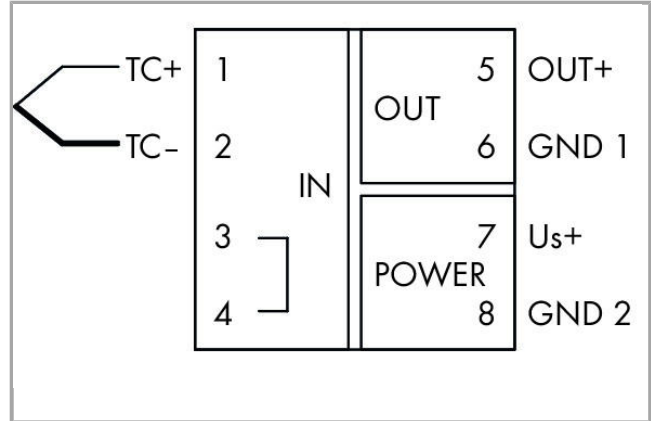
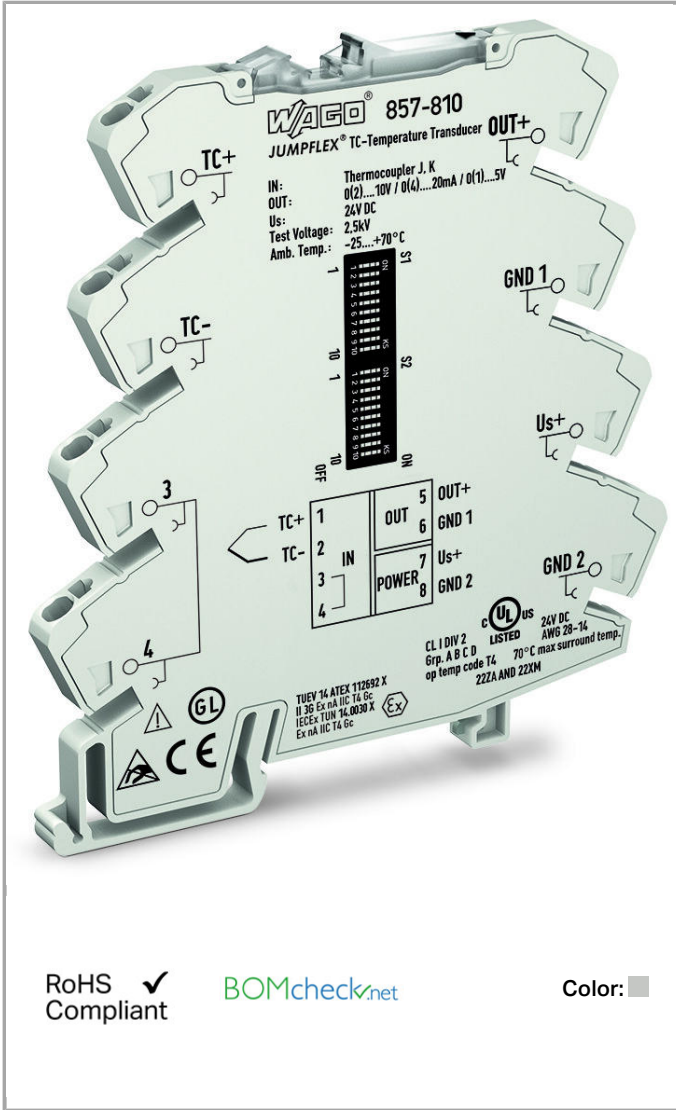


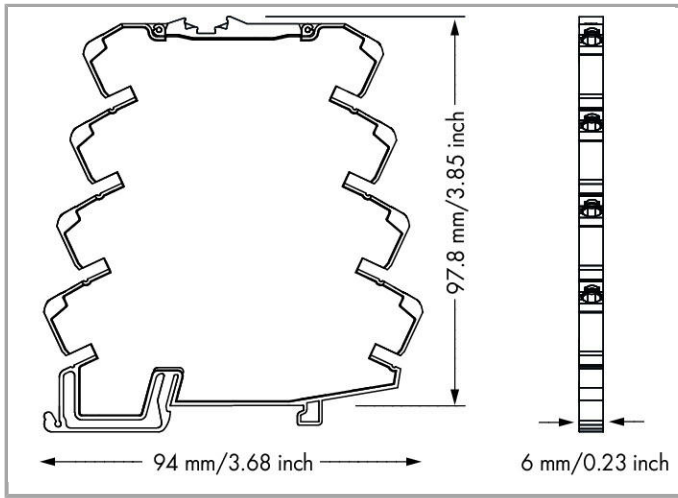
Data sheet | Item number: 857-810

Temperature signal conditioner for thermocouples; Current and voltage output signal; Configuration via DIP switch; Supply voltage: 24 VDC; 6 mm module width



