

POWER DAY

Ferrara 10 June 2025

Appunti in ordine sparso...

Consumo Circuito MasterLogic 3 small

Quantity	Reference	Part	Footprint	Manufacturer	Part Code	Vendor Code	Consumo [mA]	NOTE
1	IC1	MCP3550-50E_SN	SOIC127P600X175-8N	Microchip			0,12	
1	IC2	ADR364BUJZ-R2	SOT95P280X100-5N	Analog Devices			0,19	
1	IC3	SN65HVD1785DG4	SOIC127P600X175-8N	Texas Instruments			2,0	Driver disabled, Receiver enabled
1	IC5	LP38690SDX-5.0_NOPB	WSON7_p095				0,1	
1	IC10	PIC18F27Q43-I_STX	QFN29P4X4X				6,7	typ. @ 64MHz Vcc 3.0V
1	U1	INA280A	SOT23_5p				0,37	
1	U2	TSV911A	sot23_5p				0,8	
1	U64	DAC7571	sot23_6	TI	DAC7571IDBVT	RS 197-7114	0,14	
1	U65	OPA197IDBVT	sot23_5p				0,14	
1	S1	TMUX1204DQAR	TMUX1204DQAR	Texas Instruments			0,002	
3	S2,S3,S4	STG719STR	SOT95P280X145-6N	STMicroelectronics			0,001	
							10,563	mA typ.

- <https://pandora.infn.it/public/c6f01b>
- Password: MasterLogic3

Dimensionamento dei cavi di collegamento

AWG/Metric Conductor Table

AWG	Stranding	Approx OD		Area		Weight		DC Resistance (Bare)*		DC Resistance (Tinned)*	
		Inch	mm	CMA	mm²	Lb/1000 ft	kg/km	Ohms/1000 ft	Ohms/km	Ohms/1000 ft	Ohms/km
38	Solid	0.0040	0.102	16.0	0.008	0.048	0.071	648	2126	696	2283
38	7/46	0.0047	0.119	17.2	0.009	0.053	0.079	614	2014	659	2162
36	Solid	0.0050	0.127	25.0	0.013	0.076	0.113	415	1362	445	1460
36	7/44	0.0060	0.152	28.0	0.014	0.086	0.128	378	1240	406	1332
34	Solid	0.0063	0.160	39.7	0.020	0.120	0.179	261	856	280	919
34	7/42	0.0075	0.191	43.8	0.022	0.135	0.201	242	794	260	853
32	Solid	0.0080	0.203	64.0	0.032	0.194	0.289	162	531	174	571
32	7/40	0.0093	0.236	67.3	0.034	0.208	0.310	157	515	169	554
32	19/44	0.0100	0.254	76.0	0.039	0.235	0.350	139	456	149	489
30	Solid	0.0100	0.254	100	0.051	0.303	0.451	104	341	111	364
30	7/38	0.0120	0.305	112	0.057	0.346	0.515	94.5	310	101	331
30	19/42	0.0125	0.318	119	0.060	0.367	0.546	89.1	292	95.6	314
28	Solid	0.0126	0.320	159	0.081	0.481	0.716	65.2	214	69.3	227
28	7/36	0.0150	0.381	175	0.089	0.540	0.804	60.4	198	64.9	213
28	19/40	0.0155	0.394	183	0.093	0.564	0.839	57.9	190	62.2	204
27	7/35	0.017	0.432	220	0.111	0.679	1.01	48.1	158	51.7	170
26	Solid	0.0159	0.404	253	0.128	0.766	1.14	41.0	135	43.5	143
26	7/34	0.019	0.483	278	0.141	0.858	1.28	38.1	125	40.9	134
26	10/36	0.019	0.483	250	0.127	0.772	1.15	42.3	139	45.4	149
26	19/38	0.020	0.508	304	0.154	0.939	1.40	34.8	114	37.4	123
25	7/0067	0.020	0.508	314	0.159	0.970	1.44	33.7	111	36.1	118
25	7/33	0.021	0.533	353	0.179	1.09	1.62	30.0	98.4	32.2	106
25	40/40	0.023	0.584	384	0.195	1.19	1.77	27.5	90.2	29.5	96.8

Calcolo resistenza conduttore elettrico				
Lunghezza [m]	50	-->	Resistenza[ohm]	0,1091
sezione [mm2]	8		d.d.p. [V]	2,73
Corrente [A]	25		potenza [W]	68,18
temperatura [C]	30		diametro conduttore [mm]	3,192
Resist. Cu	1,75E-08			

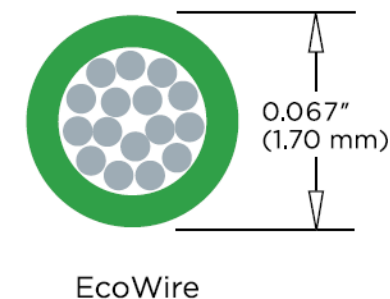
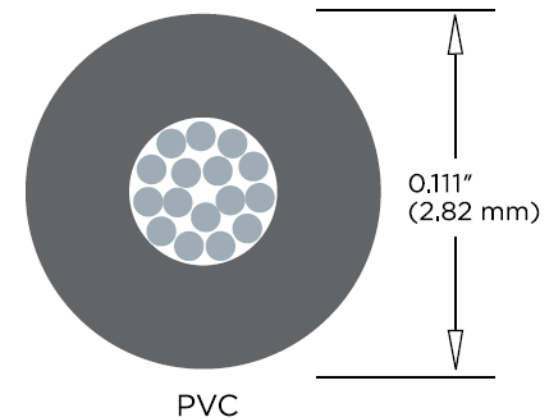
Cavi di collegamento MasterPanel – RDO

