

# INSTRUMENTATION CABLE

## Applications

The instrumentation cables described in this catalogue are manufactured strictly based on the requirement of EN50288 as well as relevant Australian Standards. Instrumentation cables are mainly used in data processing and process control i.e. electrical measuring device to instrument panel. Instrument to instrument connection, and electrical sensing device to control cabinets. It can be used also for general transmission of electrical signals in any systems of remote control, indication, telemetering, monitoring and analysis which it needs to be protected from interference to the transmission signal by other electrical circuits. Instrumentation cable with the identification colour blue is specified for intrinsically safe circuits use.

## Cable configuration

<b>Conductor</b>	Plain annealed copper (class 2 strands) of the type specified in AS/NZS 1125.
<b>Insulation</b>	V90 PVC complying to AS/NZS3808
<b>Laying-up core</b>	Twisted to pair or triple with optimum pitch to minimise the cross talk.
<b>Core identification</b>	Pair element: Black, White, and all cores numbered Triple element: Black, White, Red, and all cores numbered
<b>Overall screened</b>	A stranded tinned annealed copper drain wire (7/0.2mm) is helically applied between the lapping polyester tape and the aluminium foil (100% coverage) for extra protection against external noise and interference (i.e. electrostatic from external high voltages and electromagnetic from external high currents)
<b>Outer sheath</b>	V90 PVC complying to AS/NZS3808
<b>Sheath identification</b>	Black sheath (Ultraviolet - UV stabilised) Blue sheath - instrumentation cable for intrinsically safe circuits
<b>Operating temperature</b>	Minimum conductor continuous operating temperature: -20°C Maximum conductor operating temperature: 90°C

## Electrical Properties

<b>Rated Voltage:</b>	Max. 110/150V	
<b>Inductance</b>	0.5SQMM:	1.1mH/km @1KHz
	1.5SQMM:	0.95mH/km @1KHz
<b>Capacitance</b>	0.5SQMM:	0.145uF/km @1KHz
	1.5SQMM:	0.20uF/km @1KHz
<b>L/R ratio</b>	0.5SQMM:	0.0157mH/Ω
	1.5SQMM:	0.0365mH/Ω
<b>Insulation Resistance</b>	140MΩ.km @ 20°C	
<b>Conductor Resistance</b>	0.5SQMM	38.4Ω/km @ 20°C
	1.5SQMM	13.6Ω/km @ 20°C

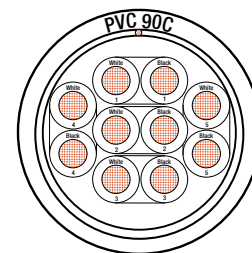
Flame retardant PVC is tested to standard IEC 60332-1

## Mechanical Properties

The recommended bending radius is as follows:

Unarmoured Cable:	12 x Cable Outer Diameter (during installation)
	6 x Cable Outer Diameter (after installation)
Armoured Cable:	18 x Cable Outer Diameter (during installation)
	12 x Cable Outer Diameter (after installation)

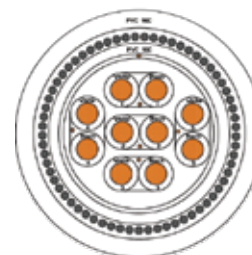
## Individual & Overall Screened, Pairs



Nominal Area mm <sup>2</sup> (AWG)	Part Number	No of Pairs	Outer Ø ca. mm	Weight kg/km
0.5 (20)	TA12.05.02.02	2	8.3	79
(7/0.30mm)	TA12.05.03.02	3	8.8	98
	TA12.05.04.02	4	9.5	119
	TA12.05.06.02	6	11.2	161
	TA12.05.08.02	8	12.5	200
	TA12.05.10.02	10	14.5	255
	TA12.05.12.02	12	15.3	304
	TA12.05.16.02	16	17.1	381
	TA12.05.18.02	18	17.9	428
	TA12.05.20.02	20	18.9	468
	TA12.05.24.02	24	21.2	567
	TA12.05.36.02	36	24.4	809
	TA12.05.50.02	50	27.7	1068

Nominal Area mm <sup>2</sup> (AWG)	Part Number	No of Pairs	Outer Ø ca. mm	Weight kg/km
1.5 (16)	TA12.15.02.02	2	10.2	127
(7/0.50mm)	TA12.15.03.02	3	10.9	165
	TA12.15.04.02	4	12.1	211
	TA12.15.06.02	6	14.3	294
	TA12.15.08.02	8	16.2	382
	TA12.15.10.02	10	18.7	482
	TA12.15.12.02	12	19.3	556
	TA12.15.16.02	16	21.6	719
	TA12.15.18.02	18	22.7	798
	TA12.15.20.02	20	24.4	899
	TA12.15.24.02	24	26.9	1060
	TA12.15.36.02	36	31.2	1537
	TA12.15.50.02	50	36	2096