857-810





857-810
DIP Switch Adjustability

• = ON Default

DIP Switch S1

Cold Junction Compensation	Sensor type	Output signal	Measurement Range Underflow	Measurement Range Overflow	Wire Break
1 on	2 J	4 0...20 mA	7 Lower limit of output range -5 %*	8 Upper limit of output range +2.5 %*	Upper limit of output range +5 %*
• off	• K	• 4...20 mA	• Lower limit of output range	• Upper limit of output range +2.5 %	• Upper limit of output range +5 %
		• 2...10 mA			
		• 0...10 V			
		• 2...10 V			
		• 0...5 V			
		• 1...5 V			

DIP 9 and 10 n.c.

DIP Switch S2

Start Temperature										End Temperature												
1	2	3	4	°C	°F	5	6	7	8	9	10	°C	°F	5	6	7	8	9	10	°C	°F	
				0	-32							1000	1832									
•				-200	-328	•						•	225	437						•	625	1157
•				-175	-283	•						•	250	482	•					•	650	1202
•				-150	-263	•						•	275	527	•					•	675	1247
•				-125	-193	•						•	300	572	•					•	700	1292
•				-100	-148	•						•	325	617	•					•	725	1337
•				-90	-130	•						•	350	662	•					•	750	1382
•				-80	-112	•						•	375	707	•					•	775	1427
•				-70	-94	•						•	400	752	•					•	800	1472
•				-60	-76	•						•	425	797	•					•	825	1517
•				-50	-58	•						•	450	842	•					•	850	1562
•				-40	-40	•						•	475	887	•					•	875	1607
•				-30	-22	•						•	500	932	•					•	900	1652
•				-20	-4	•						•	525	977	•					•	925	1697
•				-10	14	•						•	550	1022	•					•	950	1742
•				0	32	•						•	575	1067	•					•	975	1787
•						•						•	600	1112	•					•	1000	1832
•						•						•	625	1157	•					•	1025	1877
•						•						•	650	1202	•					•	1050	1922
•						•						•	675	1247	•					•	1075	1967
•						•						•	700	1292	•					•	1100	2012
•						•						•	725	1337	•					•	1125	2057
•						•						•	750	1382	•					•	1150	2102
•						•						•	775	1427	•					•	1175	2147
•						•						•	800	1472	•					•	1200	2192
•						•						•	825	1517	•					•	1225	2237
•						•						•	850	1562	•					•	1250	2282
•						•						•	875	1607	•					•	1275	2327
•						•						•	900	1652	•					•	1300	2372
•						•						•	925	1697	•					•	1325	2417
•						•						•	950	1742	•					•	1350	2462
•						•						•	975	1787	•					•	1375	2507
•						•						•	1000	1832	•					•	1400	2552

* acc. to NAMUR NE 43

The minimum distance from the start temperature to the end temperature may not fall short of 100K degrees on the Celsius (C) scale or 212K degrees on the Fahrenheit (F) scale.

Item description

Short description:

This temperature signal conditioner records signals from type J and K thermocouples and converts the temperature signal into a standard analog signal on the output side.

Features:

- For type J and K thermocouples
- Cold junction compensation (on/off)
- Switching between measurement ranges is calibrated
- Detect sensor's wire break
- Detect measurement range underflow/measurement range overflow
- Integrate a switchable clipping function to limit the standard analog signal to the upper range values
- Safe 3-way isolation with 2.5 kV test voltage per EN 61140

Data

Technical Data

Configuration

Configuration options

DIP switches

Input

Input signal type

TC sensors

Input – TC sensors

Sensor types (TC)

Type J
Type K

Measurement range temperature (TC)

-150 ... 1200 °C (Type J); -150 ... 1350 °C (Type K)

