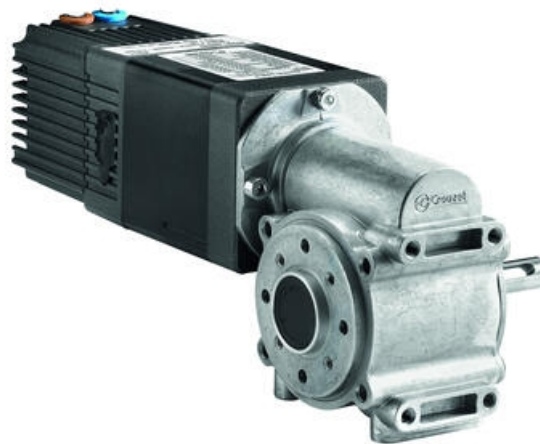


CROUZET - BLDC WORM GEARED MOTOR WITH INTEGRATED TNi21 DRIVE

801410XX TNi21

Worm gearmotor 77W 12-32Vdc 80-800rpm 10Nm max

- 12-32 V dc, 77-133 W, 65-800 rpm, 10 Nm max
- Speed & torque control. Easy use
- Reduce control panel space & cabling
- Long life (>20,000 hours)
- IP65 as standard



PRODUCT DESCRIPTION

The TNi21 integrated drive is ideal for applications where speed and torque control is required.

The long lifetime of the brushless motor (>20,000 hours with rated load) means it is ideal for continuous or long duty applications.

Having the drive integrated into the motor can also save control panel space, reduce cabling and save set-up time.

3 motor sizes available with the same diameter (57mm x 57mm), with increasing motor lengths for more power/torque.

Planetary & worm gearbox options available for reducing the speed & increasing the output torque.

Pre-set I/O mean that the motor can be used immediately without any complex preliminary set-up. It can be controlled via basic switches or by external PLC.

Motor power and logic connections are via cable output or connector options.

The motors are rated to IP65 dust/water protection class as standard.

Options for adaptation to the standard motor include adding an encoder, holding brake, special output shaft, special connectors, upgraded IP protection & special firmware developed according to your specific application requirements.

* Product datasheets & 3D drawing for 0-10Vdc, cable version attached as an example. Further information for PWM version, brake options & connector version available upon request.

Full documentation & user manuals also available upon request.

TECHNICAL DATA

Integrated control	TNi21
IP class	IP65
Length	163 mm
Life span	20,000h
Max. torque	10
Number of pulses per revolution	12
Positioning feedback	Yes
Power	77 W
Ratio	i=5-50:1

Shaft diameter	10 mm
Speed options	80rpm→800rpm
Supply voltage	12 V DC, 24 V DC
Type of gearbox	Worm
Weight	1.65 kg

GEARBOXES FOR DcMind BRUSHLESS RANGE

4 to 120 Nm

- Planetary and worm gearboxes
- Shafts on ball bearings
- Long service life
- IP65