- Innovative EcoWire combines increased performance with a minimized environmental impact.
 - EcoWire Plus offers all the benefits of EcoWire, plus higher temperature range and additional fluid resistance for demanding factory applications.
 - Compared to PVC wire, EcoWire's (mPPE) insulation allows wire that is:
 - Up to 45% smaller in diameter
 - Up to 40% lighter
 - Zero halogen, with no heavy-metal pigments
 - 100% recyclable
- **Temperature Range**
 - -40°C to + 105°C (EcoWire)
 - -40°C to + 110°C (EcoWire Plus)
 - **Materials**
 - Stranded or solid tinned copper conductors
 - Modified polyphenylene- ether insulation
 - **Approvals**
 - UL AWM 11028 VW-1
 - CSA AWM I A/B FT1
 - IEC 60332-2 Flame Behavior
 - RoHS Compliant
 - REACH Compliant
 - Zero Halogen
 - CE Compliant



EcoWire Plus 300 V

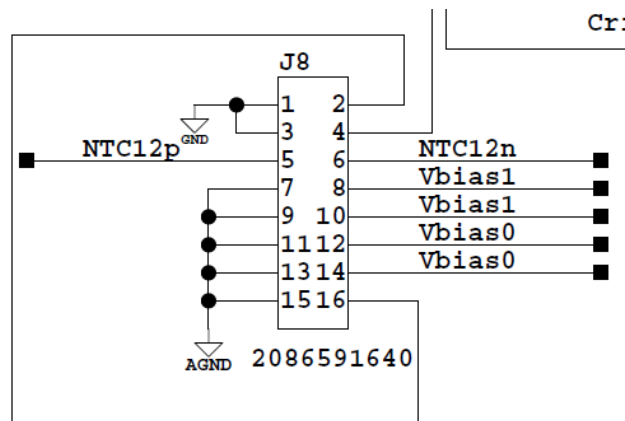
18 AWG (0.81) Wire



Cavi di collegamento MasterPanel – RDO

EcoWire Plus

Part No.	Conductor Size			Stranding		Insulation Thickness		Wire Diameter	
	AWG	mm ²	ISO mm Equiv.	AWG	mm	Inch	mm	Inch	mm
6820	28	0.09	—	7/36	7 x 0.12	0.008	0.20	0.031	0.79
6821	26	0.14	0.13	7/34	7 x 0.16	0.008	0.20	0.035	0.89
6822	24	0.23	0.22	7/32	7 x 0.20	0.008	0.20	0.040	1.02
6823	22	0.35	0.35	7/30	7 x 0.25	0.008	0.20	0.046	1.17
6824	20	0.56	0.5	7/28	7 x 0.32	0.008	0.20	0.054	1.37



Connettore per schede FEB

La Corrente massima verso le FEB e' 1.6A per pin Vbias / Agnd durante Annealing

iGrid 2.0 WIRE TO BOARD CONNECTOR SYSTEM (GOLD-PLATING)



RATED CURRENT AND APPLICABLE WIRES

Wire Size	Rated Current (MAX.)	Insulation O.D.
AWG #22	2.0 A	ϕ 0.85 mm ~ ϕ 1.5 mm Insulation O.D.
AWG #24	1.5 A	
AWG #26	1.5 A	
AWG #28	1.0 A	

CURRENT DERATING

AWG	Amps (A)			
	10-circuits	20-circuits	34-circuits	40-circuits
22	3.0	2.5	2.0	
24	2.5		2.0	1.5
26		2.0		1.5
28	2.0		1.5	1.0

1. Values are for REFERENCE ONLY.
2. Current deratings are based on not exceeding 30° C Temperature Rise
3. Temperature Rise is measured in barrel area of crimp terminal.
4. PCB trace design can greatly affect temperature rise results.
5. Data is for all circuits powered.

Cavi di collegamento MasterPanel – RDO

molex

EcoWire Plus

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	AWG	mm ²	ISO mm Equiv.	AWG	mm	Inch	mm	Inch	mm
6820	28	0.09	—	7/36	7 x 0.12	0.008	0.20	0.031	0.79
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Part Number : 5023510400

Product Description : DuraClik Wire-to-Board Receptacle Housing, Single Row, 4 Circuits, Natural