Min. measuring span (TC)	100 K
Cold junction compensation	On/Off (Default: On)
Cold junction error	3 K (typ. 2 K)

Output

Output signal type	Current Voltage
Output signal voltage	0 ... 5 V; 1 ... 5 V; 0 ... 10 V; 2 ... 10 V
Output signal current	0 ... 10 mA; 2 ... 10 mA; 0 ... 20 mA; 4 ... 20 mA
Load impedance (output/voltage)	$\geq 2 \text{ k}\Omega$
Load impedance (output/current)	$\leq 600 \Omega$

Signal processing

Step response typ.	60 ms (cold junction compensation off); 120 ms (cold junction compensation on)
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Measurement error

Transmission error typ.	$\leq 0.1 \%$ at max. measuring span (Type J, K)
Transmission error of set measurement range	$\leq (150 \text{ K}/\text{set measurement range [K]}) \%$
Temperature coefficient	$\leq 0.04 \%/K$

Power supply

Type of power supply	24 VDC
Nominal supply voltage U_S	DC 24 V
Supply voltage range	$\pm 30 \%$
Current consumption at supply voltage	$\leq 40 \text{ mA}$

Safety and protection:

Test voltage (input/output/supply)	AC 2.5 kV; 50 Hz; 1 min
Protection class	IP20

Connection data

Connection technology	Push-in CAGE CLAMP®
Solid conductor	0.08 ... 2.5 mm ² / 28 ... 14 AWG
Fine-stranded conductor	0.34 ... 2.5 mm ² / 22 ... 14 AWG
Strip length	9 ... 10 mm / 0.35 ... 0.39 inch

Geometrical Data

Width	6 mm / 0.236 inch
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Height from upper-edge of DIN-35 rail	97.8 mm / 3.85 inch
Depth	94 mm / 3.701 inch

Mechanical data

Type of mounting	DIN-35 rail
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Material Data

Color	light gray
Fire load	0 MJ
Weight	35.5 g

Environmental Requirements

Surrounding air (operating) temperature	-25 ... 70 °C
Surrounding air (storage) temperature	-40 ... 85 °C

Standards and specifications


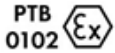
Conformity marking	1
EMC immunity to interference	EN 61000-6-2
EMC emission of interference	EN 61000-6-4

Commercial data

Product Group	6 (Interface Electronics)
Country of origin	DE
GTIN	4045454470135
Customs Tariff No.	85437090300





Approvals / Certificates

Ex-Approvals


Logo	Approval	Additional Approval Text	Certificate name
	IECEX TUEV Nord Cert GmbH	IEC 60079-0	IECEX_TUN_14.0030_X
	IECEX TUEV Nord Cert GmbH	EN 60079-0	TÜV_14_ATEX_112692_X

Ship Approvals

Logo	Approval	Additional Approval Text	Certificate name
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	BV Bureau Veritas S.A.	-	40179_A0
	DNV GL Det Norske Veritas, Germanischer Lloyd	-	TAA00001D1
	NK Nippon Kaiji Kyokai	-	TA17255M
	PRS Polski Rejestr Statków	-	TE/2186 /880590/18

UL-Approvals


Logo	Approval	Additional Approval Text	Certificate name
	UL UL International Netherlands B.V. (ORDINARY LOCATIONS)	UL 508	E175199 Sec.4

Compatible products


General accessories

	Item no.: 857-979 Supply and through module	857-979
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power supply

	Item no.: 787-2852 Switched-mode power supply; for JUMPFLEX® Signal Conditioners; 1-phase; 24 VDC output voltage; 1 A output current	787-2852
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tools

	Item no.: 210-720 Operating tool with partially insulated shaft; Type 2, blade (3.5 x 0.5) mm	210-720
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transfer module

















	Item no.: 857-980 Interface adapter; 16-pole; analog	857-980
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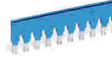








assembling
















	Item no.: 249-116 Screwless end stop; 6 mm wide; for DIN-rail 35 x 15 and 35 x 7.5	249-116
	Item no.: 249-117 Screwless end stop; 10 mm wide; for DIN-rail 35 x 15 and 35 x 7.5	249-117
	Item no.: 249-197 Screwless end stop; 14 mm wide; for DIN-rail 35 x 15 and 35 x 7.5	249-197
















