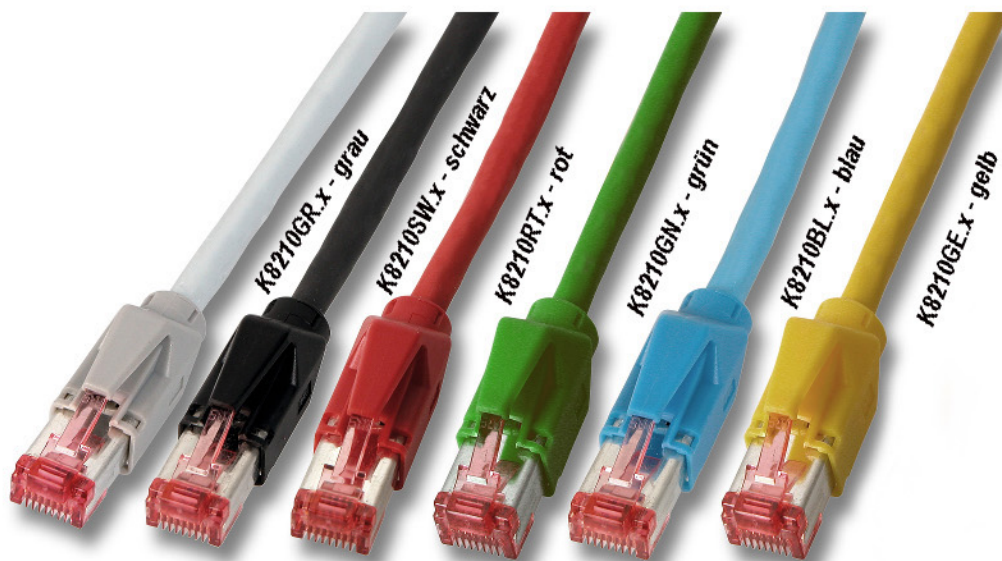


EFB Elektronik GmbH

K8210xx.x **Cat.6a Patchkabel, Hirose TM21 mit
Leoni Kerpen MegaLine F6-90 S/F**



2 x HRS TM21 RJ45
Leoni Kerpen MegaLine F6-90 S/F
100 Ohm, halogenfrei
1:1 Belegung nach TIA/EIA 568B

MegaLine® F6-90 S/F flex

S₂ P₃ A₄ C₁ E₅

Type:

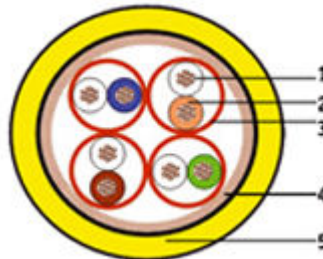
KS-02YSCH 4x2xAWG 27/7 PIMF

Category: 7



Construction:

- | | |
|----------------------|--|
| 1 Conductor: | bare stranded copper wire, AWG27/7 |
| 2 Insulation: | cellular-PE, core-Ø: max. 1,0 mm |
| Twisting element: | Pair |
| 3 Individual screen: | aluminium-bonded polyester tape |
| Twisting: | 4 pairs |
| 4 Overall screen: | tinned copper wire braid |
| 5 Outer sheath: | halogen-free, flame retardant compound |



Colour code: wh/bu, wh/or, wh/gn, wh/bn
Colour outer sheath: yellow, RAL-1021

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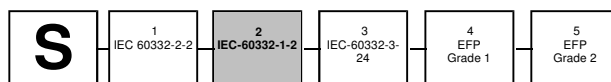
Printing outer sheath:

LEONI MegaLine F6-90 S/F flex 4P H SPACE Code 33415 \$Number of registration VDE 8080\$ \$Production lot code\$ \$Meter marking\$



Fire behaviour:

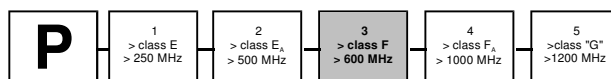
Flame retardance:	acc. to IEC 60332-1-2
Halogen acid gas emission:	acc. to IEC 60754-1/2
Smoke density:	acc. to IEC 61034-1/2
Calorific value (MJ/m):	0,33 (approx.)