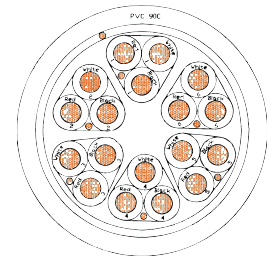
## Individual & Overall Screened, Armoured Pairs



Nominal Area mm <sup>2</sup> (AWG)	Part Number	No of Pairs	Outer Ø ca. mm	Weight kg/km
0.5 (20)	TA13.05.02.02	2	13.49	277
(7/0.30mm)	TA13.05.04.02	4	14.72	334
	TA13.05.06.02	6	17.33	481
	TA13.05.08.02	8	18.66	555
	TA13.05.10.02	10	20.28	630
	TA13.05.12.02	12	21.55	691
	TA13.05.16.02	16	23.84	885
	TA13.05.20.02	20	25.89	1026
	TA13.05.24.02	24	28.66	1297
	TA13.05.36.02	36	31.61	1619
	TA13.05.50.02	50	35.19	2021

Nominal Area mm <sup>2</sup> (AWG)	Part Number	No of Pairs	Outer Ø ca. mm	Weight kg/km
1.5 (16)	TA13.15.02.02	2	16.51	435
(7/0.50mm)	TA13.15.04.02	4	18.75	548
	TA13.15.06.02	6	21.01	682
	TA13.15.08.02	8	23.47	887
	TA13.15.10.02	10	25.62	1039
	TA13.15.12.02	12	26.64	1125
	TA13.15.16.02	16	29.15	1395
	TA13.15.20.02	20	32.21	1647
	TA13.15.24.02	24	35.22	1971
	TA13.15.36.02	36	39.13	2540
	TA13.15.50.02	50	44.02	3319
	TA12.05.36.02	36	24.4	809
	TA12.05.50.02	50	27.7	1068

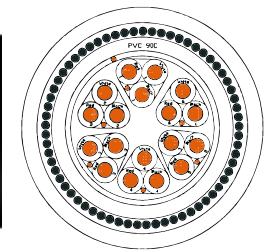
## Individual & Overall Screened, Triads



Nominal Area mm <sup>2</sup> (AWG)	Part Number	No of Triads	Outer Ø ca. mm	Weight kg/km
0.5 (20)	TA16.05.02.03	2	10	117
(7/0.30mm)	TA16.05.04.03	4	11.4	177
	TA16.05.06.03	6	13.5	243
	TA16.05.08.03	8	15	306
	TA16.05.10.03	10	16.9	372
	TA16.05.12.03	12	17.5	425
	TA16.05.16.03	16	19.4	539
	TA16.05.18.03	18	20.4	598
	TA16.05.20.03	20	21.6	658
	TA16.05.24.03	24	23.9	781
	TA16.05.36.03	36	27.4	1106

Nominal Area mm <sup>2</sup> (AWG)	Part Number	No of Triads	Outer Ø ca. mm	Weight kg/km
1.5 (16)	TA16.15.02.03	2	12.2	193
(7/0.50mm)	TA16.15.04.03	4	14.1	314
	TA16.15.06.03	6	16.8	444
	TA16.15.08.03	8	18.8	569
	TA16.15.10.03	10	21.4	701
	TA16.15.12.03	12	22.1	812
	TA16.15.16.03	16	24.6	1048
	TA16.15.18.03	18	25.9	1168
	TA16.15.20.03	20	27.5	1291
	TA16.15.24.03	24	30.5	1539
	TA16.15.36.03	36	35.1	2222

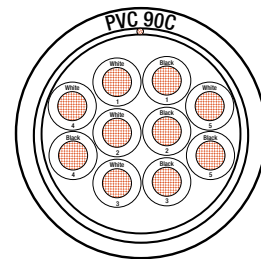
## Individual & Overall Screened, Armoured, Triads



Nominal Area mm <sup>2</sup> (AWG)	Part Number	No of Triads	Outer Ø ca. mm	Weight kg/km
0.5 (20)	TA17.05.02.03	2	14.3	117
(7/0.30mm)	TA17.05.03.03	3	15.02	177
	TA17.05.04.03	4	16.46	177
	TA17.05.06.03	6	18.95	243
	TA17.05.08.03	8	21.21	306
	TA17.05.10.03	10	23.4	372
	TA17.05.12.03	12	25.12	425
	TA17.05.16.03	16	26.87	539
	TA17.05.20.03	20	28.92	658
	TA17.05.24.03	24	32.5	781
	TA17.05.36.03	36	36.15	1106