Series Number : 502351

Status : Active

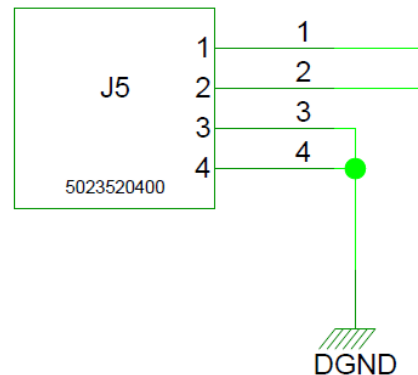
Product Category : Connector Housings



Connettore per schede RDO

molex

PRODUCT SPECIFICATION

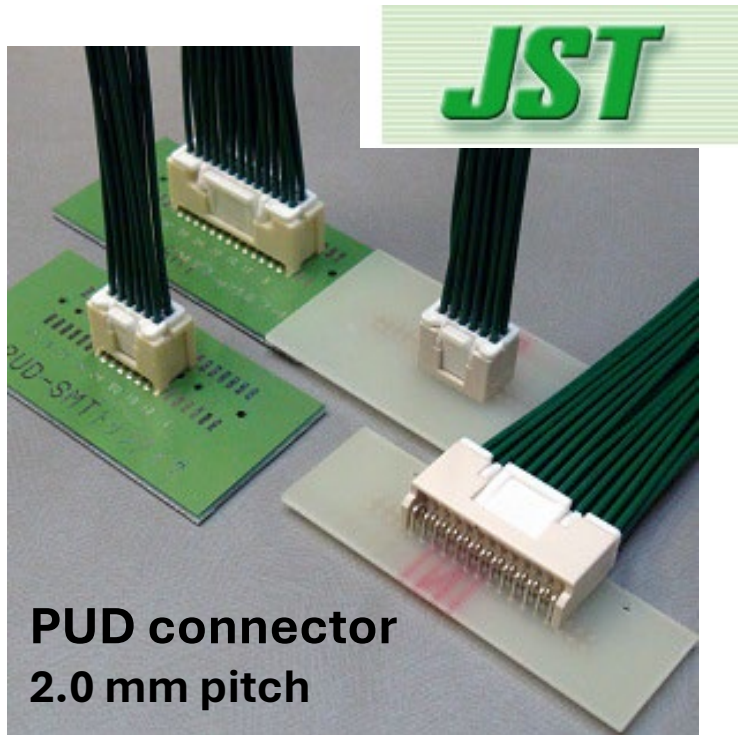


【3. 定格及び適用電線 RATINGS AND APPLICABLE WIRES】

項目 Items	規格 Standards	
最大許容電圧 Rated Voltage (MAX.)	125V	
最大許容電流 及び適用電線 Rated Current (MAX.) and Applicable wires	AWG# 22	3.0A
	AWG# 24	2.0A
	AWG# 26	1.5A
使用温度範囲 Ambient Temperature Range	-40°C ~ 105°C*1	

[AC(実効値 rms)/DC]
被覆外径: φ1.4 mm MAX.
Insulation O.D.

Collegamento dei cavi di connessione delle PDU sul MasterPanel

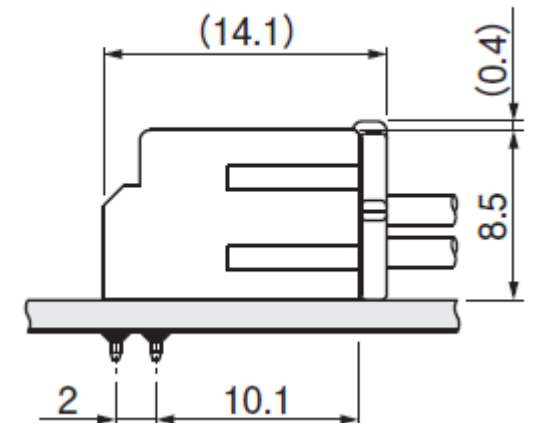
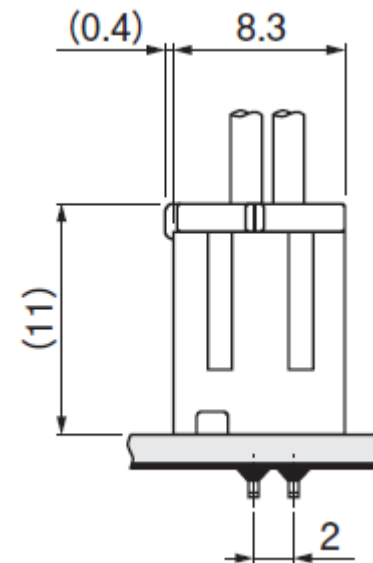
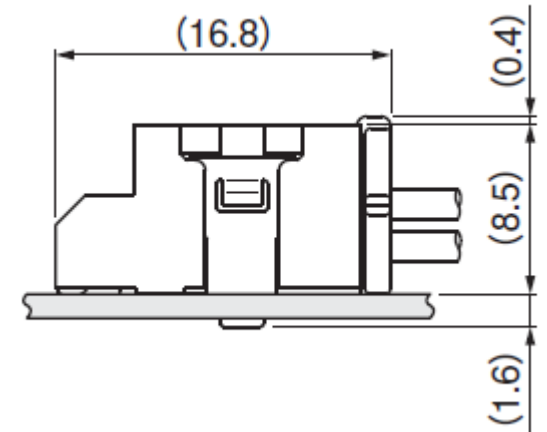
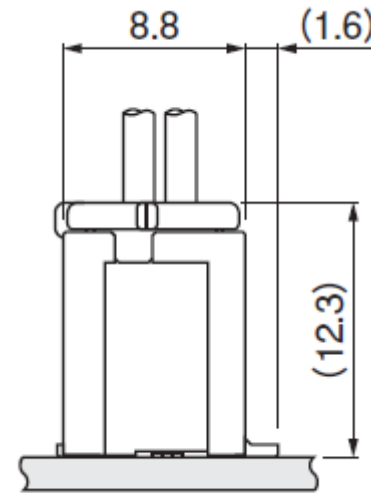


Specifications

- Current rating: 3 A AC/DC (AWG #22)
- Voltage rating: 250 V AC/DC
- Temperature range: -25°C to +85°C (including temperature rise in a applying electrical current)
- Contact resistance: Initial value/ 10 mΩ max.

