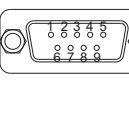
Connettore da pannello DB 9 poli Panel connector DB 9 pins

ELETTRONICHE:
NPN - PNP OPEN COLLECTOR -
PUSH-PULL CON O
SENZA PROTEZIONE AL CORTO
CIRCUITO - LINE DRIVER
(S, OC, P, OP, PP2, LD2, LD)

OUTPUT:
NPN - PNP - OPEN COLLECTOR
PUSH-PULL WITH OR WITHOUT
SHORT CIRCUIT PROTECTION
LINE DRIVER
(S, OC, P, OP, PP2, LD2, LD)

Connessioni - Connections **D09**

TYPE "G"



PIN 1	0 Volt	Nero	Black
PIN 2	+ Vcc	Rosso	Red
PIN 3	Out 1 (CH A)	Verde	Green
PIN 4	Out 2 (CH B)	Giallo	Yellow
PIN 5	Out $\bar{1}$ (CH \bar{A})	Marrone	Brown
PIN 6	Out $\bar{2}$ (CH \bar{B})	Rosa	Pink
PIN 7	Out Z (CH Z)	Blu	Blue
PIN 8	Out \bar{Z} (CH \bar{Z})	Bianco	White
PIN 9	N.C.		

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Italsensor S.r.l. takes no responsibility for typographical errors

Edizione 02/2012



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CARATTERISTICHE ELETTRICHE INTERFACCE INCREMENTALI ELECTRICAL INTERFACE SPECIFICATION FOR INCREMENTALS

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I valori sono validi all'interno dell'intervallo di frequenza e di temperatura definito per ogni singolo prodotto
The values are valid inner the interval of frequency and temperature defined for every single product

Si richiede cavo schermato 80% min.; Screened cable shielded 80% min is requested.

V_{cc} = tensione di alimentazione; voltage supply
 V_{out} = tensione di uscita; output voltage
 I_{out} = corrente di uscita; output current
 R_L = resistenza di carico interna; load resistance

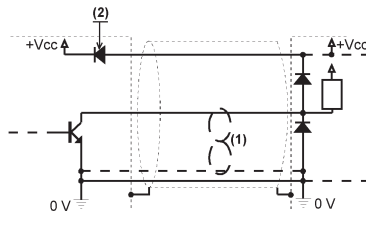
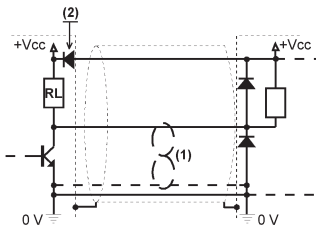
(1) Protezione contro inversione di polarità disponibile con tensione di alimentazione uguale a 5 V_{cc} e 5/30 V_{cc}
(1) Reverse polarity protection can be available with 5 Vdc and 5/30 Vdc voltage supply.

(2) Per versione T144/TK25 si ha $R_L = 3,3 \text{ k}\Omega$ per $V_{cc} = 11/30 \text{ V}$

V_{cc} (V)	R_L (k Ω) (2)
5 (1)	0,68
11÷30	4,7

S = NPN

OC = NPN Open collector



Lunghezza cavo max 6 mt a 50 kHz - Max. length of cable 6 m at 50 KHz
Tensione di alimentazione: 5 - 11÷30 V_{cc} ove possibile - Voltage supply: V_{cc} 5 - 11÷30 where available

NPN

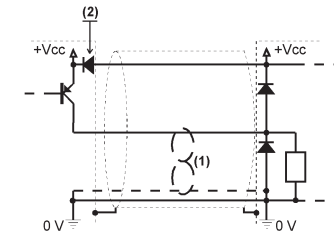
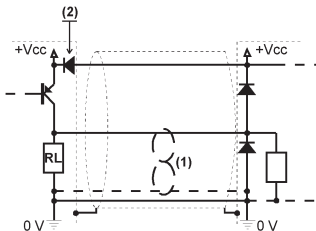
I out	V_{out}	
	Logic "Low"	Logic "High"
$\leq 50 \text{ mA}$	$\leq 0,6 \text{ V}$	$= V_{cc}$

OC

I out	V_{out}	
	Logic "Low"	Logic "High"
$\leq 50 \text{ mA}$	$\leq 0,6 \text{ V}$	open collector

P = PNP

OP = PNP Open collector



Lunghezza cavo max 6 mt a 50 kHz - Max. length of cable 6 m at 50 KHz
Tensione di alimentazione: 5 - 11÷30 V_{cc} ove possibile - Voltage supply: V_{cc} 5 - 11÷30 where available