Jumper
















	Item no.: 281-482 Comb-style jumper bar; insulated; 2-way; IN = IN terminal block	281-482
	Item no.: 859-402 Push-in type jumper bar; 2-way; Nominal current 18 A; insulated	859-402
	Item no.: 859-402/000-005 Push-in type jumper bar; 2-way; Nominal current 18 A; insulated	859-402 /000-005
	Item no.: 859-402/000-006 Push-in type jumper bar; 2-way; Nominal current 18 A; insulated	859-402 /000-006
	Item no.: 859-402/000-029 Push-in type jumper bar; 2-way; Nominal current 18 A; insulated	859-402 /000-029
	Item no.: 859-403 Push-in type jumper bar; 3-way; Nominal current 18 A; insulated	859-403
	Item no.: 859-403/000-005 Push-in type jumper bar; 3-way; Nominal current 18 A; insulated	859-403 /000-005
	Item no.: 859-403/000-006 Push-in type jumper bar; 3-way; Nominal current 18 A; insulated	859-403 /000-006
	Item no.: 859-403/000-029 Push-in type jumper bar; 3-way; Nominal current 18 A; insulated	859-403 /000-029
	Item no.: 859-404 Push-in type jumper bar; 4-way; Nominal current 18 A; insulated	859-404
	Item no.: 859-404/000-005 Push-in type jumper bar; 4-way; Nominal current 18 A; insulated	859-404 /000-005
	Item no.: 859-404/000-006 Push-in type jumper bar; 4-way; Nominal current 18 A; insulated	859-404 /000-006
	Item no.: 859-404/000-029 Push-in type jumper bar; 4-way; Nominal current 18 A; insulated	859-404 /000-029
















	Item no.: 859-405 Push-in type jumper bar; 5-way; Nominal current 18 A; insulated		859-405
	Item no.: 859-405/000-005 Push-in type jumper bar; 5-way; Nominal current 18 A; insulated	/000-005	859-405
	Item no.: 859-405/000-006 Push-in type jumper bar; 5-way; Nominal current 18 A; insulated	/000-006	859-405
	Item no.: 859-405/000-029 Push-in type jumper bar; 5-way; Nominal current 18 A; insulated	/000-029	859-405
	Item no.: 859-406 Push-in type jumper bar; 6-way; Nominal current 18 A; insulated		859-406
	Item no.: 859-406/000-005 Push-in type jumper bar; 6-way; Nominal current 18 A; insulated	/000-005	859-406
	Item no.: 859-406/000-006 Push-in type jumper bar; 6-way; Nominal current 18 A; insulated	/000-006	859-406
	Item no.: 859-406/000-029 Push-in type jumper bar; 6-way; Nominal current 18 A; insulated	/000-029	859-406
	Item no.: 859-407 Push-in type jumper bar; 7-way; Nominal current 18 A; insulated		859-407
	Item no.: 859-407/000-005 Push-in type jumper bar; 7-way; Nominal current 18 A; insulated	/000-005	859-407
	Item no.: 859-407/000-006 Push-in type jumper bar; 7-way; Nominal current 18 A; insulated	/000-006	859-407
	Item no.: 859-407/000-029 Push-in type jumper bar; 7-way; Nominal current 18 A; insulated	/000-029	859-407
	Item no.: 859-408 Push-in type jumper bar; 8-way; Nominal current 18 A; insulated		859-408
	Item no.: 859-408/000-005 Push-in type jumper bar; 8-way; Nominal current 18 A; insulated	/000-005	859-408
	Item no.: 859-408/000-006 Push-in type jumper bar; 8-way; Nominal current 18 A; insulated	/000-006	859-408
	Item no.: 859-408/000-029 Push-in type jumper bar; 8-way; Nominal current 18 A; insulated	/000-029	859-408