After environmental tests/ 20 mΩ max.

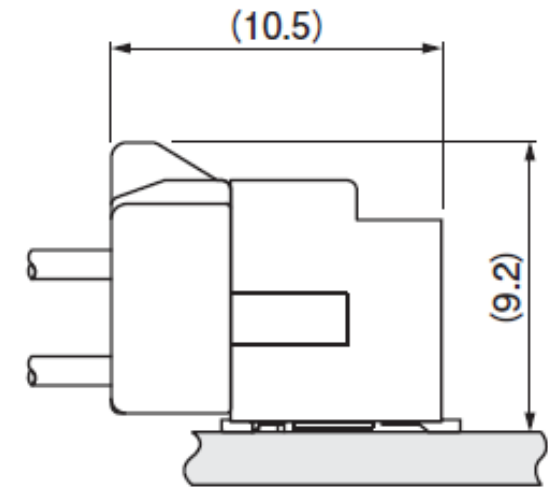
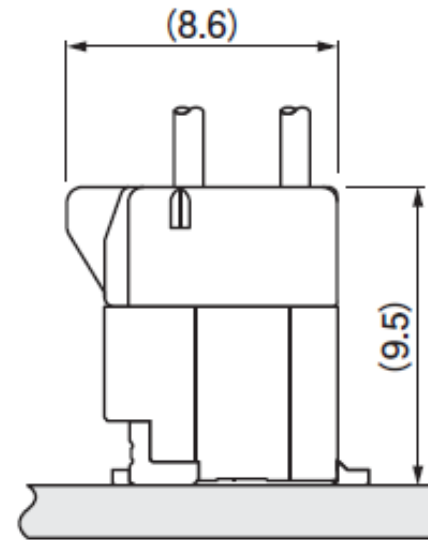
- Insulation resistance: 1,000 MΩ min.
- Withstanding voltage: There shall be no breakdown or flashover while applying 800 VAC for one minute.
- Applicable wire range: Conductor size/ AWG #28 to AWG #22 Insulation O.D./ $\phi 0.76$ mm to $\phi 1.5$ mm



Collegamento dei cavi di connessione delle PDU sul MasterPanel



ZPD connector 1.5 mm pitch



Specifications

- Current rating: 2 A DC (AWG #24)
- Voltage rating: 100 V AC/DC
- Temperature range: -25°C to +85°C (including temperature rise in a applying electrical current)
- Contact resistance: Initial value/ 30 mΩ max.

After environmental tests/ 60 mΩ max.

- Insulation resistance: 500 MΩ min.
- Withstanding voltage:

There shall be no breakdown or flashover while applying 500 VAC for one minute.

- Applicable wire range:

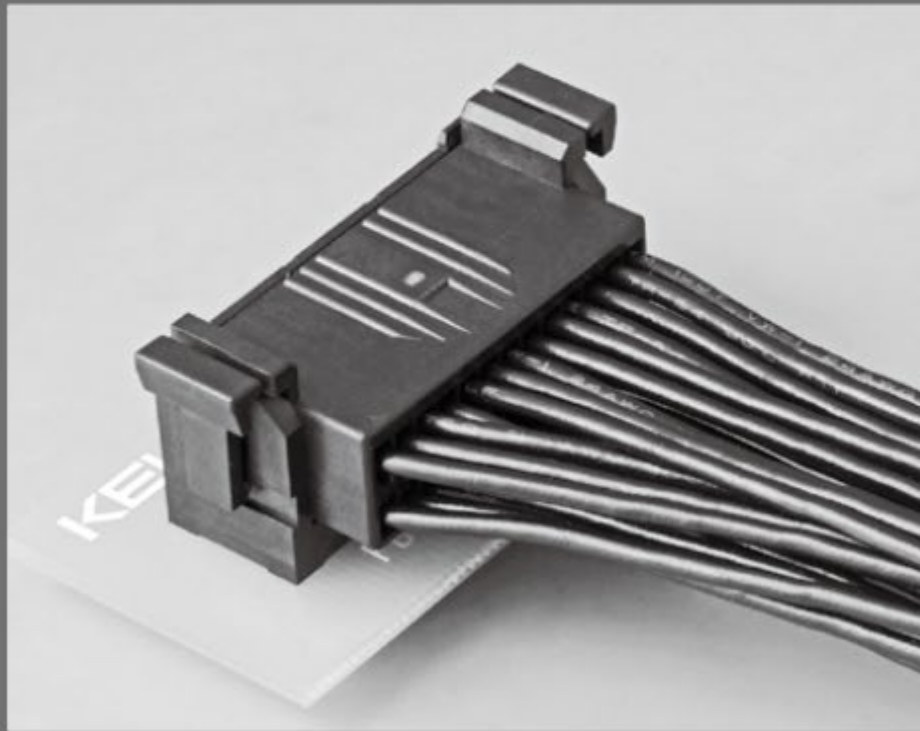
Conductor size/ AWG #28 to AWG #24

Insulation O.D./ ϕ 0.76 mm to ϕ 1.2 mm

Collegamento dei cavi di connessione delle PDU sul MasterPanel

FBC SERIES

2mm PITCH CONNECTOR FOR DISCRETE CABLE/ CRIMP TYPE

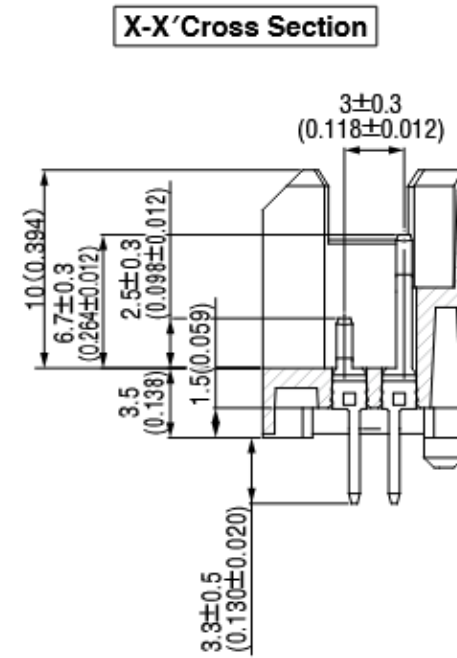
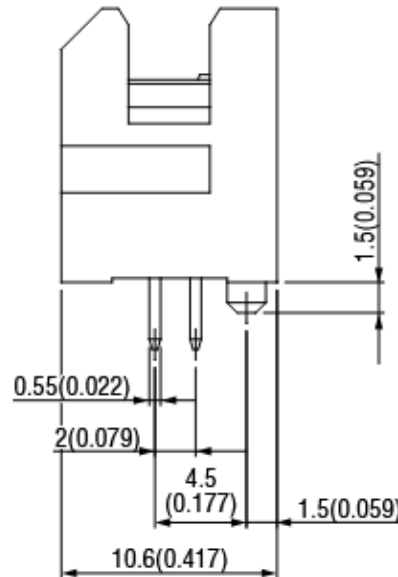
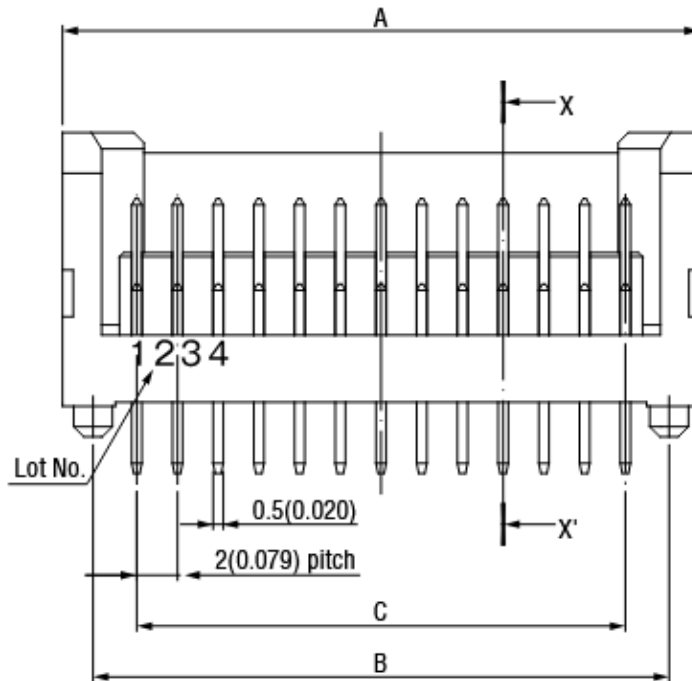
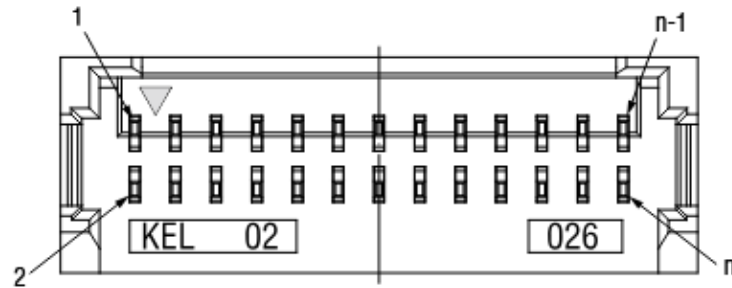


FEATURES

- ▶ Side cable-entry type connector with stacked mating structure.
- ▶ Provided with an E-Lock type locking mechanism with high operability.
- ▶ The E-Lock mechanism prevents accidental disengagement, maintaining stable contact performance.
- ▶ With a twin-leaf pinching 2 point contact structure adopted as a contact mechanism, improved reliability based on stable contact performance is ensured.
- ▶ Three sizes : 26, 36 and 40 pins.
- ▶ For discrete cable. (#22 AWG, #24 AWG and #26 AWG)