Nominal Area mm <sup>2</sup> (AWG)	Part Number	No of Triads	Outer Ø ca. mm	Weight kg/km
1.5 (16)	TA17.15.02.03	2	16.7	415
(7/0.50mm)	TA17.15.03.03	3	18.55	567
	TA17.15.04.03	4	19.67	561
	TA17.15.06.03	6	23.65	933
	TA17.15.08.03	8	25.18	1044
	TA17.15.10.03	10	27.53	1216
	TA17.15.12.03	12	29.42	1447
	TA17.15.16.03	16	32.33	1725
	TA17.15.20.03	20	35.03	2020
	TA17.15.24.03	24	39.1	2615
	TA17.15.36.03	36	43.78	3861

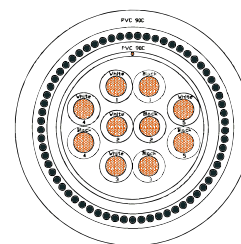
## Overall Screened, Pairs



Nominal Area mm <sup>2</sup> (AWG)	Part Number	No of Pairs	Outer Ø ca. mm	Weight kg/km
0.5 (20)	TA10.05.01.02	1	5.71	41
(7/0.30mm)	TA10.05.02.02	2	7.25	60
	TA10.05.03.02	3	7.67	75
	TA10.05.04.02	4	8.35	91
	TA10.05.06.02	6	10.07	128
	TA10.05.08.02	8	11.45	165
	TA10.05.10.02	10	13.30	211
	TA10.05.12.02	12	13.72	239
	TA10.05.16.02	16	15.93	329
	TA10.05.18.02	18	16.72	361
	TA10.05.20.02	20	17.99	410
	TA10.05.24.02	24	19.74	478
	TA10.05.36.02	36	22.77	677
	TA10.05.50.02	50	25.79	887
1.00 (18)	TA10.10.01.02	1	5.5	42
(7/0.40mm)	TA10.10.02.02	2	8.2	79
	TA10.10.03.02	3	8.7	104

Nominal Area mm <sup>2</sup> (AWG)	Part Number	No of Pairs	Outer Ø ca. mm	Weight kg/km
1.5 (16)	TA10.15.01.02	1	7.33	70
(7/0.50mm)	TA10.15.02.02	2	9.57	113
	TA10.15.03.02	3	10.14	149
	TA10.15.04.02	4	11.27	190
	TA10.15.06.02	6	13.55	271
	TA10.15.08.02	8	15.36	351
	TA10.15.10.02	10	17.34	427
	TA10.15.12.02	12	17.91	493
	TA10.15.16.02	16	20.04	641
	TA10.15.18.02	18	21.12	711
	TA10.15.20.02	20	22.70	803
	TA10.15.24.02	24	25.10	947
	TA10.15.36.02	36	29.09	1378
	TA10.15.50.02	50	33.21	1852

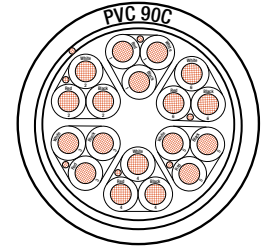
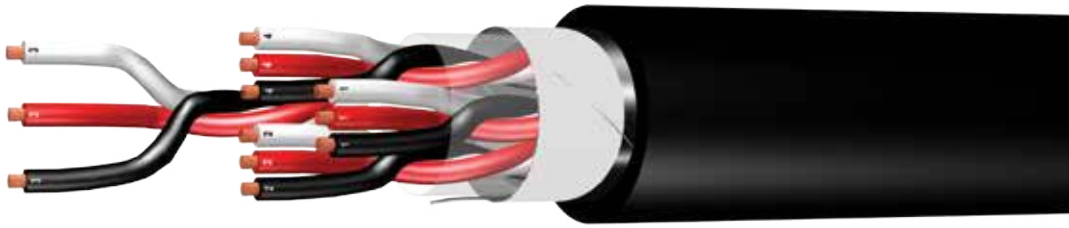
## Overall Screened, Armoured Pairs