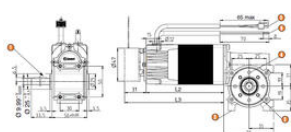
Part numbers

Gearbox	Planetary D 25	Planetary D 32	Planetary D 41	Worm
Type	F10495	F10496	F10497	F10410
Input 1	AWG16 Blue	AWG16 Blue	AWG16 Blue	AWG16 Blue
Input 2	AWG16 Green 17	AWG16 Green 17	AWG16 Green 17	AWG16 Green 17
Input 3	AWG16 Yellow 17	AWG16 Yellow 17	AWG16 Yellow 17	AWG16 Yellow 17
Input 4	AWG16 Orange 16	AWG16 Orange 16	AWG16 Orange 16	AWG16 Orange 16
Input 5	AWG16 Brown 16	AWG16 Brown 16	AWG16 Brown 16	AWG16 Brown 16
Input 6	AWG16 Red 16	AWG16 Red 16	AWG16 Red 16	AWG16 Red 16
Input 7	AWG16 Blue 16	AWG16 Blue 16	AWG16 Blue 16	AWG16 Blue 16
Input 8	AWG16 Purple 16	AWG16 Purple 16	AWG16 Purple 16	AWG16 Purple 16
Output 1	AWG16 Blue 17	AWG16 Blue 17	AWG16 Blue 17	AWG16 Blue 17
Output 2	AWG16 Green 17	AWG16 Green 17	AWG16 Green 17	AWG16 Green 17
Output 3	AWG16 Yellow 17	AWG16 Yellow 17	AWG16 Yellow 17	AWG16 Yellow 17
Output 4	AWG16 Orange 16	AWG16 Orange 16	AWG16 Orange 16	AWG16 Orange 16
Output 5	AWG16 Brown 16	AWG16 Brown 16	AWG16 Brown 16	AWG16 Brown 16
Output 6	AWG16 Red 16	AWG16 Red 16	AWG16 Red 16	AWG16 Red 16
Output 7	AWG16 Blue 16	AWG16 Blue 16	AWG16 Blue 16	AWG16 Blue 16
Output 8	AWG16 Purple 16	AWG16 Purple 16	AWG16 Purple 16	AWG16 Purple 16
Output 9	AWG16 Blue 17	AWG16 Blue 17	AWG16 Blue 17	AWG16 Blue 17
Output 10	AWG16 Green 17	AWG16 Green 17	AWG16 Green 17	AWG16 Green 17
Output 11	AWG16 Yellow 17	AWG16 Yellow 17	AWG16 Yellow 17	AWG16 Yellow 17
Output 12	AWG16 Orange 16	AWG16 Orange 16	AWG16 Orange 16	AWG16 Orange 16
Output 13	AWG16 Brown 16	AWG16 Brown 16	AWG16 Brown 16	AWG16 Brown 16
Output 14	AWG16 Red 16	AWG16 Red 16	AWG16 Red 16	AWG16 Red 16
Output 15	AWG16 Blue 16	AWG16 Blue 16	AWG16 Blue 16	AWG16 Blue 16
Output 16	AWG16 Purple 16	AWG16 Purple 16	AWG16 Purple 16	AWG16 Purple 16
Output 17	AWG16 Blue 17	AWG16 Blue 17	AWG16 Blue 17	AWG16 Blue 17
Output 18	AWG16 Green 17	AWG16 Green 17	AWG16 Green 17	AWG16 Green 17
Output 19	AWG16 Yellow 17	AWG16 Yellow 17	AWG16 Yellow 17	AWG16 Yellow 17
Output 20	AWG16 Orange 16	AWG16 Orange 16	AWG16 Orange 16	AWG16 Orange 16
Output 21	AWG16 Brown 16	AWG16 Brown 16	AWG16 Brown 16	AWG16 Brown 16
Output 22	AWG16 Red 16	AWG16 Red 16	AWG16 Red 16	AWG16 Red 16
Output 23	AWG16 Blue 16	AWG16 Blue 16	AWG16 Blue 16	AWG16 Blue 16
Output 24	AWG16 Purple 16	AWG16 Purple 16	AWG16 Purple 16	AWG16 Purple 16
Output 25	AWG16 Blue 17	AWG16 Blue 17	AWG16 Blue 17	AWG16 Blue 17
Output 26	AWG16 Green 17	AWG16 Green 17	AWG16 Green 17	AWG16 Green 17
Output 27	AWG16 Yellow 17	AWG16 Yellow 17	AWG16 Yellow 17	AWG16 Yellow 17
Output 28	AWG16 Orange 16	AWG16 Orange 16	AWG16 Orange 16	AWG16 Orange 16
Output 29	AWG16 Brown 16	AWG16 Brown 16	AWG16 Brown 16	AWG16 Brown 16
Output 30	AWG16 Red 16	AWG16 Red 16	AWG16 Red 16	AWG16 Red 16
Output 31	AWG16 Blue 16	AWG16 Blue 16	AWG16 Blue 16	AWG16 Blue 16
Output 32	AWG16 Purple 16	AWG16 Purple 16	AWG16 Purple 16	AWG16 Purple 16
Output 33	AWG16 Blue 17	AWG16 Blue 17	AWG16 Blue 17	AWG16 Blue 17
Output 34	AWG16 Green 17	AWG16 Green 17	AWG16 Green 17	AWG16 Green 17
Output 35	AWG16 Yellow 17	AWG16 Yellow 17	AWG16 Yellow 17	AWG16 Yellow 17
Output 36	AWG16 Orange 16	AWG16 Orange 16	AWG16 Orange 16	AWG16 Orange 16
Output 37	AWG16 Brown 16	AWG16 Brown 16	AWG16 Brown 16	AWG16 Brown 16
Output 38	AWG16 Red 16	AWG16 Red 16	AWG16 Red 16	AWG16 Red 16
Output 39	AWG16 Blue 16	AWG16 Blue 16	AWG16 Blue 16	AWG16 Blue 16
Output 40	AWG16 Purple 16	AWG16 Purple 16	AWG16 Purple 16	AWG16 Purple 16
Output 41	AWG16 Blue 17	AWG16 Blue 17	AWG16 Blue 17	AWG16 Blue 17
Output 42	AWG16 Green 17	AWG16 Green 17	AWG16 Green 17	AWG16 Green 17
Output 43	AWG16 Yellow 17	AWG16 Yellow 17	AWG16 Yellow 17	AWG16 Yellow 17
Output 44	AWG16 Orange 16	AWG16 Orange 16	AWG16 Orange 16	AWG16 Orange 16
Output 45	AWG16 Brown 16	AWG16 Brown 16	AWG16 Brown 16	AWG16 Brown 16
Output 46	AWG16 Red 16	AWG16 Red 16	AWG16 Red 16	AWG16 Red 16
Output 47	AWG16 Blue 16	AWG16 Blue 16	AWG16 Blue 16	AWG16 Blue 16
Output 48	AWG16 Purple 16	AWG16 Purple 16	AWG16 Purple 16	AWG16 Purple 16
Output 49	AWG16 Blue 17	AWG16 Blue 17	AWG16 Blue 17	AWG16 Blue 17
Output 50	AWG16 Green 17	AWG16 Green 17	AWG16 Green 17	AWG16 Green 17
Output 51	AWG16 Yellow 17	AWG16 Yellow 17	AWG16 Yellow 17	AWG16 Yellow 17
Output 52	AWG16 Orange 16	AWG16 Orange 16	AWG16 Orange 16	AWG16 Orange 16
Output 53	AWG16 Brown 16	AWG16 Brown 16	AWG16 Brown 16	AWG16 Brown 16
Output 54	AWG16 Red 16	AWG16 Red 16	AWG16 Red 16	AWG16 Red 16
Output 55	AWG16 Blue 16	AWG16 Blue 16	AWG16 Blue 16	AWG16 Blue 16