Security (Fire behaviour)

Performance::

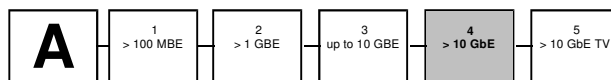
better than category 7 acc. EN 50288 and IEC 61156 excellent NEXT, excellent screening characteristics (individual and overall screen), low SKEW
Bandwidth 900 MHz



Performance (Cabling class, band width)

Applications:

Connecting cable and patch cord for generic cabling systems acc. ISO/IEC 11801 and EN 50173 (2nd edition). Ideal for all applications of classes D up to F Multimedia (Video, Data, Voice) >10 GbE acc. IEEE 802.3 an, Cable sharing, VoIP, PoE

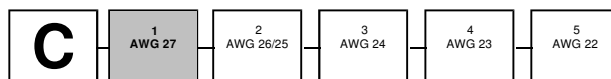


Application (Ethernet, TV)

Mechanical characteristics:

Bending radius:
during operation: min. 5 x overall diameter
Tensile strength:

40 (max.)

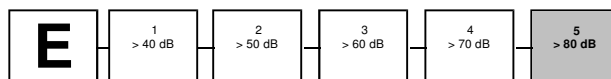


Construction (Conductor size, Tensile strength)

Electromagnetic behaviour:

Transfer impedance at 10 MHz (mOhm/m):
Screening attenuation up to 1000 MHz (dB):
Coupling attenuation up to 1000MHz (dB):

5 (nominal value)
60 (nominal value)
80 (nominal value)



EMC (Coupling attenuation)

MegaLine® F6-90 S/F flex

S₂ P₃ A₄ C₁ E₅

Type:
KS-02YSCH 4x2xAWG 27/7 PIMF



Electrical characteristics at 20°C:

DC resistance (Ohm/km):	170 (max.)
Insulation resistance (Gohm x km):	5 (min.)
Mutual capacitance (pF/m):	44 (approx.)
Signal velocity (c):	0,78 (approx.)
Propagation delay (ns/100m):	430 (approx.)
Skew at 100 MHz (ns/100m):	2,5 (approx.)
Characteristic impedance at 100 MHz (Ohm):	100±5
Test voltage Ueff (V):	1000
Operating voltage Ueff (V):	125 (max.)

Frequency MHz	Attenuation dB/10m		NEXT dB		PS-NEXT dB		ACR dB@10m		PS-ACR dB@10m		EL-FEXT dB@10m		PS-ELFEXT dB@10m		RL dB	
	typ.	Cat.7 max.*	typ.	Cat.7 min.*	typ.	Cat.7 min.*	typ.	Cat.7 min.*	typ.	Cat.7 min.*	typ.	Cat.7 min.*	typ.	Cat.7 min.*	typ.	Cat.7 min.*
1	,26	,29	95	80	92	77	95	80	92	77	92	80	89	80	21,8	-
10	,83	,85	94	80	91	77	94	79	91	77	84	74	81	71	29,7	25
100	2,74	2,78	90	72	87	69	88	70	85	69	70	54	67	51	35	20,1
200	3,9	4,01	87	68	84	65	83	64	80	65	60	48	57	45	33	18
250	4,39	4,53	85	66	82	63	81	62	78	63	56	46	53	43	31,6	17,3
500	6,21	6,62	78	62	75	59	72	55	69	59	52	40	49	37	28,8	17,3
600	6,91	7,33	76	61	73	58	69	53	66	58	48	38	45	35	27,1	17,3
700	7,48	-	75	-	72	-	67	-	64	-	34	-	31	-	26,4	-
800	8,06	-	72	-	69	-	64	-	61	-	34	-	31	-	24,7	-
900	8,62	-	70	-	67	-	62	-	59	-	11	-	8	-	24,4	-