Nominal Area mm <sup>2</sup> (AWG)	Part Number	No of Pairs	Outer Ø ca. mm	Weight kg/km
0.5 (20)	TA11.05.01.02	1	10.98	198
(7/0.30mm)	TA11.05.02.02	2	12.85	246
	TA11.05.04.02	4	14.15	304
	TA11.05.06.02	6	15.67	360
	TA11.05.08.02	8	17.05	430
	TA11.05.10.02	10	18.9	534
	TA11.05.12.02	12	19.92	570
	TA11.05.16.02	16	22.33	760
	TA11.05.20.02	20	23.99	899
	TA11.05.24.02	24	25.74	1010
	TA11.05.36.02	36	29.57	1365
	TA11.05.50.02	50	32.59	1658

Nominal Area mm <sup>2</sup> (AWG)	Part Number	No of Pairs	Outer Ø ca. mm	Weight kg/km
1.5 (16)	TA11.15.01.02	1	12.08	238
(7/0.50mm)	TA11.15.02.02	2	14.97	330
	TA11.15.04.02	4	16.87	455
	TA11.15.06.02	6	19.45	623
	TA11.15.08.02	8	21.06	730
	TA11.15.10.02	10	24.34	940
	TA11.15.12.02	12	25.31	1075
	TA11.15.16.02	16	27.64	1282
	TA11.15.20.02	20	29.9	1491
	TA11.15.24.02	24	32.3	1702
	TA11.15.36.02	36	36.29	2497
	TA11.15.50.02	50	40.41	3124

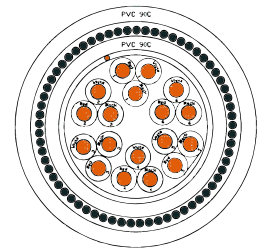
## Overall Screened, Triads



Nominal Area mm <sup>2</sup> (AWG)	Part Number	No of Triads	Outer Ø ca. mm	Weight kg/km
0.5 (20)	TA14.05.01.03	1	5.3	43
(7/0.30mm)	TA14.05.02.03	2	7.9	78
	TA14.05.03.03	3	8.3	100
	TA14.05.04.03	4	9.3	128
	TA14.05.06.03	6	11	176
	TA14.05.08.03	8	12.9	240
	TA14.05.10.03	10	14.5	291
	TA14.05.12.03	12	15	334
	TA14.05.16.03	16	16.6	424
	TA14.05.18.03	18	18.2	502
	TA14.05.20.03	20	19.2	550
	TA14.05.24.03	24	22	686
	TA14.05.36.03	36	24.9	955

Nominal Area mm <sup>2</sup> (AWG)	Part Number	No of Triads	Outer Ø ca. mm	Weight kg/km
1.5 (16)	TA14.15.01.03	1	7	82
(7/0.50mm)	TA14.15.02.03	2	10.3	152
	TA14.15.03.03	3	11	203
	TA14.15.04.03	4	12.2	262
	TA14.15.06.03	6	14.7	378
	TA14.15.08.03	8	16.5	485
	TA14.15.10.03	10	19.5	630
	TA14.15.12.03	12	20.1	730
	TA14.15.16.03	16	23	980
	TA14.15.18.03	18	24.2	1088
	TA14.15.20.03	20	25.5	1196
	TA14.15.24.03	24	28.2	1414
	TA14.15.36.03	36	32.1	2027

## Overall Screened, Armoured, Triads



Nominal Area mm <sup>2</sup> (AWG)	Part Number	No of Triads	Outer Ø ca. mm	Weight kg/km
0.5 (20)	TA15.05.01.03	1	9.63	173
(7/0.30mm)	TA15.05.02.03	2	12.65	242
	TA15.05.03.03	3	13.9	277
	TA15.05.04.03	4	15.04	347
	TA15.05.06.03	6	17.58	449
	TA15.05.08.03	8	18.85	530
	TA15.05.10.03	10	20.2	599
	TA15.05.12.03	12	22.16	756
	TA15.05.16.03	16	23.68	887
	TA15.05.20.03	20	26.26	1083
	TA15.05.24.03	24	28.16	1234
	TA15.05.36.03	36	32.18	1767

Nominal Area mm <sup>2</sup> (AWG)	Part Number	No of Triads	Outer Ø ca. mm	Weight kg/km
1.5 (16)	TA15.15.01.03	1	10.82	224
(7/0.50mm)	TA15.15.02.03	2	14.72	341
	TA15.15.03.03	3	16.34	416
	TA15.15.04.03	4	18.64	559
	TA15.15.06.03	6	21.68	743
	TA15.15.08.03	8	23.42	886
	TA15.15.10.03	10	26.64	1152
	TA15.15.12.03	12	27.26	1266
	TA15.15.16.03	16	29.34	1529
	TA15.15.20.03	20	32.17	2168
	TA15.15.24.03	24	35.96	2604
	TA15.15.36.03	36	40.62	3600