Output 56	AWG16 Purple 16	AWG16 Purple 16	AWG16 Purple 16	AWG16 Purple 16
Output 57	AWG16 Blue 17	AWG16 Blue 17	AWG16 Blue 17	AWG16 Blue 17
Output 58	AWG16 Green 17	AWG16 Green 17	AWG16 Green 17	AWG16 Green 17
Output 59	AWG16 Yellow 17	AWG16 Yellow 17	AWG16 Yellow 17	AWG16 Yellow 17
Output 60	AWG16 Orange 16	AWG16 Orange 16	AWG16 Orange 16	AWG16 Orange 16
Output 61	AWG16 Brown 16	AWG16 Brown 16	AWG16 Brown 16	AWG16 Brown 16
Output 62	AWG16 Red 16	AWG16 Red 16	AWG16 Red 16	AWG16 Red 16
Output 63	AWG16 Blue 16	AWG16 Blue 16	AWG16 Blue 16	AWG16 Blue 16
Output 64	AWG16 Purple 16	AWG16 Purple 16	AWG16 Purple 16	AWG16 Purple 16
Output 65	AWG16 Blue 17	AWG16 Blue 17	AWG16 Blue 17	AWG16 Blue 17
Output 66	AWG16 Green 17	AWG16 Green 17	AWG16 Green 17	AWG16 Green 17
Output 67	AWG16 Yellow 17	AWG16 Yellow 17	AWG16 Yellow 17	AWG16 Yellow 17
Output 68	AWG16 Orange 16	AWG16 Orange 16	AWG16 Orange 16	AWG16 Orange 16
Output 69	AWG16 Brown 16	AWG16 Brown 16	AWG16 Brown 16	AWG16 Brown 16
Output 70	AWG16 Red 16	AWG16 Red 16	AWG16 Red 16	AWG16 Red 16
Output 71	AWG16 Blue 16	AWG16 Blue 16	AWG16 Blue 16	AWG16 Blue 16
Output 72	AWG16 Purple 16	AWG16 Purple 16	AWG16 Purple 16	AWG16 Purple 16
Output 73	AWG16 Blue 17	AWG16 Blue 17	AWG16 Blue 17	AWG16 Blue 17
Output 74	AWG16 Green 17	AWG16 Green 17	AWG16 Green 17	AWG16 Green 17
Output 75	AWG16 Yellow 17	AWG16 Yellow 17	AWG16 Yellow 17	AWG16 Yellow 17
Output 76	AWG16 Orange 16	AWG16 Orange 16	AWG16 Orange 16	AWG16 Orange 16
Output 77	AWG16 Brown 16	AWG16 Brown 16	AWG16 Brown 16	AWG16 Brown 16
Output 78	AWG16 Red 16	AWG16 Red 16	AWG16 Red 16	AWG16 Red 16
Output 79	AWG16 Blue 16	AWG16 Blue 16	AWG16 Blue 16	AWG16 Blue 16
Output 80	AWG16 Purple 16	AWG16 Purple 16	AWG16 Purple 16	AWG16 Purple 16
Output 81	AWG16 Blue 17	AWG16 Blue 17	AWG16 Blue 17	AWG16 Blue 17
Output 82	AWG16 Green 17	AWG16 Green 17	AWG16 Green 17	AWG16 Green 17
Output 83	AWG16 Yellow 17	AWG16 Yellow 17	AWG16 Yellow 17	AWG16 Yellow 17
Output 84	AWG16 Orange 16	AWG16 Orange 16	AWG16 Orange 16	AWG16 Orange 16
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Output 86	AWG16 Red 16	AWG16 Red 16	AWG16 Red 16	AWG16 Red 16
Output 87	AWG16 Blue 16	AWG16 Blue 16	AWG16 Blue 16	AWG16 Blue 16
Output 88	AWG16 Purple 16	AWG16 Purple 16	AWG16 Purple 16	AWG16 Purple 16
Output 89	AWG16 Blue 17	AWG16 Blue 17	AWG16 Blue 17	AWG16 Blue 17
Output 90	AWG16 Green 17	AWG16 Green 17	AWG16 Green 17	AWG16 Green 17
Output 91	AWG16 Yellow 17	AWG16 Yellow 17	AWG16 Yellow 17	AWG16 Yellow 17
Output 92	AWG16 Orange 16	AWG16 Orange 16	AWG16 Orange 16	AWG16 Orange 16
Output 93	AWG16 Brown 16	AWG16 Brown 16	AWG16 Brown 16	AWG16 Brown 16
Output 94	AWG16 Red 16	AWG16 Red 16	AWG16 Red 16	AWG16 Red 16
Output 95	AWG16 Blue 16	AWG16 Blue 16	AWG16 Blue 16	AWG16 Blue 16
Output 96	AWG16 Purple 16	AWG16 Purple 16	AWG16 Purple 16	AWG16 Purple 16
Output 97	AWG16 Blue 17	AWG16 Blue 17	AWG16 Blue 17	AWG16 Blue 17
Output 98	AWG16 Green 17	AWG16 Green 17	AWG16 Green 17	AWG16 Green 17
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Output 100	AWG16 Orange 16	AWG16 Orange 16	AWG16 Orange 16	AWG16 Orange 16
Output 101	AWG16 Brown 16	AWG16 Brown 16	AWG16 Brown 16	AWG16 Brown 16
Output 102	AWG16 Red 16	AWG16 Red 16	AWG16 Red 16	AWG16 Red 16
Output 103	AWG16 Blue 16	AWG16 Blue 16	AWG16 Blue 16	AWG16 Blue 16
Output 104	AWG16 Purple 16	AWG16 Purple 16	AWG16 Purple 16	AWG16 Purple 16
Output 105	AWG16 Blue 17	AWG16 Blue 17	AWG16 Blue 17	AWG16 Blue 17
Output 106	AWG16 Green 17	AWG16 Green 17	AWG16 Green 17	AWG16 Green 17
Output 107	AWG16 Yellow 17	AWG16 Yellow 17	AWG16 Yellow 17	AWG16 Yellow 17
Output 108	AWG16 Orange 16	AWG16 Orange 16	AWG16 Orange 16	AWG16 Orange 16
Output 109	AWG16 Brown 16	AWG16 Brown 16	AWG16 Brown 16	AWG16 Brown 16
Output 110	AWG16 Red 16	AWG16 Red 16	AWG16 Red 16	AWG16 Red 16
Output 111	AWG16 Blue 16	AWG16 Blue 16	AWG16 Blue 16	AWG16 Blue 16
Output 112	AWG16 Purple 16	AWG16 Purple 16	AWG16 Purple 16	AWG16 Purple 16
Output 113	AWG16 Blue 17	AWG16 Blue 17	AWG16 Blue 17	AWG16 Blue 17
Output 114	AWG16 Green 17	AWG16 Green 17	AWG16 Green 17	AWG16 Green 17
Output 115	AWG16 Yellow 17	AWG16 Yellow 17	AWG16 Yellow 17	AWG16 Yellow 17
Output 116	AWG16 Orange 16	AWG16 Orange 16	AWG16 Orange 16	AWG16 Orange 16
Output 117	AWG16 Brown 16	AWG16 Brown 16	AWG16 Brown 16	AWG16 Brown 16
Output 118	AWG16 Red 16	AWG16 Red 16	AWG16 Red 16	AWG16 Red 16
Output 119	AWG16 Blue 16	AWG16 Blue 16	AWG16 Blue 16	AWG16 Blue 16
Output 120	AWG16 Purple 16	AWG16 Purple 16	AWG16 Purple 16	AWG16 Purple 16