* EN 50288-4-2(2004)/IEC 61156-6(2002)

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Chemical characteristics:

Free of hazardous substances acc. to RoHS
2002/95/EG

Thermal characteristics:

Temperature range for fixed installation
Temperature range for mobile operation

-20°C up to +60°C
0°C up to +50°C

Certificates and Approvals

Quality mark with production control
Link performance
Inspection certificate:
In agreement to LVD (73/23/EEC)

Number of registration VDE
LEONI ELine® systems and further commercial cabling systems
acc. to DIN 55350-18-4.2.1 respectively EN 10204
\$CE Logo\$

Article Number:	Size:	Overall diameter (mm):	Weight (kg/km):	Copper content (kg/km):	Colour sheath:
7KS70015	4P	5,7 (approx.)	34 (approx.)	17	yellow, RAL-1021

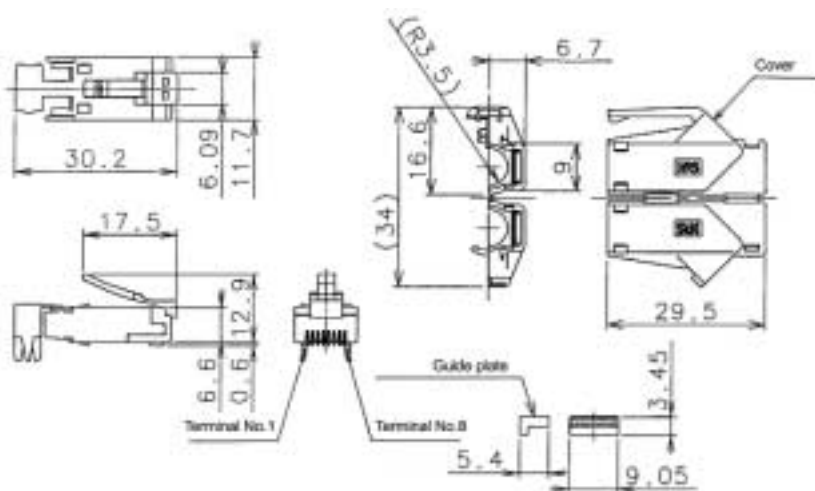
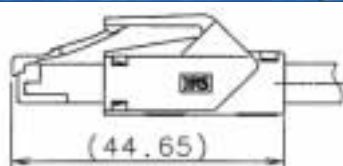
Package: Drum 1000m

TM21 plugs are designed to meet all of the performance requirements of Cat 6 when link tested up to 250 MHz Class E. These shielded RJ45 plugs have a guide plate to assist assembly onto either solid or stranded cables. The hood is available in nine different colours, incorporates latch protection and can be fitted after the plug has been assembled onto the cable.

FEATURES

- Link tested to Cat 6.
- Fully shielded.
- Fold up hood incorporates latch protector.
- Plug can be terminated to solid or stranded cable.
- Guide plate allows easy assembly.
- Hoods available in 9 colours.
- Will accept cables up to 6.6mm dia.
- Hand tool terminates TM21 in one easy operation.

TM21 Plug - TM21P-88P(**)