	Item no.: 859-409 Push-in type jumper bar; 9-way; Nominal current 18 A; insulated	859-409
	Item no.: 859-409/000-005 Push-in type jumper bar; 9-way; Nominal current 18 A; insulated	859-409 /000-005
	Item no.: 859-409/000-006 Push-in type jumper bar; 9-way; Nominal current 18 A; insulated	859-409 /000-006
	Item no.: 859-409/000-029 Push-in type jumper bar; 9-way; Nominal current 18 A; insulated	859-409 /000-029
	Item no.: 859-410 Push-in type jumper bar; 10-way; Nominal current 18 A; insulated	859-410
	Item no.: 859-410/000-005 Push-in type jumper bar; 10-way; Nominal current 18 A; insulated	859-410 /000-005
	Item no.: 859-410/000-006 Push-in type jumper bar; 10-way; Nominal current 18 A; insulated	859-410 /000-006
	Item no.: 859-410/000-029 Push-in type jumper bar; 10-way; Nominal current 18 A; insulated	859-410 /000-029
Marking accessories		
	Item no.: 2009-110 Marking strips; on reel; not stretchable; plain; snap-on type	2009-110
	Item no.: 2009-115 WMB-Inline; for Smart Printer; on reel; stretchable 5 - 5.2 mm; plain; snap-on type	2009-115
	Item no.: 2009-115/000-002 WMB-Inline; for Smart Printer; on reel; stretchable 5 - 5.2 mm; plain; snap-on type	2009-115 /000-002
	Item no.: 2009-115/000-006 WMB-Inline; for smartPRINTER; on reel; stretchable 5 - 5.2 mm; plain; snap-on type	2009-115 /000-006
	Item no.: 2009-115/000-007 WMB-Inline; for Smart Printer; on reel; stretchable 5 - 5.2 mm; plain; snap-on type	2009-115 /000-007
	Item no.: 2009-115/000-012 WMB-Inline; for smartPRINTER; on reel; stretchable 5 - 5.2 mm; plain; snap-on type	2009-115 /000-012
	Item no.: 2009-115/000-017 WMB-Inline; for Smart Printer; on reel; stretchable 5 - 5.2 mm; plain; snap-on type	2009-115 /000-017

	Item no.: 2009-115/000-023 WMB-Inline; for Smart Printer; on reel; stretchable 5 - 5.2 mm; plain; snap-on type	/000-023	2009-115
	Item no.: 2009-115/000-024 WMB-Inline; for smartPRINTER; on reel; stretchable 5 - 5.2 mm; plain; snap-on type	/000-024	2009-115
	Item no.: 793-501 WMB marking card; as card; not stretchable; plain; snap-on type		793-501
	Item no.: 793-501/000-002 WMB marking card; as card; not stretchable; plain; snap-on type	/000-002	793-501
	Item no.: 793-501/000-005 WMB marking card; as card; not stretchable; plain; snap-on type	/000-005	793-501
	Item no.: 793-501/000-006 WMB marking card; as card; not stretchable; plain; snap-on type	/000-006	793-501
	Item no.: 793-501/000-007 WMB marking card; as card; not stretchable; plain; snap-on type	/000-007	793-501
	Item no.: 793-501/000-012 WMB marking card; as card; not stretchable; plain; snap-on type	/000-012	793-501
	Item no.: 793-501/000-017 WMB marking card; as card; not stretchable; plain; snap-on type	/000-017	793-501
	Item no.: 793-501/000-023 WMB marking card; as card; not stretchable; plain; snap-on type	/000-023	793-501
	Item no.: 793-501/000-024 WMB marking card; as card; not stretchable; plain; snap-on type	/000-024	793-501
	Item no.: 793-502 WMB marking card; as card; MARKED; 1 ... 10 (10x); not stretchable; Horizontal marking; snap-on type		793-502
	Item no.: 793-502/000-002 WMB marking card; as card; MARKED; 1 ... 10 (10x); not stretchable; Horizontal marking; snap-on type	/000-002	793-502
	Item no.: 793-502/000-005 WMB marking card; as card; MARKED; 1 ... 10 (10x); not stretchable; Horizontal marking; snap-on type	/000-005	793-502
	Item no.: 793-502/000-006 WMB marking card; as card; MARKED; 1 ... 10 (10x); not stretchable; Horizontal marking; snap-on type	/000-006	793-502