Other ratios possible

- Planetary gearbox: Metal gears on all stages. IP65 apart from the output shaft.
- Worm gearbox: On the first stage, the planet gears are made of composite materials which improve efficiency and service life. On the other stages, the metal gears turn on needle bearings. IP65 apart from the output shaft.
- Worm gearbox: All gears are metal and turn on needle bearings, resulting in excellent robustness and a very long service life. IP65 apart from the output shaft.
- Worm gearbox: This gearbox contains a hardened steel worm and a hard bronze helical gear wheel, thus ensuring a long service life. The wheel is coated with grease, ensuring an excellent slip coefficient and good heat dissipation. Springs and spacers are used in combination with a compression spring to create a tight seal at the gearbox output shaft and the motor input shaft. IP65 gearbox.
- The casing is made of aluminum to maximize heat exchange with its supporting surface on the machine. However, due to the high power that can be transmitted by this gearbox and the low efficiency inherent in large worm gearbox reduction ratios, make sure that the gearbox casing temperature does not exceed 70°C during operation.
- The output shaft can be placed on the right or left, or can be a double shaft (shaft output on both sides).

801410 - 801810 - 802010 - TN21 + RAD10 with or without brake



- L2 80140: 82 max.
- L2 80180-80200: 112 max.
- L3 80140: 123 max.
- L3 80180-80200: 143 max.
- Parallel key 6 x 6 x 20 DIN 6885 A
- 6 x 6 x 6, depth 8
- 6 x 6 x 6, depth 10 over Ø 40
- Command cable 8 x AWG24 / 500 mm
- Power cable 2 x AWG16 / 500 mm

GEARBOXES FOR DcMind BRUSHLESS RANGE

4 to 120 Nm

- Planetary and worm gearboxes
- Shafts on ball bearings
- Long service life
- IP65