KEL
www.kel.jp

Collegamento dei cavi di connessione delle PDU sul MasterPanel



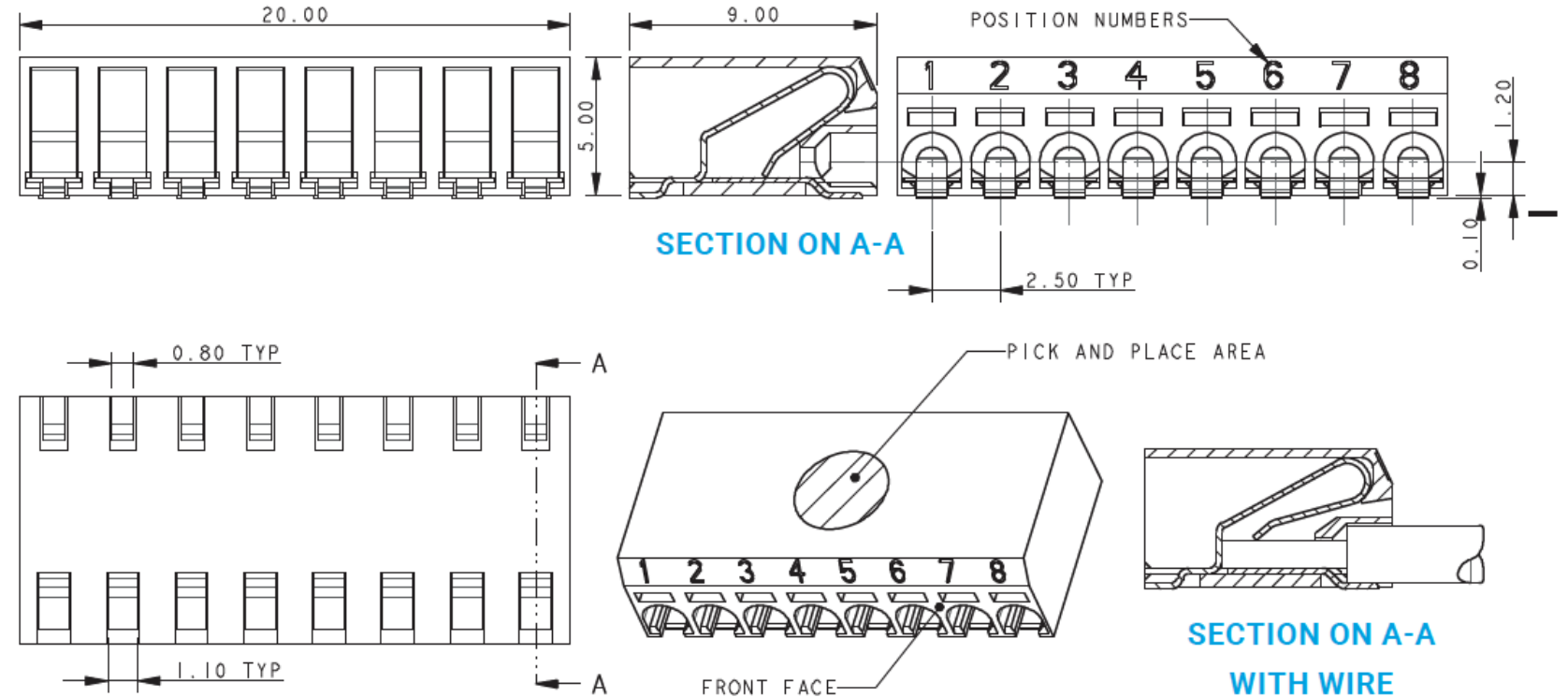
► Product Table / Dimensions

No. of contacts	Part Number	A	B	C
26	FBC11-026-1-B	31.3 (1.232)	28.3 (1.114)	24.0 (0.945)
36	FBC11-036-1-B	41.3 (1.626)	38.3 (1.508)	34.0 (1.339)