	Item no.: 793-502/000-007 WMB marking card; as card; MARKED; 1 ... 10 (10x); not stretchable; Horizontal marking; snap-on type	793-502 /000-007
	Item no.: 793-502/000-012 WMB marking card; as card; MARKED; 1 ... 10 (10x); not stretchable; Horizontal marking; snap-on type	793-502 /000-012
	Item no.: 793-502/000-017 WMB marking card; as card; MARKED; 1 ... 10 (10x); not stretchable; Horizontal marking; snap-on type	793-502 /000-017
	Item no.: 793-502/000-023 WMB marking card; as card; MARKED; 1 ... 10 (10x); not stretchable; Horizontal marking; snap-on type	793-502 /000-023
	Item no.: 793-502/000-024 WMB marking card; as card; MARKED; 1 ... 10 (10x); not stretchable; Horizontal marking; snap-on type	793-502 /000-024
	Item no.: 793-503 WMB marking card; as card; MARKED; 11 ... 20 (10x); not stretchable; Horizontal marking; snap-on type	793-503
	Item no.: 793-503/000-002 WMB marking card; as card; MARKED; 11 ... 20 (10x); not stretchable; Horizontal marking; snap-on type	793-503 /000-002
	Item no.: 793-503/000-005 WMB marking card; as card; MARKED; 11 ... 20 (10x); not stretchable; Horizontal marking; snap-on type	793-503 /000-005
	Item no.: 793-503/000-006 WMB marking card; as card; MARKED; 11 ... 20 (10x); not stretchable; Horizontal marking; snap-on type	793-503 /000-006
	Item no.: 793-503/000-007 WMB marking card; as card; MARKED; 11 ... 20 (10x); not stretchable; Horizontal marking; snap-on type	793-503 /000-007
	Item no.: 793-503/000-012 WMB marking card; as card; MARKED; 11 ... 20 (10x); not stretchable; Horizontal marking; snap-on type	793-503 /000-012
	Item no.: 793-503/000-017 WMB marking card; as card; MARKED; 11 ... 20 (10x); not stretchable; Horizontal marking; snap-on type	793-503 /000-017
	Item no.: 793-503/000-023 WMB marking card; as card; MARKED; 11 ... 20 (10x); not stretchable; Horizontal marking; snap-on type	793-503 /000-023
	Item no.: 793-503/000-024 WMB marking card; as card; MARKED; 11 ... 20 (10x); not stretchable; Horizontal marking; snap-on type	793-503 /000-024
	Item no.: 793-504 WMB marking card; as card; MARKED; 21 ... 30 (10x); not stretchable; Horizontal marking; snap-on type	793-504

	Item no.: 793-504/000-002 WMB marking card; as card; MARKED; 21 ... 30 (10x); not stretchable; Horizontal marking; snap-on type / 000-002	793-504
	Item no.: 793-504/000-005 WMB marking card; as card; MARKED; 21 ... 30 (10x); not stretchable; Horizontal marking; snap-on type / 000-005	793-504
	Item no.: 793-504/000-006 WMB marking card; as card; MARKED; 21 ... 30 (10x); not stretchable; Horizontal marking; snap-on type / 000-006	793-504
	Item no.: 793-504/000-012 WMB marking card; as card; MARKED; 21 ... 30 (10x); not stretchable; Horizontal marking; snap-on type / 000-012	793-504
	Item no.: 793-504/000-017 WMB marking card; as card; MARKED; 21 ... 30 (10x); not stretchable; Horizontal marking; snap-on type / 000-017	793-504
	Item no.: 793-504/000-023 WMB marking card; as card; MARKED; 21 ... 30 (10x); not stretchable; Horizontal marking; snap-on type / 000-023	793-504
	Item no.: 793-505 WMB marking card; as card; MARKED; 31 ... 40 (10x); not stretchable; Horizontal marking; snap-on type	793-505
	Item no.: 793-505/000-005 WMB marking card; as card; MARKED; 31 ... 40 (10x); not stretchable; Horizontal marking; snap-on type / 000-005	793-505
	Item no.: 793-505/000-006 WMB marking card; as card; MARKED; 31 ... 40 (10x); not stretchable; Horizontal marking; snap-on type / 000-006	793-505
	Item no.: 793-505/000-007 WMB marking card; as card; MARKED; 31 ... 40 (10x); not stretchable; Horizontal marking; snap-on type / 000-007	793-505
	Item no.: 793-505/000-012 WMB marking card; as card; MARKED; 31 ... 40 (10x); not stretchable; Horizontal marking; snap-on type / 000-012	793-505
	Item no.: 793-506 WMB marking card; as card; MARKED; 41 ... 50 (10x); not stretchable; Horizontal marking; snap-on type	793-506
	Item no.: 793-506/000-005 WMB marking card; as card; MARKED; 41 ... 50 (10x); not stretchable; Horizontal marking; snap-on type / 000-005	793-506
	Item no.: 793-506/000-006 WMB marking card; as card; MARKED; 41 ... 50 (10x); not stretchable; Horizontal marking; snap-on type / 000-006	793-506
	Item no.: 793-506/000-012 WMB marking card; as card; MARKED; 41 ... 50 (10x); not stretchable; Horizontal marking; snap-on type / 000-012	793-506