Part numbers

Gearbox	Planetary D 25	Planetary D 32	Planetary D 41	Worm
Type	F10495	F10496	F10497	F10410
Input 1	AWG16 Blue	AWG16 Blue	AWG16 Blue	AWG16 Blue
Input 2	AWG16 Green 17	AWG16 Green 17	AWG16 Green 17	AWG16 Green 17
Input 3	AWG16 Yellow 17	AWG16 Yellow 17	AWG16 Yellow 17	AWG16 Yellow 17
Input 4	AWG16 Orange 16	AWG16 Orange 16	AWG16 Orange 16	AWG16 Orange 16
Input 5	AWG16 Brown 16	AWG16 Brown 16	AWG16 Brown 16	AWG16 Brown 16
Input 6	AWG16 Red 16	AWG16 Red 16	AWG16 Red 16	AWG16 Red 16
Input 7	AWG16 Blue 16	AWG16 Blue 16	AWG16 Blue 16	AWG16 Blue 16
Input 8	AWG16 Purple 16	AWG16 Purple 16	AWG16 Purple 16	AWG16 Purple 16
Output 1	AWG16 Blue 17	AWG16 Blue 17	AWG16 Blue 17	AWG16 Blue 17
Output 2	AWG16 Green 17	AWG16 Green 17	AWG16 Green 17	AWG16 Green 17
Output 3	AWG16 Yellow 17	AWG16 Yellow 17	AWG16 Yellow 17	AWG16 Yellow 17
Output 4	AWG16 Orange 16	AWG16 Orange 16	AWG16 Orange 16	AWG16 Orange 16
Output 5	AWG16 Brown 16	AWG16 Brown 16	AWG16 Brown 16	AWG16 Brown 16
Output 6	AWG16 Red 16	AWG16 Red 16	AWG16 Red 16	AWG16 Red 16
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Output 8	AWG16 Purple 16	AWG16 Purple 16	AWG16 Purple 16	AWG16 Purple 16
Output 9	AWG16 Blue 17	AWG16 Blue 17	AWG16 Blue 17	AWG16 Blue 17
Output 10	AWG16 Green 17	AWG16 Green 17	AWG16 Green 17	AWG16 Green 17
Output 11	AWG16 Yellow 17	AWG16 Yellow 17	AWG16 Yellow 17	AWG16 Yellow 17
Output 12	AWG16 Orange 16	AWG16 Orange 16	AWG16 Orange 16	AWG16 Orange 16
Output 13	AWG16 Brown 16	AWG16 Brown 16	AWG16 Brown 16	AWG16 Brown 16
Output 14	AWG16 Red 16	AWG16 Red 16	AWG16 Red 16	AWG16 Red 16
Output 15	AWG16 Blue 16	AWG16 Blue 16	AWG16 Blue 16	AWG16 Blue 16
Output 16	AWG16 Purple 16	AWG16 Purple 16	AWG16 Purple 16	AWG16 Purple 16
Output 17	AWG16 Blue 17	AWG16 Blue 17	AWG16 Blue 17	AWG16 Blue 17
Output 18	AWG16 Green 17	AWG16 Green 17	AWG16 Green 17	AWG16 Green 17
Output 19	AWG16 Yellow 17	AWG16 Yellow 17	AWG16 Yellow 17	AWG16 Yellow 17
Output 20	AWG16 Orange 16	AWG16 Orange 16	AWG16 Orange 16	AWG16 Orange 16
Output 21	AWG16 Brown 16	AWG16 Brown 16	AWG16 Brown 16	AWG16 Brown 16
Output 22	AWG16 Red 16	AWG16 Red 16	AWG16 Red 16	AWG16 Red 16
Output 23	AWG16 Blue 16	AWG16 Blue 16	AWG16 Blue 16	AWG16 Blue 16
Output 24	AWG16 Purple 16	AWG16 Purple 16	AWG16 Purple 16	AWG16 Purple 16
Output 25	AWG16 Blue 17	AWG16 Blue 17	AWG16 Blue 17	AWG16 Blue 17
Output 26	AWG16 Green 17	AWG16 Green 17	AWG16 Green 17	AWG16 Green 17
Output 27	AWG16 Yellow 17	AWG16 Yellow 17	AWG16 Yellow 17	AWG16 Yellow 17
Output 28	AWG16 Orange 16	AWG16 Orange 16	AWG16 Orange 16	AWG16 Orange 16
Output 29	AWG16 Brown 16	AWG16 Brown 16	AWG16 Brown 16	AWG16 Brown 16
Output 30	AWG16 Red 16	AWG16 Red 16	AWG16 Red 16	AWG16 Red 16
Output 31	AWG16 Blue 16	AWG16 Blue 16	AWG16 Blue 16	AWG16 Blue 16
Output 32	AWG16 Purple 16	AWG16 Purple 16	AWG16 Purple 16	AWG16 Purple 16
Output 33	AWG16 Blue 17	AWG16 Blue 17	AWG16 Blue 17	AWG16 Blue 17
Output 34	AWG16 Green 17	AWG16 Green 17	AWG16 Green 17	AWG16 Green 17
Output 35	AWG16 Yellow 17	AWG16 Yellow 17	AWG16 Yellow 17	AWG16 Yellow 17
Output 36	AWG16 Orange 16	AWG16 Orange 16	AWG16 Orange 16	AWG16 Orange 16
Output 37	AWG16 Brown 16	AWG16 Brown 16	AWG16 Brown 16	AWG16 Brown 16
Output 38	AWG16 Red 16	AWG16 Red 16	AWG16 Red 16	AWG16 Red 16
Output 39	AWG16 Blue 16	AWG16 Blue 16	AWG16 Blue 16	AWG16 Blue 16