Collegamento dei cavi di connessione delle PDU sul MasterPanel



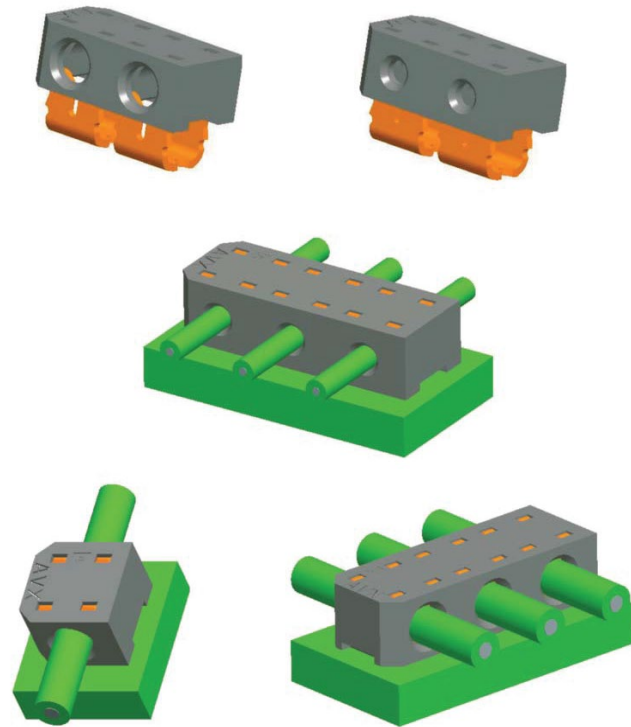
8 WAY WIRE TO BOARD CONNECTOR



POKE-HOME: HORIZONTAL



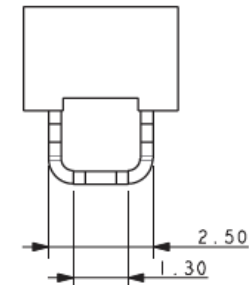
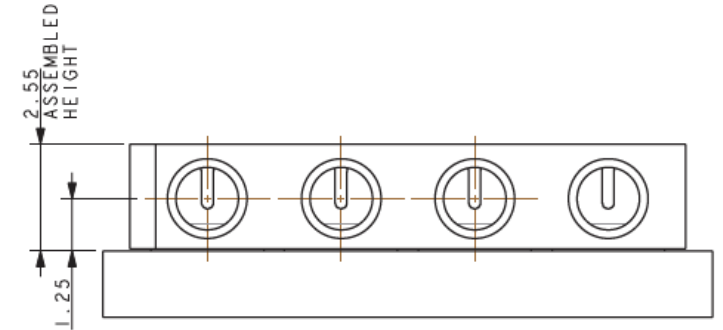
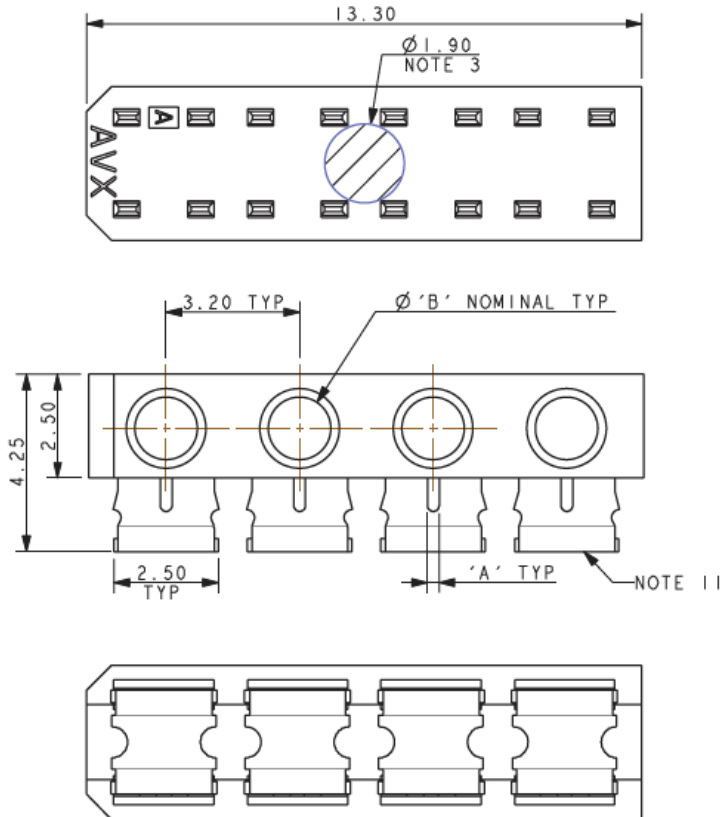
Collegamento dei cavi di connessione delle PDU sul MasterPanel



POKE-HOME: LOW PROFILE
IDC 22-30



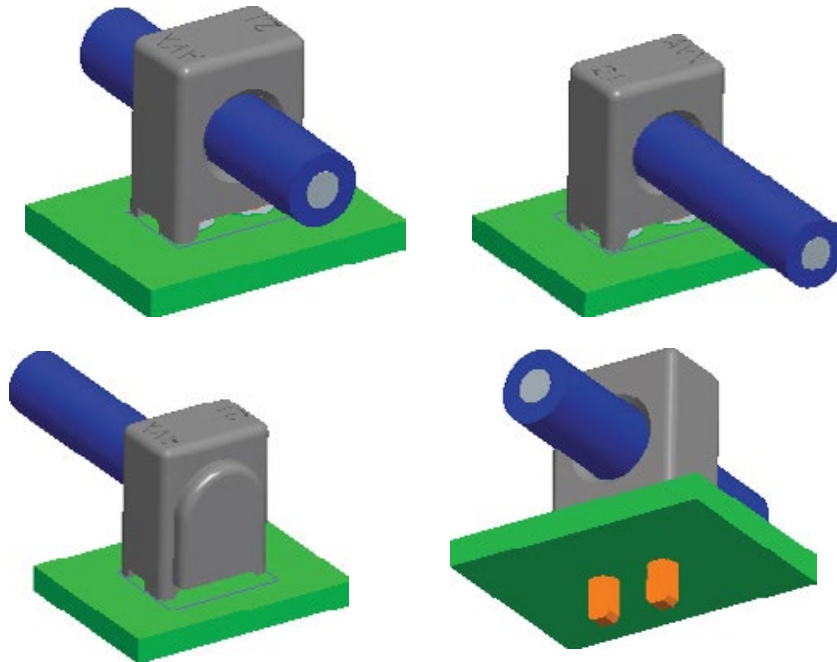
00-9176-001-8X3-X06
4 WAY



NOTES:

1. 4 WAY CONNECTOR FOR IDC WIRE TO BOARD CONNECTOR.