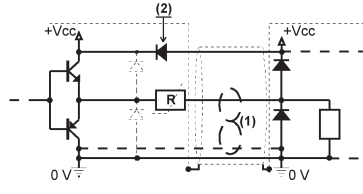
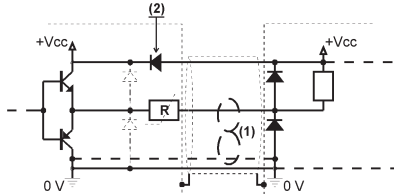
P

I out	V_{out}	
	Logic "Low"	Logic "High"
$\leq 50 \text{ mA}$	0 V	$V_{cc} - 2 \text{ V}$

OP

I out	V_{out}	
	Logic "Low"	Logic "High"
$\leq 50 \text{ mA}$	open collector	$V_{cc} - 2 \text{ V}$

PP2 = Push-pull con protezione attiva al corto circuito PP2 = Push-pull with short circuit active protection



Lunghezza cavo max 6 mt a 50 kHz - Max. length of cable 6 m at 50 KHz
Tensione di alimentazione: 5 - 11÷30 V_{cc} ove possibile - Voltage supply: V_{cc} 5 - 11÷30 where available

PP2

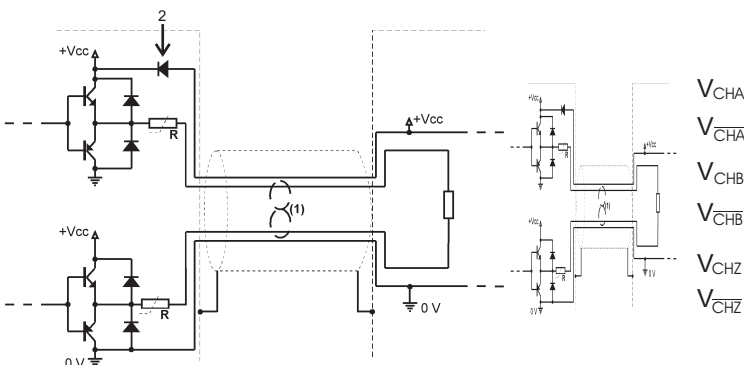
I out	V_{out}	
	Logic "Low"	Logic "High"
$\leq 35 \text{ mA}$	$\leq 1,5 \text{ V}$	$= V_{cc} - 2 \text{ V}$

LD2

I out	V_{out}	
	Logic "Low"	Logic "High"
$\leq 20 \text{ mA}$	$\leq 0,5 \text{ V}$	$= V_{cc} - 2 \text{ V}$

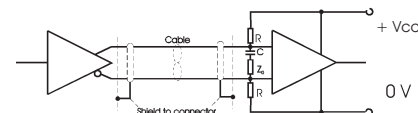
NOTA: Le elettroniche LD2-1130 e PP2-1130 sono compatibili con lo standard HTTL
NOTE: The output LD2-1130 and PP2-1130 are standard HTTL compatible

LD2 = Line Driver con protezione attiva al corto circuito LD2 = Line Driver with short circuit active protection



V_{CHA}
 V_{CHB}
 V_{CHZ}
 V_{CHA}
 V_{CHB}
 V_{CHZ}

LD = Line Driver senza protezione al corto circuito LD = Line Driver without short circuit protection



Valori suggeriti per tensione di alimentazione 5 V_{cc} : $C = 10 \text{ nF}$ - $Z_o = 150 \Omega$ - $R = 4,7 \text{ k}\Omega$
Line driver usato:
- Alimentazione 5 V_{cc} o 24-5 V_{cc} : 26LS31 - $I_{out} = 20 \text{ mA}$ max
- Alimentazione 11-30 V_{cc} oppure 5-30 V_{cc}
Line receiver raccomandato, rispettivamente: 26LS32
Lunghezza cavo max 100 m a 100 kHz
Suggested value for 5 V_{cc} voltage supply: $C = 10 \text{ nF}$ - $Z_o = 150 \text{ Ohm}$ - $R = 4.7 \text{ k}\Omega$
Used line driver:
Power supply 5 V_{cc} or 24-5 V_{cc} : 26LS31 $I_{out} = 20 \text{ mA}$ max
Power supply 11-30 V_{cc} or 5-30 V_{cc}
Recommended line receiver respectively: 26LS32
Maximum cable length: 100m at 100 kHz

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