Output 40	AWG16 Purple 16	AWG16 Purple 16	AWG16 Purple 16	AWG16 Purple 16
Output 41	AWG16 Blue 17	AWG16 Blue 17	AWG16 Blue 17	AWG16 Blue 17
Output 42	AWG16 Green 17	AWG16 Green 17	AWG16 Green 17	AWG16 Green 17
Output 43	AWG16 Yellow 17	AWG16 Yellow 17	AWG16 Yellow 17	AWG16 Yellow 17
Output 44	AWG16 Orange 16	AWG16 Orange 16	AWG16 Orange 16	AWG16 Orange 16
Output 45	AWG16 Brown 16	AWG16 Brown 16	AWG16 Brown 16	AWG16 Brown 16
Output 46	AWG16 Red 16	AWG16 Red 16	AWG16 Red 16	AWG16 Red 16
Output 47	AWG16 Blue 16	AWG16 Blue 16	AWG16 Blue 16	AWG16 Blue 16
Output 48	AWG16 Purple 16	AWG16 Purple 16	AWG16 Purple 16	AWG16 Purple 16
Output 49	AWG16 Blue 17	AWG16 Blue 17	AWG16 Blue 17	AWG16 Blue 17
Output 50	AWG16 Green 17	AWG16 Green 17	AWG16 Green 17	AWG16 Green 17
Output 51	AWG16 Yellow 17	AWG16 Yellow 17	AWG16 Yellow 17	AWG16 Yellow 17
Output 52	AWG16 Orange 16	AWG16 Orange 16	AWG16 Orange 16	AWG16 Orange 16
Output 53	AWG16 Brown 16	AWG16 Brown 16	AWG16 Brown 16	AWG16 Brown 16
Output 54	AWG16 Red 16	AWG16 Red 16	AWG16 Red 16	AWG16 Red 16
Output 55	AWG16 Blue 16	AWG16 Blue 16	AWG16 Blue 16	AWG16 Blue 16
Output 56	AWG16 Purple 16	AWG16 Purple 16	AWG16 Purple 16	AWG16 Purple 16
Output 57	AWG16 Blue 17	AWG16 Blue 17	AWG16 Blue 17	AWG16 Blue 17
Output 58	AWG16 Green 17	AWG16 Green 17	AWG16 Green 17	AWG16 Green 17
Output 59	AWG16 Yellow 17	AWG16 Yellow 17	AWG16 Yellow 17	AWG16 Yellow 17
Output 60	AWG16 Orange 16	AWG16 Orange 16	AWG16 Orange 16	AWG16 Orange 16
Output 61	AWG16 Brown 16	AWG16 Brown 16	AWG16 Brown 16	AWG16 Brown 16
Output 62	AWG16 Red 16	AWG16 Red 16	AWG16 Red 16	AWG16 Red 16
Output 63	AWG16 Blue 16	AWG16 Blue 16	AWG16 Blue 16	AWG16 Blue 16
Output 64	AWG16 Purple 16	AWG16 Purple 16	AWG16 Purple 16	AWG16 Purple 16
Output 65	AWG16 Blue 17	AWG16 Blue 17	AWG16 Blue 17	AWG16 Blue 17
Output 66	AWG16 Green 17	AWG16 Green 17	AWG16 Green 17	AWG16 Green 17
Output 67	AWG16 Yellow 17	AWG16 Yellow 17	AWG16 Yellow 17	AWG16 Yellow 17
Output 68	AWG16 Orange 16	AWG16 Orange 16	AWG16 Orange 16	AWG16 Orange 16
Output 69	AWG16 Brown 16	AWG16 Brown 16	AWG16 Brown 16	AWG16 Brown 16
Output 70	AWG16 Red 16	AWG16 Red 16	AWG16 Red 16	AWG16 Red 16
Output 71	AWG16 Blue 16	AWG16 Blue 16	AWG16 Blue 16	AWG16 Blue 16
Output 72	AWG16 Purple 16	AWG16 Purple 16	AWG16 Purple 16	AWG16 Purple 16
Output 73	AWG16 Blue 17	AWG16 Blue 17	AWG16 Blue 17	AWG16 Blue 17
Output 74	AWG16 Green 17	AWG16 Green 17	AWG16 Green 17	AWG16 Green 17
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Output 76	AWG16 Orange 16	AWG16 Orange 16	AWG16 Orange 16	AWG16 Orange 16
Output 77	AWG16 Brown 16	AWG16 Brown 16	AWG16 Brown 16	AWG16 Brown 16
Output 78	AWG16 Red 16	AWG16 Red 16	AWG16 Red 16	AWG16 Red 16
Output 79	AWG16 Blue 16	AWG16 Blue 16	AWG16 Blue 16	AWG16 Blue 16
Output 80	AWG16 Purple 16	AWG16 Purple 16	AWG16 Purple 16	AWG16 Purple 16
Output 81	AWG16 Blue 17	AWG16 Blue 17	AWG16 Blue 17	AWG16 Blue 17
Output 82	AWG16 Green 17	AWG16 Green 17	AWG16 Green 17	AWG16 Green 17
Output 83	AWG16 Yellow 17	AWG16 Yellow 17	AWG16 Yellow 17	AWG16 Yellow 17
Output 84	AWG16 Orange 16	AWG16 Orange 16	AWG16 Orange 16	AWG16 Orange 16
Output 85	AWG16 Brown 16	AWG16 Brown 16	AWG16 Brown 16	AWG16 Brown 16
Output 86	AWG16 Red 16	AWG16 Red 16	AWG16 Red 16	AWG16 Red 16