PART NUMBERS

Part No	CL Code	Colour	Packaging	Note
TM21P-88P	222-2862-9	Light Beige	Pack (1 pack = 300 pcs)	Plug, Cover & Guide Plate
TM21P-88P(02)	222-2862-9-02	Medium Grey	Pack (1 pack = 300 pcs)	Plug, Cover & Guide Plate
TM21P-88P(03)	222-2862-9-03	Black	Pack (1 pack = 300 pcs)	Plug, Cover & Guide Plate
TM21P-88P(04)	222-2862-9-04	Light Grey	Pack (1 pack = 300 pcs)	Plug, Cover & Guide Plate
TM21P-88P(05)	222-2862-9-05	Red	Pack (1 pack = 300 pcs)	Plug, Cover & Guide Plate
TM21P-88P(06)	222-2862-9-06	Green	Pack (1 pack = 300 pcs)	Plug, Cover & Guide Plate
TM21P-88P(07)	222-2862-9-07	Blue	Pack (1 pack = 300 pcs)	Plug, Cover & Guide Plate
TM21P-88P(08)	222-2862-9-08	Yellow	Pack (1 pack = 300 pcs)	Plug, Cover & Guide Plate
TM21P-88P(09)	222-2862-9-09	Orange	Pack (1 pack = 300 pcs)	Plug, Cover & Guide Plate

TM21 plugs, covers and guide plates are also available separately as a packaged item.

IMPORTANT NOTICE: In the interest of development Hirose Electric reserves the right to amend, without notice, details contained within this document. **Please contact your local Hirose sales office for the latest information.**

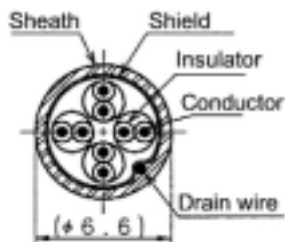




TM21 Series - RJ45 Shielded Plugs



CABLE SPECIFICATIONS



Conductor	ϕ 0.5mm solid wire AWG 24 twisted wire (ϕ 0.2mm x 7) AWG 25 twisted wire (ϕ 0.18mm x 7)
Insulator Outer Dia.	(ϕ 0.9 - 1.0mm)
Drain Wire	AWG 26 (tinned wire)
Seath Outer Dia.	(ϕ 6.6mm)

TECHNICAL DATA

Rating: Current 0.5A
Voltage AC 125V

Ambient Temperature Range: Plug -25°C to +60°C

Item	Standard	Condition
Insulation Resistance	100M Ω or more	Measure with DC 100V
Withstand Voltage	Without flashing, insulation perforation	AC 500V for 1 min
Contact Resistance	230m Ω or less	Measure with 100mA
Vibration Resistance	Without electric breaks of 5 μ sec or longer; contact resistance of 250m Ω or less	10 - 55Hz, half amplitude 0.75mm, 2 hours in 3 directions
Mechanical Shock Resistance	Without electric breaks of 5 μ sec or longer; contact resistance of 250m Ω or less	Acceleration 490m/s ² , duration 11ms, 3 times in 3 directions
Near-End Crosstalk	30.1dB or greater (when measured at the channel link)	Measure properties between each pair with 250MHz
Sampling Lifetime	Contact resistance of 250m Ω or less	200 times
Temperature Cycle	Contact resistance of 250m Ω or less; insulation resistance of 100M Ω or greater	(-55°C: 30 min $\rightarrow$ 5 to 35°C: 5 min $\rightarrow$ 85°C: 30min $\rightarrow$ 5 to 35°C: 5 min) 5 cycles
Humidity Resistance	Contact resistance of 250m Ω or less; insulation resistance of 1M Ω or greater (in humid conditions); insulation resistance 100M Ω or greater (dry conditions)	Kept for 500 hrs in 40°C, 90 to 95% humidity conditions
Salt & Water Spray	Contact resistance of 250m Ω or less	Kept for 48 hrs in a 5% concentration salt water solution

APPLICABLE TOOLING



Handtool

Hirose offers tooling to suite all production volumes. Hand tooling conveniently allows termination on site or in the factory environment, whilst the T12 press & applicator only requires mains electricity and lends itself to high volume production in the factory. Both tools terminate the plugs in one operation and come with all the parts needed to allow conversion to terminate Hirose TM11 (Cat 5E) plugs.

Applicator



T12 Press



For the latest information and availability please contact your local sales office.

Hirose Electric UK Ltd

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