	Item no.: 793-506/000-017 WMB marking card; as card; MARKED; 41 ... 50 (10x); not stretchable; Horizontal marking; snap-on type	793-506
		/000-017
	Item no.: 793-5501 WMB marking card; as card; for terminal block width 5 - 17.5 mm; stretchable 5 - 5.2 mm; plain; snap-on type	793-5501
	Item no.: 793-5501/000-002 WMB marking card; as card; for terminal block width 5 - 17.5 mm; stretchable 5 - 5.2 mm; plain; snap-on type	793-5501
		/000-002
	Item no.: 793-5501/000-005 WMB marking card; as card; stretchable 5 - 5.2 mm; plain; snap-on type	793-5501
		/000-005
	Item no.: 793-5501/000-006 WMB marking card; as card; stretchable 5 - 5.2 mm; plain; snap-on type	793-5501
		/000-006
	Item no.: 793-5501/000-007 WMB marking card; as card; stretchable 5 - 5.2 mm; plain; snap-on type	793-5501
		/000-007
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		/000-012
	Item no.: 793-5501/000-014 WMB marking card; as card; stretchable 5 - 5.2 mm; plain; snap-on type	793-5501
		/000-014
	Item no.: 793-5501/000-017 WMB marking card; as card; stretchable 5 - 5.2 mm; plain; snap-on type	793-5501
		/000-017
	Item no.: 793-5501/000-023 WMB marking card; as card; stretchable 5 - 5.2 mm; plain; snap-on type	793-5501
		/000-023
	Item no.: 793-5501/000-024 WMB marking card; as card; stretchable 5 - 5.2 mm; plain; snap-on type	793-5501
		/000-024
	Item no.: 793-566 WMB marking card; as card; MARKED; 1 ... 50 (2x); not stretchable; Horizontal marking; snap-on type	793-566
	Item no.: 793-566/000-002 WMB marking card; as card; MARKED; 1 ... 50 (2x); not stretchable; Horizontal marking; snap-on type	793-566
		/000-002
	Item no.: 793-566/000-005 WMB marking card; as card; MARKED; 1 ... 50 (2x); not stretchable; Horizontal marking; snap-on type	793-566
		/000-005
	Item no.: 793-566/000-006 WMB marking card; as card; MARKED; 1 ... 50 (2x); not stretchable; Horizontal marking; snap-on type	793-566
		/000-006

	Item no.: 793-566/000-007 WMB marking card; as card; MARKED; 1 ... 50 (2x); not stretchable; Horizontal marking; snap-on type	/000-007	793-566
	Item no.: 793-566/000-012 WMB marking card; as card; MARKED; 1 ... 50 (2x); not stretchable; Horizontal marking; snap-on type	/000-012	793-566
	Item no.: 793-566/000-017 WMB marking card; as card; MARKED; 1 ... 50 (2x); not stretchable; Horizontal marking; snap-on type	/000-017	793-566
	Item no.: 793-566/000-023 WMB marking card; as card; MARKED; 1 ... 50 (2x); not stretchable; Horizontal marking; snap-on type	/000-023	793-566
	Item no.: 793-566/000-024 WMB marking card; as card; MARKED; 1 ... 50 (2x); not stretchable; Horizontal marking; snap-on type	/000-024	793-566

Downloads

Documentation

Bid Text

857-810 Temperaturmessumformer	Mar 9, 2016	doc 31.2 kB	Download
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Instruction Leaflet

Measurement Transducer and Isolation Amplifier Temperature transducer Thermocouples Typ J, K DIP switch		pdf 2.4 MB	Download
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Additional Information

Disposal; Electrical and electronic equipment, Packaging	V 1.0.0	pdf 265.8 kB	Download
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CAD/CAE - Smart Data

CAD data

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Step file 857-08xx Series	1.0 Jun 30, 2011	STP 348.4 kB	Download



Subject to changes.