Output 87	AWG16 Blue 16	AWG16 Blue 16	AWG16 Blue 16	AWG16 Blue 16
Output 88	AWG16 Purple 16	AWG16 Purple 16	AWG16 Purple 16	AWG16 Purple 16
Output 89	AWG16 Blue 17	AWG16 Blue 17	AWG16 Blue 17	AWG16 Blue 17
Output 90	AWG16 Green 17	AWG16 Green 17	AWG16 Green 17	AWG16 Green 17
Output 91	AWG16 Yellow 17	AWG16 Yellow 17	AWG16 Yellow 17	AWG16 Yellow 17
Output 92	AWG16 Orange 16	AWG16 Orange 16	AWG16 Orange 16	AWG16 Orange 16
Output 93	AWG16 Brown 16	AWG16 Brown 16	AWG16 Brown 16	AWG16 Brown 16
Output 94	AWG16 Red 16	AWG16 Red 16	AWG16 Red 16	AWG16 Red 16
Output 95	AWG16 Blue 16	AWG16 Blue 16	AWG16 Blue 16	AWG16 Blue 16
Output 96	AWG16 Purple 16	AWG16 Purple 16	AWG16 Purple 16	AWG16 Purple 16
Output 97	AWG16 Blue 17	AWG16 Blue 17	AWG16 Blue 17	AWG16 Blue 17
Output 98	AWG16 Green 17	AWG16 Green 17	AWG16 Green 17	AWG16 Green 17
Output 99	AWG16 Yellow 17	AWG16 Yellow 17	AWG16 Yellow 17	AWG16 Yellow 17
Output 100	AWG16 Orange 16	AWG16 Orange 16	AWG16 Orange 16	AWG16 Orange 16
Output 101	AWG16 Brown 16	AWG16 Brown 16	AWG16 Brown 16	AWG16 Brown 16
Output 102	AWG16 Red 16	AWG16 Red 16	AWG16 Red 16	AWG16 Red 16
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Output 104	AWG16 Purple 16	AWG16 Purple 16	AWG16 Purple 16	AWG16 Purple 16
Output 105	AWG16 Blue 17	AWG16 Blue 17	AWG16 Blue 17	AWG16 Blue 17
Output 106	AWG16 Green 17	AWG16 Green 17	AWG16 Green 17	AWG16 Green 17
Output 107	AWG16 Yellow 17	AWG16 Yellow 17	AWG16 Yellow 17	AWG16 Yellow 17
Output 108	AWG16 Orange 16	AWG16 Orange 16	AWG16 Orange 16	AWG16 Orange 16
Output 109	AWG16 Brown 16	AWG16 Brown 16	AWG16 Brown 16	AWG16 Brown 16
Output 110	AWG16 Red 16	AWG16 Red 16	AWG16 Red 16	AWG16 Red 16
Output 111	AWG16 Blue 16	AWG16 Blue 16	AWG16 Blue 16	AWG16 Blue 16
Output 112	AWG16 Purple 16	AWG16 Purple 16	AWG16 Purple 16	AWG16 Purple 16
Output 113	AWG16 Blue 17	AWG16 Blue 17	AWG16 Blue 17	AWG16 Blue 17
Output 114	AWG16 Green 17	AWG16 Green 17	AWG16 Green 17	AWG16 Green 17
Output 115	AWG16 Yellow 17	AWG16 Yellow 17	AWG16 Yellow 17	AWG16 Yellow 17
Output 116	AWG16 Orange 16	AWG16 Orange 16	AWG16 Orange 16	AWG16 Orange 16
Output 117	AWG16 Brown 16	AWG16 Brown 16	AWG16 Brown 16	AWG16 Brown 16
Output 118	AWG16 Red 16	AWG16 Red 16	AWG16 Red 16	AWG16 Red 16
Output 119	AWG16 Blue 16	AWG16 Blue 16	AWG16 Blue 16	AWG16 Blue 16
Output 120	AWG16 Purple 16	AWG16 Purple 16	AWG16 Purple 16	AWG16 Purple 16
Output 121	AWG16 Blue 17	AWG16 Blue 17	AWG16 Blue 17	AWG16 Blue 17
Output 122	AWG16 Green 17	AWG16 Green 17	AWG16 Green 17	AWG16 Green 17
Output 123	AWG16 Yellow 17	AWG16 Yellow 17	AWG16 Yellow 17	AWG16 Yellow 17
Output 124	AWG16 Orange 16	AWG16 Orange 16	AWG16 Orange 16	AWG16 Orange 16
Output 125	AWG16 Brown 16	AWG16 Brown 16	AWG16 Brown 16	AWG16 Brown 16
Output 126	AWG16 Red 16	AWG16 Red 16	AWG16 Red 16	AWG16 Red 16
Output 127	AWG16 Blue 16	AWG16 Blue 16	AWG16 Blue 16	AWG16 Blue 16
Output 128	AWG16 Purple 16	AWG16 Purple 16	AWG16 Purple 16	AWG16 Purple 16
Output 129	AWG16 Blue 17	AWG16 Blue 17	AWG16 Blue 17	AWG16 Blue 17
Output 130	AWG16 Green 17	AWG16 Green 17	AWG16 Green 17	AWG16 Green 17
Output 131	AWG16 Yellow 17	AWG16 Yellow 17	AWG16 Yellow 17	AWG16 Yellow 17
Output 132	AWG16 Orange 16	AWG16 Orange 16	AWG16 Orange 16	AWG16 Orange 16
Output 133	AWG16 Brown 16	AWG16 Brown 16	AWG16 Brown 16	AWG16 Brown 16