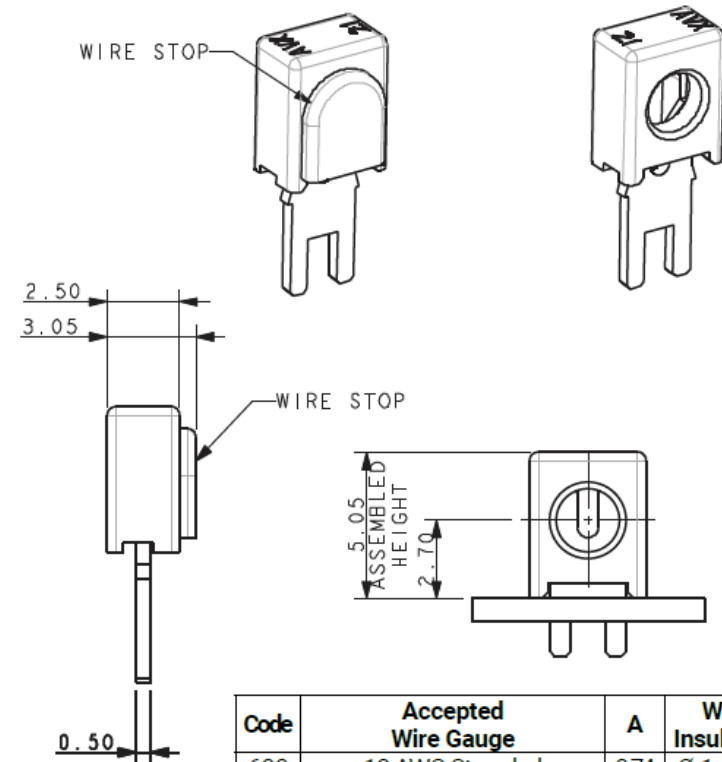
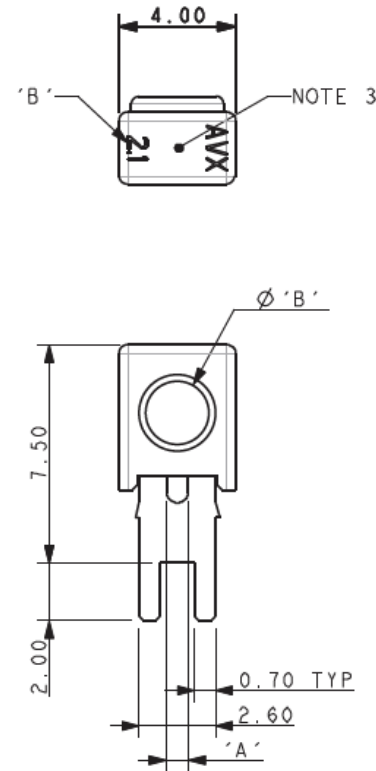
Collegamento dei cavi di connessione delle PDU sul MasterPanel



POKE-HOME: SINGLE TINE
PTH 18-24 AWG



18-24 AWG 1 WAY PTH CONNECTOR WIRE STOP CAPPED

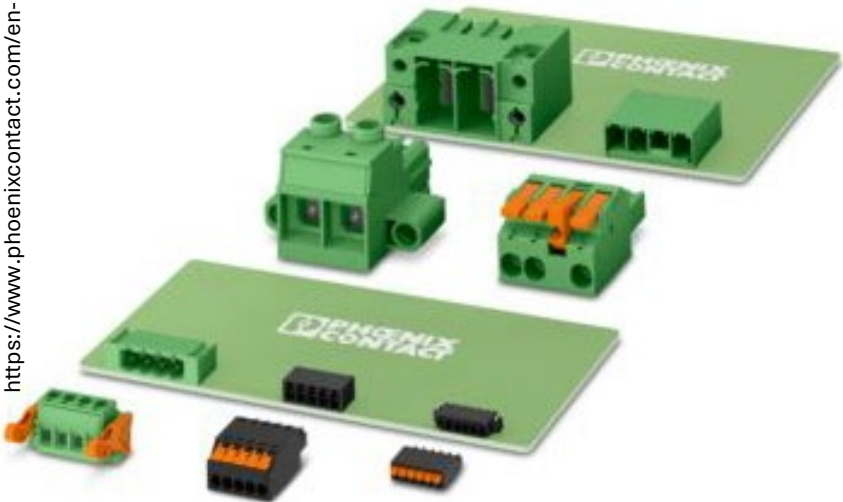


Code	Accepted Wire Gauge	A	Wire Insulation	B
600	18 AWG Stranded	0.74	Ø 1.6-2.1	2.1
601	20 AWG Solid or Stranded	0.60	Ø 1.6-2.1	2.1
602	22 AWG Solid or Stranded	0.47	Ø 1.1-1.6	1.6
603	24 AWG Solid or Stranded	0.37	Ø 1.1-1.6	1.6

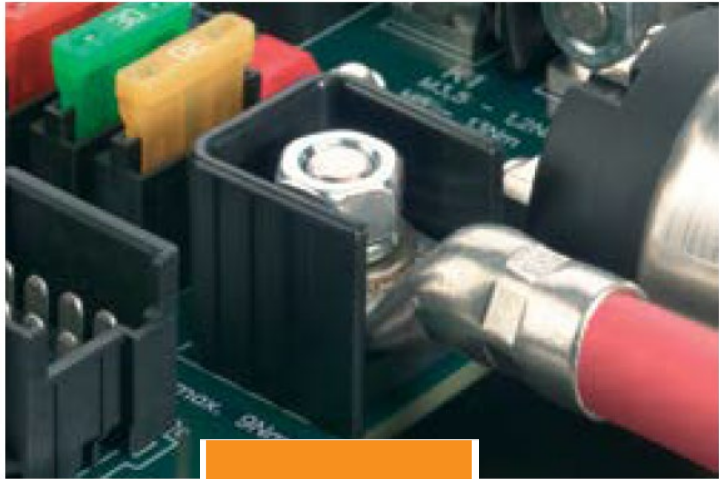
SUGGESTED PCB LAYOUT

Connettori di Potenza ..alcune possibilita'

<https://www.phoenixcontact.com/en-pc/products/pcb-terminal-blocks-and-pcb-connectors/pcb-connectors>



<https://www.te.com/en/products/brands/erni/erni-powerelements.html>



INFN Ferrara

<https://www.molex.com/en-us/products/connectors/high-power-solutions/ultraWize-connectors>



Il problema
maggiore sara'
comunque lo
spazio..