Output 134	AWG16 Red 16	AWG16 Red 16	AWG16 Red 16	AWG16 Red 16
Output 135	AWG16 Blue 16	AWG16 Blue 16	AWG16 Blue 16	AWG16 Blue 16
Output 136	AWG16 Purple 16	AWG16 Purple 16	AWG16 Purple 16	AWG16 Purple 16
Output 137	AWG16 Blue 17	AWG16 Blue 17	AWG16 Blue 17	AWG16 Blue 17
Output 138	AWG16 Green 17	AWG16 Green 17	AWG16 Green 17	AWG16 Green 17
Output 139	AWG16 Yellow 17	AWG16 Yellow 17	AWG16 Yellow 17	AWG16 Yellow 17
Output 140	AWG16 Orange 16	AWG16 Orange 16	AWG16 Orange 16	AWG16 Orange 16
Output 141	AWG16 Brown 16	AWG16 Brown 16	AWG16 Brown 16	AWG16 Brown 16
Output 142	AWG16 Red 16	AWG16 Red 16	AWG16 Red 16	AWG16 Red 16
Output 143	AWG16 Blue 16	AWG16 Blue 16	AWG16 Blue 16	AWG16 Blue 16
Output 144	AWG16 Purple 16	AWG16 Purple 16	AWG16 Purple 16	AWG16 Purple 16
Output 145	AWG16 Blue 17	AWG16 Blue 17	AWG16 Blue 17	AWG16 Blue 17
Output 146	AWG16 Green 17	AWG16 Green 17	AWG16 Green 17	AWG16 Green 17
Output 147	AWG16 Yellow 17	AWG16 Yellow 17	AWG16 Yellow 17	AWG16 Yellow 17
Output 148	AWG16 Orange 16	AWG16 Orange 16	AWG16 Orange 16	AWG16 Orange 16
Output 149	AWG16 Brown 16	AWG16 Brown 16	AWG16 Brown 16	AWG16 Brown 16
Output 150	AWG16 Red 16	AWG16 Red 16	AWG16 Red 16	AWG16 Red 16
Output 151	AWG16 Blue 16	AWG16 Blue 16	AWG16 Blue 16	AWG16 Blue 16
Output 152	AWG16 Purple 16	AWG16 Purple 16	AWG16 Purple 16	AWG16 Purple 16
Output 153	AWG16 Blue 17	AWG16 Blue 17	AWG16 Blue 17	AWG16 Blue 17
Output 154	AWG16 Green 17	AWG16 Green 17	AWG16 Green 17	AWG16 Green 17
Output 155	AWG16 Yellow 17	AWG16 Yellow 17	AWG16 Yellow 17	AWG16 Yellow 17
Output 156	AWG16 Orange 16	AWG16 Orange 16	AWG16 Orange 16	AWG16 Orange 16
Output 157	AWG16 Brown 16	AWG16 Brown 16	AWG16 Brown 16	AWG16 Brown 16
Output 158	AWG16 Red 16	AWG16 Red 16	AWG16 Red 16	AWG16 Red 16
Output 159	AWG16 Blue 16	AWG16 Blue 16	AWG16 Blue 16	AWG16 Blue 16
Output 160	AWG16 Purple 16	AWG16 Purple 16	AWG16 Purple 16	AWG16 Purple 16
Output 161	AWG16 Blue 17	AWG16 Blue 17	AWG16 Blue 17	AWG16 Blue 17
Output 162	AWG16 Green 17	AWG16 Green 17	AWG16 Green 17	AWG16 Green 17
Output 163	AWG16 Yellow 17	AWG16 Yellow 17	AWG16 Yellow 17	AWG16 Yellow 17
Output 164	AWG16 Orange 16	AWG16 Orange 16	AWG16 Orange 16	AWG16 Orange 16
Output 165	AWG16 Brown 16	AWG16 Brown 16	AWG16 Brown 16	AWG16 Brown 16
Output 166	AWG16 Red 16	AWG16 Red 16	AWG16 Red 16	AWG16 Red 16
Output 167	AWG16 Blue 16	AWG16 Blue 16	AWG16 Blue 16	AWG16 Blue 16
Output 168	AWG16 Purple 16	AWG16 Purple 16	AWG16 Purple 16	AWG16 Purple 16
Output 169	AWG16 Blue 17	AWG16 Blue 17	AWG16 Blue 17	AWG16 Blue 17
Output 170	AWG16 Green 17	AWG16 Green 17	AWG16 Green 17	AWG16 Green 17
Output 171	AWG16 Yellow 17	AWG16 Yellow 17	AWG16 Yellow 17	AWG16 Yellow 17
Output 172	AWG16 Orange 16	AWG16 Orange 16	AWG16 Orange 16	AWG16 Orange 16
Output 173	AWG16 Brown 16	AWG16 Brown 16	AWG16 Brown 16	AWG16 Brown 16
Output 174	AWG16 Red 16	AWG16 Red 16	AWG16 Red 16	AWG16 Red 16
Output 175	AWG16 Blue 16	AWG16 Blue 16	AWG16 Blue 16	AWG16 Blue 16
Output 176	AWG16 Purple 16	AWG16 Purple 16	AWG16 Purple 16	AWG16 Purple 16
Output 177	AWG16 Blue 17	AWG16 Blue 17	AWG16 Blue 17	AWG16 Blue 17
Output 178	AWG16 Green 17	AWG16 Green 17	AWG16 Green 17	AWG16 Green 17
Output 179	AWG16 Yellow 17	AWG16 Yellow 17	AWG16 Yellow 17	AWG16 Yellow 17
Output 180	AWG16 Orange 16	AWG16 Orange 16	AWG16 Orange 16	AWG16 Orange 16
Output 181</				